

# EASTLINE PROJECT - 2100 TELEGRAPH

Appendices

State Clearinghouse No. 2016122009



Prepared for:  
City of Oakland

December 2017

URBAN  
PLANNING  
PARTNERS  
INC.





# EASTLINE PROJECT - 2100 TELEGRAPH

Appendices

State Clearinghouse No. 2016122009

Prepared for the City of Oakland

By:

Urban Planning Partners, Inc.  
388 17th Street, Suite 230  
Oakland, CA 94612

With:

BASELINE Environmental Consulting  
LSA Associates  
Fehr and Peers  
PreVision Design  
Rowan Williams Davies & Irwin Inc.

December 2017

The logo for Urban Planning Partners Inc. is a solid orange square containing the text "URBAN PLANNING PARTNERS INC." in white, uppercase, sans-serif font, arranged in four lines.

URBAN  
PLANNING  
PARTNERS  
INC.



# APPENDICES

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## **APPENDIX A: Notice of Preparation and Written Comments Received**



# CITY OF OAKLAND



DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 3315 • OAKLAND, CALIFORNIA 94612

Planning and Building Department  
Bureau of Planning

(510) 238-3941  
FAX (510) 238-6538  
TDD (510) 238-3254

## **NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) EASTLINE PROJECT – 2100 TELEGRAPH**

The City of Oakland's Department of Planning and Building is preparing a Draft Environmental Impact Report (EIR) for the proposed Eastline Project – 2100 Telegraph (the project) as identified below, and is requesting comments on the scope and content of the Draft EIR. The Draft EIR will address the potential physical, environmental effects that the project may have on each of the environmental topics outlined in the California Environmental Quality Act (CEQA). The City has not prepared an Initial Study.

The City of Oakland is the Lead Agency for the project and is the public agency with the greatest responsibility for approving the project or carrying it out. This notice is being sent to Responsible Agencies and other interested parties. Responsible Agencies are those public agencies, besides the City of Oakland, that also have a role in approving or carrying out the project. When the Draft EIR is published, it will be sent to all Responsible Agencies and to others who respond to this NOP or who otherwise indicate that they would like to receive a copy. Responses to this NOP and any questions or comments should be directed in writing to or via email to: Peterson Z. Vollmann, City of Oakland, Bureau of Planning, 250 Frank H. Ogawa, Suite 2114 Oakland, CA 94612; (510) 238-6167(phone); (510) 238-4730(fax) or by e-mail at [pvollmann@oaklandnet.com](mailto:pvollmann@oaklandnet.com). Comments on the NOP must be received at the above mailing or e-mail address **by 4:00 p.m. on January 3, 2017**. Please reference case number **ER16-011** in all correspondence. In addition, comments may be provided at the EIR Scoping Meetings to be held before the City Planning Commission and Landmarks Preservation Advisory Board:

**PUBLIC HEARINGS:** The City Planning Commission will conduct a public scoping hearing on the Draft EIR for the project on December 21, 2016 at 6:00 p.m. in Sgt. Mark Dunakin Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza, Oakland, CA 94612.

The Landmarks Preservation Advisory Board will conduct a public scoping hearing on the Draft EIR for the project on Monday, December 12, 2016, at 6:00 p.m. in Sgt. Mark Dunakin Hearing Room 1, City Hall, 1 Frank H. Ogawa Plaza, Oakland, CA 94612.

**PROJECT TITLE:** Eastline Project – 2100 Telegraph

**PROJECT LOCATION:** The development site (also referred to as project site) encompasses one full city block within the Uptown District of greater downtown Oakland. It is bounded by Telegraph Avenue to the west, 22<sup>nd</sup> Street to the north, Broadway to the east, and 21<sup>st</sup> Street to the south. The project site is within one block of the Uptown 19<sup>th</sup> Street Bay Area Rapid Transit District (BART) station, and is located approximately 0.5 mile east of Interstate 980 (I-980). The project site consists of five Alameda County Assessor's Parcels (APN 008-0648-001-00, APN

008-0648-011-03, APN 008-0648-016-03, APN 008-0648-018-00, and APN 008-0648-017-00), as well as a small portion of the 22<sup>nd</sup> Street right of way at the corner of Telegraph and 22<sup>nd</sup>.

**PROJECT SPONSOR:** W/L Telegraph Owner, LLC

**EXISTING CONDITIONS:** The approximately 140,041 square-foot (3.21-acre) project site consists of a 1.65-acre parcel (APN 008-0648-016-03), a 0.49-acre parcel (APN 008-0648-011-03), a 0.43-acre parcel (APN 008-0648-018-00), a 0.29-acre parcel (APN 008-0648-017-00), a 0.28-acre parcel (APN 008-0648-001-00), and a 0.07-acre portion of the 22<sup>nd</sup> street right of way. The two parcels fronting Telegraph Avenue include a two-level city-owned public parking facility (Telegraph Plaza Parking Garage), a fast food restaurant (Space Burger), and a portion of the 22<sup>nd</sup> Street right of way. The remaining three parcels, fronting Broadway, contain three 2-story buildings, including 2101 Broadway (currently vacant, originally constructed as a bank), 2127 Broadway (Bank of the West), and 2131-2147 Broadway (Sherman Clay building currently occupied by a mix of tenants). Parcels that comprise the project site are not included on any hazardous waste and substances sites list compiled pursuant to Government Code Section 65962.5.

**PROJECT DESCRIPTION:** The preferred development option is a residential and office mix with up to: 880,550 square feet of large-floor-plate office, 365,000 square-foot residential tower (up to 395 units), 85,000 square feet of ground floor retail, and 18,500 square feet of community space. This option is currently considered to be the best fit for the site and current market. However, to allow the flexibility for the development to be responsive to market demands and opportunities, a planned unit development/preliminary development plan is proposed to provide a development framework that allows a range of development. Two primary project approvals will be considered in the EIR, as follows:

- **Planned Unit Development/Preliminary Development Plan (PUD/PDP).** A development framework to redevelop the site with an urban mixed-use project including a maximum residential scenario with 1,556 dwelling units and a maximum office scenario allowing a maximum development of up to 2.8 million square feet consistent with the site's maximum floor area ratio (FAR) of 20 and associated on-site public and private parking.
- **Final Development Plan (FDP).** A project-specific approval for the currently preferred mixed-use development option that includes up to: 880,550 square-feet of large floor-plate office, 365,000 square-foot residential tower (up to 395 units), 85,000 square feet of ground floor retail, 18,500 square-feet of community space, and four levels of public as well as private parking.

The project sponsor anticipates that full buildout of the project will be less intense and fall within the "book-ends" of the two maximum development scenarios as represented by the proposed FDP. In most cases, the maximum office scenario would be the most impactful. As such, the analysis in the EIR will focus on that scenario but supplemental analysis will be provided when warranted when impacts unique to a specific scenario or the FDP are anticipated to provide a comprehensive/worst-case assessment. As an example a shade and shadow analysis will be provided for both maximum development scenarios and the proposed FDP to ensure the range of potential impacts is fully understood and disclosed.

#### **PROBABLE ENVIRONMENTAL EFFECTS:**

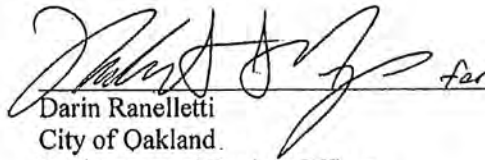
It is anticipated that the project may have significant environmental impacts related to the following environmental topic areas, which will be evaluated in the Draft EIR: **Land Use & Planning, Cultural Resources, Traffic and Transportation, Air Quality, Greenhouse Gas**



**Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Geology and Soils, Noise and Vibration, Aesthetics (Wind, Shade and Shadow), and Public Services and Utilities.** The project is not anticipated to have significant environmental impacts related to **Agriculture and Forest Resources, Biological Resources, Mineral Resources, Population and Housing, and Recreation.** A brief discussion of each of these topics and documentation as to why impacts related to these topics will not be significant will be provided in the Draft EIR. The level of analysis and discussion for these topics is anticipated to be similar to what would typically be included in an Initial Study. The City's Standard Conditions of Approval will be referenced where applicable.

The Draft EIR will also examine a reasonable range of alternatives to the project, including the CEQA-mandated No Project Alternative and other potential alternatives that may be capable of reducing or avoiding potential environmental effects.

December 2, 2016  
File Number ER16-011

  
Darin Ranelletti  
City of Oakland  
Environmental Review Officer

Attachments  
Figure 1: Project Location and Regional Vicinity Map



Source: Google Earth, 2016

2100 Telegraph Avenue Project

Figure 1  
Project Location and Vicinity Map



EDMUND G. BROWN JR.  
GOVERNOR

STATE OF CALIFORNIA  
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH  
STATE CLEARINGHOUSE AND PLANNING UNIT



KEN ALEX  
DIRECTOR

**Notice of Preparation**

December 5, 2016

To: Reviewing Agencies  
Re: Eastline Project - 2100 Telegraph  
SCH# 2016122009

Attached for your review and comment is the Notice of Preparation (NOP) for the Eastline Project - 2100 Telegraph draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

**Peterson Z. Vollman**  
City of Oakland  
250 Frank H. Ogawa Plaza, Suite 3315  
Oakland, CA 94612

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan  
Director, State Clearinghouse

Attachments  
cc: Lead Agency

Document Details Report  
State Clearinghouse Data Base

**SCH#** 2016122009  
**Project Title** Eastline Project - 2100 Telegraph  
**Lead Agency** Oakland, City of

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**Type** NOP Notice of Preparation  
**Description** The preferred development option is a residential and office mix with up to: 880,550 sf of large-floor-plate office, 365,000 sf residential tower (up to 395 units), 85,000 sf of ground floor retail, and 18,500 sf of community space. This option is currently considered to be the best fit for the site and current market. However, to allow the flexibility for the development to be responsive to market demands and opportunities, a planned unit development/preliminary development plan is proposed to provide a development framework that allows a range of development. Two primary project approvals will be considered in the EIR, as follows: planned unit development/preliminary development plan and final development plan.

---

**Lead Agency Contact**

**Name** Peterson Z. Vollman  
**Agency** City of Oakland  
**Phone** (510) 238-6167  
**email** pvollmann@oaklandnet.com  
**Address** 250 Frank H. Ogawa Plaza, Suite 3315  
**City** Oakland  
**Fax**  
**State** CA **Zip** 94612

---

**Project Location**

**County** Alameda  
**City** Oakland  
**Region**  
**Cross Streets**  
**Lat / Long**  
**Parcel No.** 008-0648-001-00, -011-03, -016-03, -018-00, -017-00  
**Township** **Range** **Section** **Base**

---

**Proximity to:**

**Highways**  
**Airports**  
**Railways** BART  
**Waterways**  
**Schools**  
**Land Use**

---

**Project Issues** Landuse; Traffic/Circulation; Air Quality; Other Issues; Housing; Water Quality; Soil Erosion/Compaction/Grading; Noise; Aesthetic/Visual; Public Services

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**Reviewing Agencies** Resources Agency; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Department of Water Resources; Department of Fish and Wildlife, Region 3; Office of Emergency Services, California; Native American Heritage Commission; Department of Housing and Community Development; Public Utilities Commission; State Lands Commission; Caltrans, District 4; California Highway Patrol; Regional Water Quality Control Board, Region 2

---

**Date Received** 12/05/2016 **Start of Review** 12/05/2016 **End of Review** 01/03/2017



**NOP Distribution List**

County: Alameda

SCH#

2016122009

Resources Agency

Resources Agency  
Nadell Gayou

Dept. of Boating & Waterways  
Denise Peterson

California Coastal Commission  
Elizabeth A. Fuchs

Colorado River Board  
Lisa Johansen

Dept. of Conservation  
Elizabeth Carpenter

California Energy Commission  
Eric Knight

Cal Fire  
Dan Foster

Central Valley Flood Protection Board  
James Herota

Office of Historic Preservation  
Ron Parsons

Dept of Parks & Recreation Environmental Stewardship Section

California Department of Resources, Recycling & Recovery  
Sue O'Leary

S.F. Bay Conservation & Dev't. Comm.  
Steve Goldbeck

Dept. of Water Resources Agency  
Nadell Gayou

Fish and Game

Dept. of Fish & Wildlife  
Scott Flint  
Environmental Services Division

Fish & Wildlife Region 1  
Curt Babcock

Fish & Wildlife Region 1E  
Laurie Harnsberger

Fish & Wildlife Region 2  
Jeff Drongesen

Fish & Wildlife Region 3  
Craig Weightman

Fish & Wildlife Region 4  
Julie Vance

Fish & Wildlife Region 5  
Leslie Newton-Reed  
Habitat Conservation Program

Fish & Wildlife Region 6  
Tiffany Ellis  
Habitat Conservation Program

Fish & Wildlife Region 6 /IM  
Heidi Calvert  
Inyo/Mono, Habitat Conservation Program

Dept. of Fish & Wildlife M  
William Paznokas  
Marine Region

Other Departments

Food & Agriculture  
Sandra Schubert  
Dept. of Food and Agriculture

Dept. of General Services  
Public School Construction

Dept. of General Services  
Cathy Buck/George Carollo  
Environmental Services Section

Delta Stewardship Council  
Kevan Samsam

Housing & Comm. Dev.  
CEQA Coordinator  
Housing Policy Division

Independent Commissions, Boards

Delta Protection Commission  
Erik Vink

OES (Office of Emergency Services)  
Monique Wilber

Native American Heritage Comm.  
Debbie Treadway

Public Utilities Commission Supervisor

Santa Monica Bay Restoration  
Guangyu Wang

State Lands Commission  
Jennifer Deleong

Tahoe Regional Planning Agency (TRPA)  
Cherry Jacques

Cal State Transportation Agency CalSTA

Caltrans - Division of Aeronautics  
Philip Crimmins

Caltrans - Planning  
HQ LD-IGR  
Terri Pencovic

California Highway Patrol  
Suzann Ikeuchi  
Office of Special Projects

Dept. of Transportation

Caltrans, District 1  
Rex Jackman

Caltrans, District 2  
Marcelino Gonzalez

Caltrans, District 3  
Eric Federicks - South  
Susan Zanchi - North

Caltrans, District 4  
Patricia Maurice

Caltrans, District 5  
Larry Newland

Caltrans, District 6  
Michael Navarro

Caltrans, District 7  
Dianna Watson

Caltrans, District 8  
Mark Roberts

Caltrans, District 9  
Gayle Rosander

Caltrans, District 10  
Tom Dumas

Caltrans, District 11  
Jacob Armstrong

Caltrans, District 12  
Maureen El Harake

Cal EPA

Air Resources Board  
Airport & Freight  
Cathi Slaminski

Transportation Projects  
Nesamani Kalandiyur

Industrial/Energy Projects  
Mike Tollstrup

State Water Resources Control Board  
Regional Programs Unit  
Division of Financial Assistance

State Water Resources Control Board  
Cindy Forbes - Asst Deputy  
Division of Drinking Water

State Water Resources Control Board  
Div. Drinking Water # \_\_\_\_\_

State Water Resources Control Board  
Student Intern, 401 Water Quality  
Certification Unit  
Division of Water Quality

State Water Resources Control Board  
Phil Crader  
Division of Water Rights

Dept. of Toxic Substances Control  
CEQA Tracking Center

Department of Pesticide Regulation  
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

RWQCB 1  
Cathleen Hudson  
North Coast Region (1)

RWQCB 2  
Environmental Document Coordinator  
San Francisco Bay Region (2)

RWQCB 3  
Central Coast Region (3)

RWQCB 4  
Teresa Rodgers  
Los Angeles Region (4)

RWQCB 5S  
Central Valley Region (5)

RWQCB 5F  
Central Valley Region (5)  
Fresno Branch Office

RWQCB 5R  
Central Valley Region (5)  
Redding Branch Office

RWQCB 6  
Lahontan Region (6)

RWQCB 6V  
Lahontan Region (6)  
Victorville Branch Office

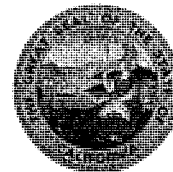
RWQCB 7  
Colorado River Basin Region (7)

RWQCB 8  
Santa Ana Region (8)

RWQCB 9  
San Diego Region (9)

Other \_\_\_\_\_

**DEPARTMENT OF TRANSPORTATION**  
DISTRICT 4  
OFFICE OF TRANSIT AND COMMUNITY PLANNING  
P.O. BOX 23660, MS-10D  
OAKLAND, CA 94623-0660  
PHONE (510) 286-5528  
FAX (510) 286-5559  
TTY 711  
www.dot.ca.gov



*Serious Drought.  
Help save water!*

December 9, 2016

SCH # 2016122009  
GTS # 04-ALA-2016-00080  
ALA-980-PM 0.53/1.59

Mr. Peterson Z. Vollmann  
Bureau of Planning  
City of Oakland  
250 Frank H. Ogawa Plaza, Suite 2114  
Oakland, CA 94612

**Eastline Project - 2100 Telegraph (ER16-011) – Notice of Preparation**

Dear Mr. Vollmann:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Eastline project. In tandem with the Metropolitan Transportation Commission's (MTC) Sustainable Communities Strategy (SCS), the Caltrans Strategic Management Plan includes targets to reduce Vehicle Miles Travelled (VMT), in part, by tripling bicycle and doubling both pedestrian and transit travel by 2020. Our comments are based on the Notice of Preparation.

***Project Understanding***

The preferred proposed project would construct a mixed used residential and office development with up to: 880,550 square feet of office space, 365,000 square feet of residential space (up to 395 units), 85,000 square feet of ground floor retail, and 18,500 square feet of community space. This option is currently considered to be the best fit for the site and current market; however two primary project approvals will be considered in the forthcoming Draft Environmental Impact Report (EIR), to allow the development the flexibility to be responsive to market demands and opportunities: a planned unit development/preliminary development plan and a final development plan.

**Planned Unit Development/Preliminary Development Plan (PUD/PDP).** A maximum urban mixed used development scenario with 1,556 residential dwelling units and 2.8 million square feet, consistent with the site's maximum floor area ratio of 20 and associated on-site public and private parking.

**Final Development Plan (FDP).** A project-specific approval for the currently preferred proposed project, as described above, and four-level of public and private parking.

The 3.21-acre project site located in the Uptown neighborhood of the proposed Downtown Specific Plan, on the block bound by Telegraph Avenue, 22<sup>nd</sup> Street, Broadway, and 21<sup>st</sup> Street. The nearest access from the State Transportation Network (STN) is from Interstate 980, less than a mile via West Grand Avenue. The project site is one block from the 19th Street Oakland BART Station and the AC Transit Uptown Transit Center. The project site is adjacent to the protected bike lanes associated with the Telegraph Avenue Complete Streets project.

Characterized by a full range of horizontally- and vertically-mixed land uses and is well-served by high-capacity transit, the project area can be described as Urban Core, according the Caltrans *Smart Mobility Framework*. The project is considered an infill project.

### ***Lead Agency***

As the Lead Agency, Oakland (the City) is responsible for all project mitigation, including any needed improvements to State highways, if necessary. The project's fair share contribution, financing, scheduling, implementation responsibilities, and Lead Agency monitoring should be fully discussed for all proposed mitigation measures.

This information should also be presented in the Mitigation Monitoring and Reporting Plan, a draft of which should be included in the Draft EIR for our review. Required roadway improvements, if necessary, should be in place prior to completion of the project.

According to CEQA Guidelines Section 15206(b)(2)(B), the proposed project is of statewide, regional, or areawide significance. In addition to sending the Draft EIR to the State Clearinghouse, the Lead Agency is required also to submit to the appropriate metropolitan area council of governments for review and comment.

### ***Transportation Impact Fees***

Please identify project-generated travel demand as the basis for estimating the costs of public transportation improvements necessitated by the proposed project; viable funding sources such as development and/or transportation impact fees should also be identified. We encourage a sufficient allocation of fair share contributions toward multi-modal and regional transit improvements to fully mitigate cumulative impacts to regional transportation. We also strongly support measures to increase sustainable mode shares, thereby reducing VMT.

### ***Travel Demand Analysis***

Please submit a travel demand analysis that provides VMT analysis resulting from the proposed project scenarios for both the PUD/PDP and FDP. In accordance with Senate Bill (SB) 743, Caltrans is focusing CEQA review on transportation infrastructure that supports smart growth and efficient development to ensure alignment with State policies through the use of innovative travel demand reduction strategies, multimodal improvements, and VMT as the primary transportation impact metric. Please ensure that the travel demand analysis includes:

- A vicinity map, regional location map, and site plan clearly showing project access in relation to the STN. Ingress and egress for all project components should be clearly identified. Clearly identify the State right-of-way (ROW). Project driveways, local roads and intersections, car/bike parking, and transit facilities should be mapped.

- A VMT analysis pursuant to the City's guidelines or, if the City has no guidelines, the Office of Planning and Research's Draft Guidelines. Projects that result in automobile VMT per capita greater than 15% below existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies—such as Caltrans—are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.
- A schematic illustration of walking, biking, and auto conditions at the project site and study area roadways. Potential safety issues for all road users should be identified and fully mitigated.
- The project's primary and secondary effects on pedestrians, bicycles, travelers with disabilities, and transit performance should be evaluated, including countermeasures and trade-offs resulting from mitigating VMT increases. Access to pedestrians, bicycle, and transit facilities must be maintained.

### ***Vehicle Trip Reduction***

Given the size of the project and its potential to generate trips to and from the project area, the project should include a robust Transportation Demand Management (TDM) Program to reduce VMT and greenhouse gas emissions. A TDM Program can be implemented through formation of or participation in a Transportation Management Association (TMA) in partnership with other developments in the area. Such measures will be critical in order to: facilitate efficient transportation access to and from the site; reduce transportation impacts associated with the project; and achieve, monitor, and enforce aggressive trip reduction targets. Please consider the following TDM strategies:

- Project design to encourage walking, bicycling, and convenient transit access;
- Facilities to promote bicycling such as secured parking, repair stations, and showers;
- Parking cash out/parking pricing for office uses;
- Unbundled parking for residential uses;
- Transit fare incentives such as free or discounted transit passes on a continuing basis; and
- Inclusion of an on-site telecommute or telework center to give residents the option of working remotely.

Implementing these TDM measures will help the project become more consistent with MTC's and Caltrans Strategic Management Plan goals. Please refer to Chapter 8 of FHWA's *Integrating Demand Management into the Transportation Planning Process: A Desk Reference*, regarding TDM at the local planning level. The reference is available online at:  
<http://www.ops.fhwa.dot.gov/publications/fhwahop12035/fhwahop12035.pdf>



Mr. Peterson Z. Vollmann, City of Oakland

December 9, 2016

Page 4

Please also refer to *Reforming Parking Policies to Support Smart Growth*—a Caltrans-funded MTC study—for sample parking ratios and strategies that support compact growth. Reducing parking supply can encourage alternate forms of transportation, reduce regional vehicle miles traveled, and lessen future impacts. This handbook is available online at:  
<http://mtc.ca.gov/sites/default/files/Toolbox-Handbook.pdf>

***Transportation Management Plan***

A Transportation Management Plan (TMP) or construction TIS may be required of the developer for approval by Caltrans prior to construction where traffic restrictions and detours affect State highways. TMPs must be prepared in accordance with *California Manual on Uniform Traffic Control Devices*. For further TMP assistance, please contact the Office of Traffic Management Plans/Operations Strategies at 510-286-4579 and see the following website:  
<http://www.dot.ca.gov/trafficops/camutcd/camutcd2014rev1.html>

***Transportation Permit***

Project work that requires movement of oversized or excessive load vehicles on State roadways requires a Transportation Permit that is issued by Caltrans. To apply, a completed Transportation Permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to:

Caltrans Transportation Permits Office  
1823 14th Street  
Sacramento, CA 95811-7119

See the following website for more information about Transportation Permits:  
<http://www.dot.ca.gov/trafficops/permits/index.html>

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Jesse Schofield at 510-286-5562 or [jesse.schofield@dot.ca.gov](mailto:jesse.schofield@dot.ca.gov).

Sincerely,



PATRICIA MAURICE  
District Branch Chief  
Local Development - Intergovernmental Review

c: State Clearinghouse

Mr. Peterson Z. Vollmann  
Bureau of Planning  
City of Oakland  
250 Frank H. Ogawa Plaza, Suite 2114  
Oakland, CA 94612

December 21, 2016

Peterson Z. Vollman  
City of Oakland Planning  
Bureau of Planning  
250 Frank H. Ogawa Plaza, Suite 2114  
Oakland, CA 94612

Re: Notice of Preparation of a Draft Environmental Impact Report – Eastline Project –  
2100 Telegraph Avenue, Oakland

Dear Mr. Vollman:

East Bay Municipal Utility District (EBMUD) appreciates the opportunity to comment on the Notice of Preparation of a Draft Environmental Impact Report for the Eastline Project located at 2100 Telegraph Avenue in the City of Oakland (City). EBMUD has the following comments.

### **WATER SERVICE**

Pursuant to Section 15155 of the California Environmental Quality Act Guidelines and Sections 10910-10915 of the California Water Code, the proposed project meets the threshold requirement for a Water Supply Assessment (WSA), because it is a mixed-use project that exceeds 250,000 square feet of commercial office space, which is one of the criteria that triggers a WSA. Please submit a written request to EBMUD to prepare a WSA. EBMUD requires the project sponsor to provide future water demand data and estimates for the project site for the analysis of the WSA. Please be aware that the WSA can take up to 90 days to complete from the day on which the request is received.

EBMUD's Central Pressure Zone, with a service elevation range between 0 and 100 feet, will serve the proposed development. A water main extension, at the project sponsor's expense, may be required to serve the proposed development depending on EBMUD's metering requirements and fire flow requirements set by the local fire department. When the development plans are finalized, the project sponsor should contact EBMUD's New Business Office and request a water service estimate to determine costs and conditions of providing water service to the proposed development. Engineering and installation of water mains and services require substantial lead time, which should be provided for in the project sponsor's development schedule.

EBMUD's Standard Site Assessment Report indicates the potential for contaminated soils or groundwater to be present within the project site boundaries. The project sponsor should be aware that EBMUD will not install piping or services in contaminated soil or groundwater (if groundwater is present at any time during the year at the depth piping is to be installed) that must be handled as a hazardous waste or that may be hazardous to the health and safety of construction and maintenance personnel wearing Level D personal protective equipment. Nor will EBMUD install piping or services in areas where groundwater contaminant concentrations exceed specified limits for discharge to the sanitary sewer system and sewage treatment plants. The project sponsor must submit copies to EBMUD of all known information regarding soil and groundwater quality within or adjacent to the project boundary and a legally sufficient, complete and specific written remediation plan establishing the methodology, planning and design of all necessary systems for the removal, treatment, and disposal of contaminated soil and groundwater.

EBMUD will not design piping or services until soil and groundwater quality data and remediation plans have been received and reviewed and will not start underground work until remediation has been carried out and documentation of the effectiveness of the remediation has been received and reviewed. If no soil or groundwater quality data exists, or the information supplied by the project sponsor is insufficient, EBMUD may require the project sponsor to perform sampling and analysis to characterize the soil and groundwater that may be encountered during excavation, or EBMUD may perform such sampling and analysis at the project sponsor's expense. If evidence of contamination is discovered during EBMUD work on the project site, work may be suspended until such contamination is adequately characterized and remediated to EBMUD standards.

## **WASTEWATER SERVICE**

EBMUD's Main Wastewater Treatment Plant (MWWTP) and interceptor system are anticipated to have adequate dry weather capacity to accommodate the proposed wastewater flows from this project and to treat such flows provided that the wastewater generated by the project meets the requirements of the EBMUD Wastewater Control Ordinance. However, wet weather flows are a concern. The East Bay regional wastewater collection system experiences exceptionally high peak flows during storms due to excessive infiltration and inflow (I/I) that enters the system through cracks and misconnections in both public and private sewer lines. EBMUD has historically operated three Wet Weather Facilities (WWFs) to provide primary treatment and disinfection for peak wet weather flows that exceed the treatment capacity of the MWWTP. Due to reinterpretation of applicable law, EBMUD's National Pollutant Discharge Elimination System (NPDES) permit now prohibits discharges from EBMUD's WWFs. Additionally, the seven wastewater collection system agencies that discharge to the EBMUD wastewater interceptor system ("Satellite Agencies") hold NPDES permits that prohibit them from causing or contributing to WWF discharges. These NPDES permits have removed the regulatory coverage the East Bay wastewater agencies once relied upon to manage peak wet weather flows.

A federal consent decree, negotiated among EBMUD, the Satellite Agencies, the Environmental Protection Agency, the State Water Resources Control Board, and the Regional Water Quality Control Board, requires EBMUD and the Satellite Agencies to eliminate WWF discharges by 2036. To meet this requirement, actions will need to be taken over time to reduce I/I in the system. The consent decree requires EBMUD to continue implementation of its Regional Private Sewer Lateral Ordinance ([www.eastbaypsl.com](http://www.eastbaypsl.com)), construct various improvements to its interceptor system, and identify key areas of inflow and rapid infiltration over a 22-year period. Over the same time period, the consent decree requires the Satellite Agencies to perform I/I reduction work including sewer main rehabilitation and elimination of inflow sources. EBMUD and the Satellite Agencies must jointly demonstrate at specified intervals that this work has resulted in a sufficient, pre-determined level of reduction in WWF discharges. If sufficient I/I reductions are not achieved, additional investment into the region's wastewater infrastructure would be required, which may result in significant financial implications for East Bay residents.

To ensure that the proposed project contributes to these legally required I/I reductions, the lead agency should require the project applicant to comply with EBMUD's Regional Private Sewer Lateral Ordinance. Additionally, it would be prudent for the lead agency to require the following mitigation measures for the proposed project: (1) replace or rehabilitate any existing sanitary sewer collection systems, including sewer lateral lines to ensure that such systems and lines are free from defects or, alternatively, disconnected from the sanitary sewer system, and (2) ensure any new wastewater collection systems, including sewer lateral lines, for the project are constructed to prevent I/I to the maximum extent feasible while meeting all requirements contained in the Regional Private Sewer Lateral Ordinance and applicable municipal codes or Satellite Agency ordinances.

## **WATER CONSERVATION**

The proposed project presents an opportunity to incorporate water conservation measures. EBMUD requests that the City include in its conditions of approval a requirement that the project sponsor comply with Assembly Bill 325, "Model Water Efficient Landscape Ordinance," (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). The project sponsor should be aware that Section 31 of EBMUD's Water Service Regulations requires that water service shall not be furnished for new or expanded service unless all the applicable water-efficiency measures described in the regulation are installed at the project sponsor's expense.

Peterson Z. Vollman  
December 21, 2016  
Page 4

If you have any questions concerning this response, please contact Timothy R. McGowan,  
Senior Civil Engineer, Major Facilities Planning Section at (510) 287-1981.

Sincerely,

A handwritten signature in cursive script that reads "David J. Rehnstrom".

David J. Rehnstrom  
Manager of Water Distribution Planning

DJR:AMM:dks  
sb16\_244

cc: W/L Telegraph Owner, LLC  
644 Menlo Avenue, Suite 205  
Menlo Park, CA 94025

## Vollmann, Peterson

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**From:** Naomi Schiff <Naomi@17th.com>  
**Sent:** Wednesday, December 21, 2016 5:35 PM  
**To:** Merkamp, Robert; Miller, Scott; Adhi Nagraj; Cmanusopc@gmail.com; Pattillo, Chris; Emily Weinstein; Tlimon.opc@gmail.com; amandamonchamp@gmail.com; Jahmese Myres; Vollmann, Peterson  
**Subject:** 2100 Telegraph: Scoping  
**Attachments:** 2100 Telegraph prelimscope-OHA.pdf

We are unable to attend this evening, but have listed some of our concerns in the attached preliminary scoping letter, with text included in this email below.

Thank you so much!

Naomi Schiff and Daniel Levy  
for Oakland Heritage Alliance

December 21, 2016

Subject: Project at 21st/22nd/Broadway/Telegraph: 2100 Telegraph Ave, ER16011

Dear Planning Commission, Pete Vollman, and Staff,

Thank you for the opportunity to comment on the scope of the DIER for the 2100 Telegraph project. Here are some preliminary thoughts. We will send a more complete letter. We are again recommending that due to the holidays, the deadline ought be extended an additional two weeks past January 3. We are unable to attend tonight, and hope that the Commission will give the public a greater chance to weigh in on this large project.

We ask that the DEIR:

**Studies all resources on site.** These include: William Pereira Bank building, Weeks building at 22nd/Broadway, KwikWay / SpaceBurger googie building at 22nd/Telegraph. We would like to see appropriate mitigations proposed for removal of these historic resource buildings. SpaceBurger could fit in well on the BART lot next to the Paramount as it would provide open space while at the same time preserve a resource.

**Studies impacts of buildings on shadows and wind on public use areas.** Please especially look just east across Broadway, where Franklin runs into Broadway. This area contains a public plaza that could be impacted by large shadows.

**Reviews Southern Pacific Electric Rail history for this site.** The odd corner at 22nd and Telegraph is due to the Southern Pacific's tracks jogging to stay on 22nd street. This odd angle adds character and context that gives a nod to Oakland's rich rail history. You can see the line on a map here:  
[https://upload.wikimedia.org/wikipedia/commons/d/da/1927\\_East\\_Bay\\_Electric\\_Lines\\_map.jpg](https://upload.wikimedia.org/wikipedia/commons/d/da/1927_East_Bay_Electric_Lines_map.jpg)

**Studies impacts of project on historic resources around the site.** These include: Hamilton Apts. (former YMCA), First Baptist Church, Cathedral District, former Breuner's Building, Kapor building, and most importantly, Paramount Theater. We would like studies on visual impacts, shadows, functionimpairing traffic and parking issues, and views.

**Discusses possibilities for unimpaired functioning of Paramount during period of construction as well as thereafter.**

Also, though not directly a historic concern, but related, we ask that the existing street grid should be supported and strengthened. In particular, please study driveway impacts to 21st and 22nd streets and how to retain and enhance pedestrian connectivity rather than depressing foot traffic in favor of auto access. We should encourage street level activation wherever possible. We would also like review of bicycle safety and bike/pedestrian interaction and would like review oneway blocks in the area. Should any be converted back to two-way?

Thank you and we look forward to submitting more complete comments soon.

-----  
**Naomi Schiff**  
238 Oakland Avenue  
Oakland, CA 94611

Telephone: 510-835-1819  
Email [naomi@17th.com](mailto:naomi@17th.com)

cell: 510-910-3764





December 21, 2016

Subject: Project at 21st/22nd/Broadway/Telegraph: [2100 Telegraph Ave. ER16011](#)

Dear Planning Commission, Pete Vollman, and Staff,

Thank you for the opportunity to comment on the scope of the DIER for the 2100 Telegraph project. Here are some preliminary thoughts. We will send a more complete letter. We are again recommending that due to the holidays, the deadline ought be extended an additional two weeks past January 3. We are unable to attend tonight, and hope that the Commission will give the public a greater chance to weigh in on this large project.

We ask that the DEIR:

**Studies all resources on site.** These include: William Pereira Bank building, Weeks building at 22nd/Broadway, KwikWay / SpaceBurger googie building at 22nd/Telegraph. We would like to see appropriate mitigations proposed for removal of these historic resource buildings. SpaceBurger could fit in well on the BART lot next to the Paramount as it would provide open space while at the same time preserve a resource.

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**Discusses possibilities for unimpaired functioning of Paramount during period of construction as well as thereafter.**

Also, though not directly a historic concern, but related, we ask that the existing street grid should be supported and strengthened. In particular, please study driveway impacts to 21st and 22nd streets and how to retain and enhance pedestrian connectivity rather than depressing foot traffic in favor of auto access. We should encourage street level activation wherever possible.

We would also like review of bicycle safety and bike/pedestrian interaction and would like review one-way blocks in the area. Should any be converted back to two-way?

Thank you and we look forward to submitting more complete comments soon.



December 15, 2016

Subject: ER16-011, Eastline Project, 2100 Telegraph

Dear planning staff and developer team,

Oakland Heritage Alliance requests an extension of the publicly-noticed time for EIR scoping comments on this project. We find the deadline of January 3, 2017 not only a bit tight for our own purposes, but fear that this extremely large project will not receive adequate scoping comments from other organizations and the public, due to the timing near the holidays.

There are not many functional work days between now and January 3, and many people will be leaving town at the end of this week, as schools are on recess.

We would appreciate a deadline no sooner than January 17, 2017, and some kind of additional public notice.

In addition, there are very few notices in the neighborhood, notably not even one seen to the east side of Broadway on a recent survey.

Thank you for considering our request.

Sincerely,

A handwritten signature in cursive script that reads "Alison Finlay".

Alison Finlay  
President

## **APPENDIX B: Cultural and Historical Resource Analysis**



## APPENDIX B: HISTORIC RESOURCE ANALYSIS

Completed by: Bridget Maley, architecture + history, llc, with contributions from Shayne Watson, Watson Heritage Consulting, and Mark Hulbert, Preservation Architecture

### I. INTRODUCTION

The following appendix was developed by architecture + history, llc in collaboration with Watson Heritage Consulting and Preservation Architecture. LSA is completing the archaeological analysis and the Historic and Cultural Resources chapter for the project DEIR. This appendix describes the conditions for above ground older and historic resources within or adjacent to the Eastline Project site at 2100 Telegraph in downtown Oakland, California. The purpose of this appendix is to: 1) develop current evaluations of historic resources on the project site; and 2) describe the baseline conditions for historic resources, including past survey evaluation information, within an approximate two block vicinity of the project site and its general surroundings which are urban in character. This effort only discusses above ground, built resources.

Historic architectural resources consist of existing buildings, structures, objects, sites and historic districts that are historically significant or previously designated at the local, State, or Federal level. These resources may display their significance for an association with an important person or notable events in American, California or local history; or, may be significant for their expression of a certain type or style of construction or architectural craftsmanship. Resources may be significant if, under the California Register criteria guidelines, sufficient time has passed to obtain a scholarly perspective on the events or individuals associated with the resource. Under the National Register criteria, properties less than 50 years in age must demonstrate “exceptional significance” at the local, state or federal level.

For the purposes of CEQA historic resources are generally defined as resources that are listed in, or determined to be eligible for listing in the California Register of Historical Resources previously or through a current evaluation; included in a local register of historical resources; or have been identified as significant in a historic resource survey, if that survey meets specified criteria. The following appendix to the Eastline Project - 2100 Telegraph EIR includes information on both previously identified historic resource and historic resources specifically evaluated for this project.

## II. EVALUATION CRITERIA - CALIFORNIA REGISTER OF HISTORICAL RESOURCES

Under that California Environmental Quality Act (CEQA) resources that meet the criteria of the California Register of Historical Resources are considered historical resources for the purposes of CEQA. Determinations of historical significance require that several factors are considered including: the property's history (both construction and use); the history and context of the surrounding community; an association with important persons or uses; the number of resources associated with the property; the potential for the resources to be the work of a master architect, builder, craftsman, landscape gardener, or artist; the historical, architectural or landscape influences that have shaped the property's design and its pattern of use; and alterations that have taken place, and lastly how these changes may have affected the property's historical integrity.

These issues must be explored thoroughly before a final determination of significance can be established. To be eligible for the California Register historic resources must possess both historic significance and retain historic integrity. The following are the four significance criteria of the California Register. Upon review of the criteria, if historic significance is identified, then the level of historic integrity must be assessed. To be eligible for the California Register, an historical resource must be significant at the local, state, or national level under at least ONE of the following four criteria:

*Criterion 1: Event or Patterns of Events*

It is associated with events or patterns of events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States.

*Criterion 2: Important Person(s)*

It is associated with the lives of persons important to local, California, or national history.

*Criterion 3: Design/Construction/Architecture*

It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values.

*Criterion 4: Information Potential<sup>1</sup>*

It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

### Historic Integrity

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<sup>1</sup> Note: Information potential is not discussed in this report.

For resources to be eligible for the California Register they must possess both historic significance and retain historic integrity. There are seven aspects of historic integrity location, design, setting, materials, workmanship, feeling and association.

**Historic District**

Resources can be eligible for the California Register individually as buildings, structures, objects or sites, or they can be eligible as a collection or cluster or historic resources within an historic district. Districts are defined as a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

**Exceptional Significance**

Generally, resources that are not yet 50 years in age must possess exceptional significance to be individually important. The California Register guidelines state that in order for a historic resource to achieve significance within the past 50-years, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource.

### III. SUMMARY HISTORIC DOWNTOWN OAKLAND DEVELOPMENT

The project site is within lands that once were part of the Rancho San Antonio granted to Luis Maria Peralta for his service to the Spanish government.<sup>2</sup> The over 40,000-acre rancho included the present-day cities of Oakland, Berkeley, Alameda, and parts of San Leandro and Piedmont. Peralta's grant was confirmed after Mexico gained independence from Spain in 1822, and the United States honored the land title when California entered the Union in 1848. Soon after, squatters had begun to use portions of Peralta's undeveloped lands. The Gold Rush and subsequent statehood brought miners, businessmen, lumbermen and other speculators to Northern California. Early settlers to the area that became Oakland include Edson Adams, Andrew Moon, and Horace Carpentier, who set up camp on what had been Peralta lands. These trailblazers soon realized the area's potential and engaged Jules Kellersberger, a Swiss immigrant and former military engineer, to lay out a city, which was officially incorporated as Oakland in 1852.

Originally, Oakland encompassed the area roughly bordered by the estuary, Market Street, 14th Street and the Lake Merritt Channel. Broadway served as the "Main Street," for the growing town. Early residents, numbering under one hundred, lived near the foot of Broadway close to the estuary. Development began moving toward the Oakland hills and ultimately eastward to what would become East Oakland.

Oakland's size and population began to expand in 1869, when the city became the terminus of the Central Pacific Railroad. With an accessible harbor, Oakland was strategically located and easily accessible to inland agricultural products. A period of rapid population expansion and physical growth followed, including the establishment of civic and commercial buildings and improved infrastructure. By the turn of the twentieth century, Oakland was beginning to attract businesses and residents away from the more populous San Francisco. Then, the 1906 earthquake and devastating San Francisco fire resulted in refugees from the burned out city across the bay pouring into East Bay towns. By 1910, Oakland had population of 150,000, more than double the 67,000 individuals counted in 1900.

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<sup>2</sup> Summary of Downtown Oakland Development summarized from Beth Bagwell, *Oakland: The Story of a City*, 1982; David Weber, *Oakland Hub of the West*, 1981; Lois Rather, *Oakland's Image: A History of Oakland, California*, 1972. Marilyn S. Johnson, *The Second Gold Rush: Oakland and the East Bay in World War II*, 1993.





A detail from the 1888 Woodward & Gamble Map of Oakland showing the area of downtown Oakland. (Source: David Rumsey Maps).

Residential and commercial development in Oakland increased during the 1910s to further accommodate displaced San Francisco residents. A number of moderately priced hotels were constructed in downtown Oakland from 1910 and 1915 to house travelers coming to the Panama Pacific International Exposition (PPIE) hosted by San Francisco. This includes the Hotel Harrison, directly across the street from the project site, and a number of other hotels in the vicinity. Also during this period, older neighborhoods became more densely populated as new apartment buildings were constructed, shopping districts expanded, hotels for visitors to the increasingly popular city were developed, and new commercial centers began to take shape along busier thoroughfares. The post-earthquake development boom defined much of downtown Oakland, with a number of landmark skyscrapers and commercial buildings constructed during this era, including the Hotel Oakland, just across the street from the project site.

World War I also increased the number of industrial establishments in both downtown and along the waterfront, which in turn contributed to increased residential construction in

areas made more easily accessible by the increased popularity and use of the automobile. Downtown Oakland saw a great number of buildings constructed during the 1920s including many structures in the blocks that surround the project site, such as the Advertiser and the Pelton-Faustina Buildings, both situated along 13<sup>th</sup> Street adjacent to the project site.

The Great Depression of the 1930s followed the post-World War I prosperity of the 1920s. Like most of the country, Oakland fell into a period of financial instability in the 1930s, with little to no building occurring, especially downtown. Then with the preparations for and outset of World War II, Oakland entered an era of intense industrial, commercial and economic development. From 1940 to 1945, Oakland's population increased by one third and by 1950, the population was nearly 385,000. The Port of Oakland became a major staging area for war operations in the Pacific and a center of wartime production of goods and materials. The economic impact of World War II on Oakland, and indeed the entire Bay Area, was significant, with effects felt in almost every sector and by the increasingly diverse communities represented in Oakland. Post War commercial building in downtown Oakland was fairly steady from the late 1940s into the early 1960s.

In the latter 1950s, a large number of the parcels along Oakland's 20th Street, from Broadway to Harrison Street, transitioned from earlier institutional, residential and automotive uses to commercial use. During the 1960s and 1970s, a relatively large number of the parcels surrounding the intersection of 20th and Franklin streets were bank owned and a cluster of branch bank buildings developed in the immediate vicinity.

In this same period, likely spurring the transition to these commercial uses, the Bay Area Rapid Transit (BART) system was being developed under and would soon open along Broadway, including a 19th Street station with portals at Broadway at 17th, 19th and 20th streets.

Between 1950 and 1980, Oakland's population steadily decreased, though it again rose in the 1980s. Shifts in the economy and changes in manufacturing methods left many empty warehouses and office buildings along Oakland's waterfront and in the downtown area. In the late 1980s and 1990s, many of these buildings were reclaimed for office and residential uses.

## IV. DEVELOPMENTAL HISTORY OF PROJECT SITE

This overview history of the area immediately surrounding the subject building was developed using Oakland Sanborn Fire Insurance Company maps dating from 1889, 1902, 1912, 1935, 1950, and 1970. Historical background in this section focuses on the subject block. The history of this area of Telegraph Avenue was somewhat difficult to trace because of major street reconfigurations (e.g., the construction of West Grand Avenue sometime between 1912 and 1935) and multiple changes to street names, block numbers, and addresses. These changes are noted throughout the following paragraphs.

### 1. 1889 Sanborn Map<sup>3</sup>

Telegraph Avenue near downtown Oakland was a mix of residential, commercial, and industrial properties when the first Sanborn Fire Insurance Company map was produced for the area in 1889. The corner of Telegraph Avenue and 22<sup>nd</sup> Street (project site) contained four single-family residences, three outbuildings, and a large vacant lot to the south. The rest of the 2100 block contained mostly residences and a few commercial businesses facing Broadway.

The block to the south (2000 block today) housed single-family residences facing Telegraph, 21<sup>st</sup> Street, and Broadway. The southwest corner of the block was vacant. The block to the north of the project site (2200 block today) was comprised mostly of single-family residences. A wood and coal yard was located at the southwest corner, and a few commercial properties faced Telegraph Avenue.

Surrounding blocks were predominantly residential. Notable exceptions are the blocks near the south end of Telegraph Avenue (between 17<sup>th</sup> and 18<sup>th</sup> Streets), which featured a small commercial enclave comprised of two plumbers, a carpenter, two lumberyards, a Chinese laundry, and a milk and cream depot. The German M.E. (Methodist Episcopal) Church was located on 17<sup>th</sup> Street between San Pablo Avenue and Telegraph Avenue. The large Oakland Brewery complex was at Telegraph Avenue and 19<sup>th</sup> Street. Farther west, the Roman Catholic Cathedral of Saint Francis de Sales, completed in 1893, filled the corner of Grove and 21<sup>st</sup> Streets (Grove Street no longer exists).

### 2. 1902 Sanborn Map

Between 1889 and 1902, when Oakland's second Sanborn Fire Insurance Company map was drawn, some street names had changed: New Broadway had become Broadway and 21<sup>st</sup> Street was named Hobart Street. Growth in the area continued, as some of the vacant lots were developed with residences and commercial buildings.

The 2100 block (subject block) was almost fully developed. Single-family residences still existed at the corner of Telegraph Avenue and 22<sup>nd</sup> Street (project site). To the immediate south, a large, two-story building with commercial storefronts and lodging on the second

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<sup>3</sup> Note: Sanborn maps showing the west side of Telegraph Avenue in 1889 are not available online.

floor had been constructed. On parcels facing 21<sup>st</sup> Street, single-family residences had been constructed. On the west side of the 2100 block, the buildings facing Telegraph Avenue were residential: a pair of two-story buildings at the corner of 22<sup>nd</sup> Street with two flats each and rounded bay windows; a single-family dwelling at the corner of 20<sup>th</sup> Street; and a mostly empty lot in between with a water tank and a windmill.

The west side of the 2200 block contained four single-family dwellings. The east side retained its 1889 configuration, but a large wood and coal yard with multiple buildings and structures had been constructed at the southwest corner.

The east side of the 2200 block remained mostly the same since 1889. The wood and coal yard at the southwest corner had been replaced by a two-flat residential building. At the west side of the block, the southern half of the parcels were vacant and the northern half contained a large, two-story building containing flats.

The composition of surrounding blocks continued to be a mix of predominantly residential with scattered commercial and industrial properties.

### **3. 1912 Sanborn Map**

The period between 1902 and 1912 saw significant changes to this area of Telegraph Avenue. While many of the properties survived the 1906 earthquake, some were either destroyed or replaced with new buildings. The most significant changes were related to infrastructure. The Southern Pacific Railroad laid rail tracks for its new electrical passenger lines, introduced in 1911, on 20<sup>th</sup> Street and Jones Street (now 22<sup>nd</sup> Street). These electrical lines were operated by a unit of Southern Pacific Railroad called the East Bay Electric Lines, which operated throughout the East Bay. Formerly the Oakland Cable Railway, Southern Pacific acquired the company in 1887. The Southern Pacific Electric lines ran to the Oakland 16<sup>th</sup> Street Station, completed in 1912, and the main Oakland station for the Southern Pacific East Bay Electric Lines. For many years it served as the terminus of the Transcontinental Railroad.

In 1902, the Key System introduced a new system of electric passenger lines and ferries. Between 1902 and 1912, one of those lines was laid on 22<sup>nd</sup> Street across Telegraph Avenue (the route that became West Grand Avenue). Half a block of buildings on the east side of Telegraph was demolished to create the terminus for that line. The line ended at a train shed that stretched from Valley Street west to Broadway. The Broadway side of the train shed featured an enormous, Tudor Revival complex called the Key Route Inn, which opened in 1907 and featured a Key System station, hotel, dining room, and a park. The rail line, however, continued, becoming the "B" transbay line upon the opening of the San Francisco–Oakland Bay Bridge railway. The rail line was replaced by the "B" bus route in April 1958, and was subsequently incorporated into the publicly owned AC Transit system.

At the corner of Telegraph Avenue and 22<sup>nd</sup> Street (project site), the three single-family residences that had stood there since at least 1889 were either destroyed or had been demolished. The large, two-story building with commercial storefronts and lodging on the second floor, which faced Telegraph Avenue, was extant. Businesses located in the building included a cabinet factory and upholstering company, Japanese laundry, and a plumber. In the middle of the block, the following buildings had been constructed: a single-family dwelling, a storefront, and a garage (all two stories) and a three-story, six-flat building, all facing 21<sup>st</sup> Street. On the Broadway side of the block, four single-family residences had been replaced by a three-story apartment building and a single-story commercial building. Added to the north side of the block, facing 22<sup>nd</sup> Street, were a two-story, two-flat residence, a plumber's shop, and the Guernsey Farm Creamery.

At the west side of the 2100 block, single-family homes had been replaced by the four-story Young Men's Christian Association (1909) at the corner of Telegraph Avenue and 21<sup>st</sup> Street and two buildings with flats facing Jones Street (now 22<sup>nd</sup> Street).

The east side of the 2000 block of Telegraph Avenue changed significantly between 1902 and 1912. The wood and coal yard at the southwest corner had been replaced by the Hotel Avalon, a three-story building with commercial storefronts on the ground floor and lodging units above. Single-family homes at the southeast corner (20<sup>th</sup> Street and Broadway) had been replaced with large commercial buildings (automobile garages and show rooms) and a single-family dwelling facing 20<sup>th</sup> Street. At the west side of the block, single-family homes—either destroyed by the 1906 earthquake or demolished—had been replaced by commercial storefronts and a single-family residence facing 20<sup>th</sup> Street.

At the west side of the 2200 block of Telegraph, at the corner of 21<sup>st</sup> Street, the First Baptist Church, designed by Julia Morgan, was constructed in 1903. At the east side of the block, a single-family residence at the center of the block facing Telegraph Avenue was demolished during construction of the Southern Pacific Railroad electric railway tracks, which terminated at a train shed at the east side of Valley Street. A few commercial buildings had been constructed and housed an upholstering shop, truss factory, and a plumber (all two stories).

#### **4. 1935 Sanborn Map**

This area of Telegraph Avenue and Broadway experienced significant change between 1912 and 1935. The most substantive change was the extension of West Grand Avenue on the former Key System route on 22<sup>nd</sup> Street to Broadway, resulting in the demolition of a half block of buildings between Valley and Broadway. The 2000-2200 blocks on the east side of Telegraph Avenue, especially parcels facing Broadway, changed from a partially residential composition to a mix of commercial, industrial, and entertainment properties.

The east side of the 2100 block (subject block) contained most of the buildings extant in 1912. The corner of Telegraph Avenue and 22<sup>nd</sup> Street (subject property) was vacant. A gas station had been built at the corner of Telegraph Avenue and 21<sup>st</sup> Street. The Hobart

Garage, stretching across the center of the block from 21<sup>st</sup> Street to north to 22<sup>nd</sup> Street housed 200 cars. The parcels facing Broadway featured the Sherman & Clay store at the southeast corner and stores and restaurant buildings filling the rest of the lots.

The west side of the 2100 block of Telegraph remained unchanged since 1912.

At the east side of the 2000 block of Telegraph, the only building remaining from 1912 was the Hotel Avalon at the southeast corner. The Paramount Theatre, constructed in 1930, filled most of the east side of the block. Smaller commercial buildings had been constructed on parcels facing 20<sup>th</sup> Street and Broadway. At the west side of the block, the single-family residences that existed in 1912 had been demolished. In their stead were vacant parcels on the south side and small commercial buildings at the corner of Telegraph Avenue and 21<sup>st</sup> Street.

At the east side of the 2200 block, the residences and commercial buildings that filled the Telegraph Avenue-facing parcels had been demolished and replaced by a gas station at the corner of Telegraph Avenue and West Grand Avenue. The west side of the 2200 block of Telegraph was largely unchanged since 1912 with the exception of a new storefront building the northeast corner.

#### **5. 1950 Sanborn Map**

Very little change occurred on these three blocks of Telegraph between 1935 and 1950. The east and west sides of the 2100 block (subject block) remained the same. At the 2000 block, the only change was the addition of a bus depot at the west side of the block (corner of Telegraph Avenue and 20<sup>th</sup> Street). At the 2200 block, five residences at the east side had been demolished. That side of the block remained vacant.

#### **6. 1970 Sanborn Map**

The 2000-2200 blocks of Telegraph Avenue saw extensive change in the period between 1950 and 1970. On the 2100 block (subject block), the Kwik Way drive-in restaurant had been constructed at 2150 Telegraph Avenue. It was surrounded by parking areas and a commercial building at the northeast corner. Everything else on the block had been demolished. At the west side of the 2100 block, two residences at the northeast corner had been demolished and replaced with a used-car sales lot with a small office at the west side of parcel.

At the west side of the 2000 block, the commercial building at the northeast corner had been demolished and replaced with a larger commercial building (2025 Telegraph Avenue). At the east side, the building at the corner of Telegraph Avenue and 21<sup>st</sup> Street had been demolished and replaced by a bus station at 2040 Telegraph. Commercial buildings at the southwest and northeast corners (adjacent to the Paramount Theatre) had been demolished. The commercial building at 2022 Telegraph Avenue was extant. The vacant parcels were used for parking.

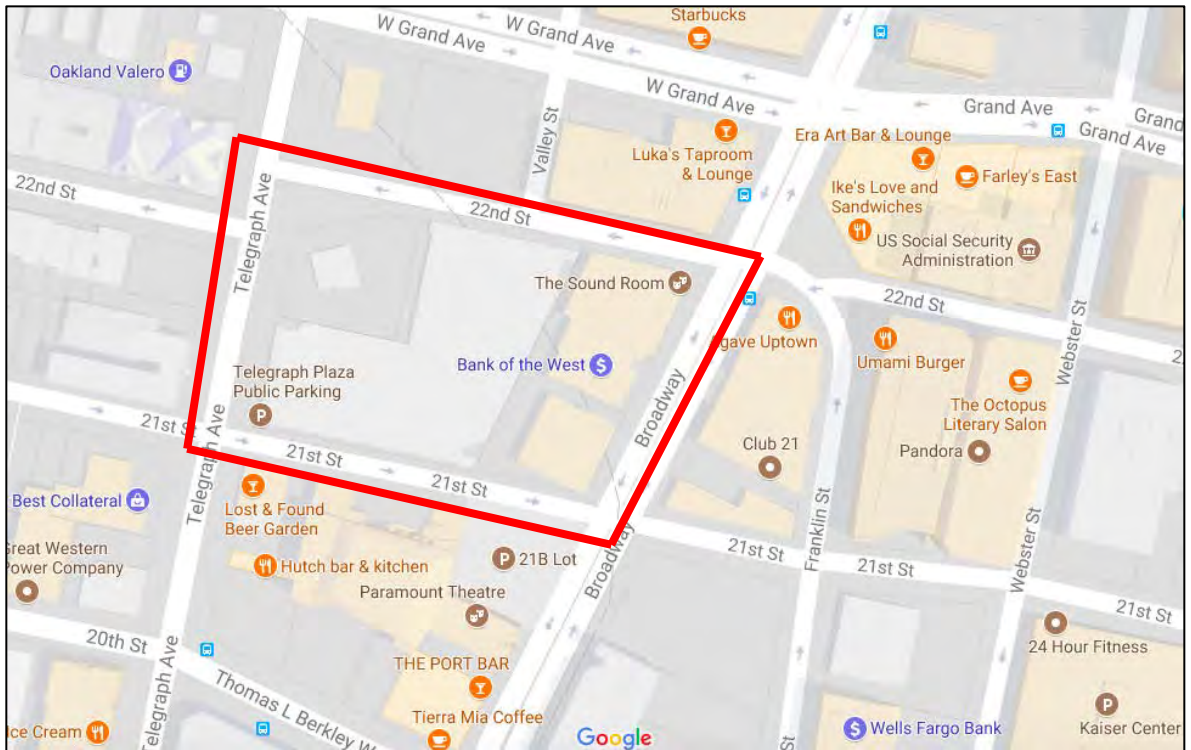
At the east side of the 2200 block, the gas station had been demolished and replaced with two single-story, corrugated-iron-sided structures. On the west side, the commercial buildings at the northeast corner had been demolished and replaced with a gas station at the corner of Telegraph Avenue and 22<sup>nd</sup> Street.



## V. EXISTING BUILDINGS ON PROPOSED PROJECT SITE

This section includes discussion of the existing buildings on the proposed project site including:

- Space Burger (formerly Kwik Way); 2150 Telegraph Avenue/495 22<sup>nd</sup> Street
- Bank Building Vacant (formerly Security Pacific National Bank); 2101-15 Broadway
- Bank of the West (formerly Sanwa Bank); 2121-27 Broadway
- Sound Room (formerly Sherman Clay Building); 2135-47 Broadway
- Parking Garage; 2100 Telegraph



*Map of project site (Source: Google Maps)*



**2150 Telegraph Avenue / 495 22<sup>nd</sup> St. (Kwik Way / Giant Burger)****Subject Parcel & Past Evaluation**

2150 Telegraph Avenue (also known as 495 22<sup>nd</sup> Street) is a small, restaurant building situated between 21<sup>st</sup> and 22<sup>nd</sup> Streets in Oakland's Uptown District, constructed in 1953. The Assessor's Parcel Number (APN) is 008064801103. The lot is 0.486 acres. The building is located within an CDB-P (Central Building District) zoning area.

The Oakland Cultural Heritage Survey (OCHS) has two different previous ratings on file for this property. First, on the Parcel Information Sheet on the City's website it is noted as a \*3, which means less than 45 years old when surveyed and not in an historic district. In 2003, the building had just turned 50 years old. The earlier survey rating was assigned before the building reached 50 years in age.

The Public Review Draft *Uptown Mixed Use Project EIR*, completed by LSA Associates in September 2003 (14 years ago), State Clearinghouse No. 200052070 noted that the OCHS rating was \*c3. However, even though the building had reached 50 years in age it was not re-evaluated during the Draft EIR process.

However, on November 17, 2003, Sara E. Palmer of LSA Associates completed a preliminary historic evaluation of the building at 2150 Telegraph Avenue. Palmer concluded:

Based on my review of the Kwik Way 2 building and the historic context for Googie architecture, it appears likely that the Kwik Way 2 building is eligible for listing on the California Register. It could also be considered a cultural resource by the City of Oakland.

The Kwik Way 2 features the angled front windows, sloped roof, and brightly colored decorative elements characteristic of Googie drive-ins. It retains good historical integrity and it appears that the building could be readily restored to its original condition.<sup>4</sup>

Today, the building is 64 years old which is considered sufficient time to have passed to obtain a scholarly perspective on the events or individuals associated with the resource for

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<sup>4</sup> LSA Associates, Inc. / Sara E. Palmer, "Preliminary Evaluation of Kwik Way 2/Giant Burger Stand, 495 22<sup>nd</sup> Street, Oakland, Alameda County, California, Forest City Project, LSA Project FCR230," November 17, 2003.

the California Register of Historical Resources. As such, architecture + history, llc evaluated the building in 2017 with the following findings.

### **Current Architectural Description**

The building at 2150 Telegraph Avenue is a 2,115 square-foot, one-story restaurant located on the southeastern corner of Telegraph Avenue and 22<sup>nd</sup> Street in Oakland. It is situated in the middle of an irregularly-shaped parcel and is surrounded by an asphalt-paved parking lot. The property is accessed via vehicular curb cuts off of both Telegraph Avenue and 22<sup>nd</sup> Street.

The building sits on a concrete, slab-on-grade foundation and has two sections: a public section at the north (front) where food is served; and the utility section at the south (rear), which contains a kitchen, storage, and bathroom.

The front section is dominated by a wall of angled windows—where customers order food—covered by a dramatic, cantilevered roof extending over the ordering area. The windows are set in aluminum frames, span the entire main façade, and wrap around the corners. Below the windows is a smooth, concrete base, angled away from the building and projecting slightly, creating a counter for the food-ordering area. The top of the counter is stainless steel. The interior of this section of the building is accessed by an aluminum and glass door at the west side.

The cantilevered roof is classic Googie style, with zig-zagging fascia and neon lights. Seven cubes set on poles rise from the roof (likely part of the original Kwik Way signage). The underside of the roof is lined with lights that illuminate the food-ordering area. The floor area underneath the roof canopy appears to be painted concrete or granite. The outdoor food-ordering area is delineated by bollards, which protect customers from the vehicular parking spaces encircling the building.

The rear section of the building is a high one-story, box-like in massing, and has a flat roof. The south wall is constructed of concrete masonry units. The east and west walls are faced with randomly laid fieldstone, which has been painted white. A boxy addition, shorter in height than the rest of the building, projects from the southeast corner of the south wall; its walls are concrete masonry units, and the roof is flat. This rear section of the building is accessed via doors at the south and east facades, as well as a door on the west wall of the addition. The interior was not accessed during the site visit.



*North and east façades, 2150 Telegraph Avenue. Source: Architecture + History, LLC, 2016.*



*West façade, 2150 Telegraph Avenue. Source: Architecture + History, LLC, 2016.*



*West and south façades, 2150 Telegraph Avenue. Source: Architecture + History, LLC, 2016.*



*North façade detail, 2150 Telegraph Avenue. Source: Architecture + History, LLC, 2016.*

### Site History

In the late 1880s, the corner of Telegraph Avenue and 22<sup>nd</sup> Street (subject site) contained four single-family residences, three outbuildings, and a large vacant lot to the south.<sup>5</sup> Those buildings still existed on the site in 1902, as well as (to the immediate south) a large, two-story commercial building with lodging upstairs and a two-story residential apartment building (flats), which existed on the site through the mid-1930s. Businesses located in the commercial building over the years included a furniture factory; Japanese laundry; upholstery, plumbing, painting, and carpentry companies; an auctioneer; and a business providing car batteries. By 1912, the single-family residences at the corner of Telegraph and 22<sup>nd</sup>, had been either destroyed during the 1906 earthquake or demolished. The commercial building was demolished sometime between 1939 and 1946.<sup>6</sup> The residential apartment building was demolished in 1946.<sup>7</sup> The subject site was used for parking from 1946 until 1953.

In October 1953, Herman Lehman and Joseph Mahoney applied for a permit to build a restaurant on the corner of Telegraph Avenue and 22<sup>nd</sup> Street.<sup>8</sup> The builder was James A. Hutzler of Oakland (the architect is unknown). Restaurant fixtures and equipment were supplied by East Bay Restaurant Supply Co. of Oakland, Carbonic Machines of San Francisco, and Red Top Electric of Emeryville. The estimated cost was \$20,000. The final permit was issued on November 23, 1953. Known as Kwik Way #2 (or Kwik Way Shops), the building was completed in December 1953.

Kwik Way #2 operated at 2150 Telegraph Avenue from 1953<sup>9</sup> through circa 1996.<sup>10</sup> Beginning circa 2000, the Giant Burgers chain took over the restaurant. Giant Burgers remained at 2150 Telegraph Avenue through December 2014.<sup>11</sup> Space Burgers took over the space in February 2015.

The building at 2150 Telegraph Avenue appears to have not been significantly altered since its construction in 1953. Permitted alterations include the following:

- In 1959, copy on the original signage was changed to read, “Chicken, [illegible], Malts.”

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<sup>5</sup> The site history was developed using Sanborn Fire Insurance Company maps from 1889, 1902, 1912, 1935, 1950, and 1970.

<sup>6</sup> Essel Environmental Consulting, *Phase I Environmental Site Assessment, 495 22<sup>nd</sup> Street, Oakland, CA*, June 30, 2015, page iv.

<sup>7</sup> Essel Environmental Consulting, *Phase I Environmental Site Assessment, 495 22<sup>nd</sup> Street, Oakland, CA*, June 30, 2015, page iv.

<sup>8</sup> Building permit #B49596, October 5, 1953, Oakland Cultural Heritage Survey files.

<sup>9</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953.

<sup>10</sup> Essel Environmental Consulting, *Phase I Environmental Site Assessment, 495 22<sup>nd</sup> Street, Oakland, CA*, June 30, 2015.

<sup>11</sup> Ethan Fletcher, “Space Burger Launches in Uptown Oakland,” *San Francisco Chronicle*, February 24, 2015.



- In 1963, toilet and storage rooms were added (permit #C11665).
- In 1985, a drive-up window was proposed (permit #037676).
- In 1998, the restaurant was remodeled and the sign face was changed.<sup>12</sup>

### Owner / Occupant History

#### *Kwik Way*

Kwik Way was a fast-food, drive-in restaurant chain introduced by Lehman and Mahoney in Oakland circa 1953. The first Kwik Way opened at 6215 E. 14<sup>th</sup> Street/International Boulevard (unknown condition) circa 1953.<sup>13</sup> The Kwik Way at 2150 Telegraph Avenue was followed by a third Kwik Way at 500 Lake Park Avenue in 1956 (extant but proposed for demolition).<sup>14</sup> The Kwik Way chain called itself the “first 19-cent self-service drive-in” in Northern California, proclaiming, “Copied by many—equaled by none.”<sup>15</sup> It proudly advertised its use of locally sourced ingredients, including beef from Piedmont Market, chicken from Parenti Poultry Co., and “custom-made, oven-fresh buns” made by Athens Baking Co.<sup>16</sup> Standard Kwik Way menu items were burgers, various chicken dishes, BBQ sandwiches, fries made from “Idaho spuds,” and “thick and creamy” malts.<sup>17</sup> In the late 1950s, the Kwik Way chain sponsored a boys’ little league team in the Babe Ruth Winter League.<sup>18</sup>

Kwik Way #2 at 2150 Telegraph Avenue held its grand opening on December 16, 1953.<sup>19</sup> An advertisement in the *Oakland Tribune* announcing the opening reads:

The welcome mat is out. Kwik Way, New Self-Service Drive-In, 2150 Telegraph – 1 block North of Capwell’s. 5-second service! A quick, good lunch for 30 cents. Walk in, drive in, eat here, take ‘em out. Open 10:00 A.M. to 2:00 A.M.<sup>20</sup>

The opening day specials were five hamburgers for 50 cents and two half chickens for \$1.00.

Kwik Way celebrated its one-year anniversary on May 1, 1954, announcing the party in the *Oakland Tribune*:

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<sup>12</sup> Essel Environmental Consulting, *Phase I Environmental Site Assessment, 495 22<sup>nd</sup> Street, Oakland, CA*, June 30, 2015: 27.

<sup>13</sup> Need source. From Wikipedia.

<sup>14</sup> Building permit #55342, May 3, 1955, Oakland Cultural Heritage Survey files.

<sup>15</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953; Kwik Way advertisement, *Oakland Tribune*, May 1, 1954.

<sup>16</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953.

<sup>17</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953.

<sup>18</sup> “Kwik-Way to Hold Ruth Loop Tryouts,” *Oakland Tribune*, August 23, 1957.

<sup>19</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953.

<sup>20</sup> Kwik Way advertisement, *Oakland Tribune*, December 15, 1953.

Welcome! Welcome! Welcome! Yup, we made it! Kwik-Way 1<sup>st</sup> Anniversary. Saturday, May 1<sup>st</sup>. Northern California's first 19-cent self-service drive-in. Circus clowns, prizes, novelties. E. 14<sup>th</sup> at 63<sup>rd</sup> Ave. near Seminary (also at Telegraph & 22<sup>nd</sup>). 19-cent hamburgers, 49-cent fish 'n' fries, 69-cent fried chicken.<sup>21</sup>

Kwik Way #2 operated at 2150 Telegraph Avenue through at least 1969 under the management of Lehman and Mahoney.<sup>22</sup> The restaurant at 2150 Telegraph Avenue retained the Kwik Way name through circa 1996.<sup>23</sup> Kwik Way #2 was included in a review of "low-brow" restaurants in Oakland in 1984, written by Gerald Nauchman in the *Oakland Tribune*: "As an Oaklander bred and born, my roots go deep at Kwik Way Drive-In—a primitive McDonald's, a '50s pioneer in the see-through patty, the non-milk shake, the ice-floe Coke and twice-fried fries."<sup>24</sup>

### Other Occupants

Beginning circa 2000, the Giant Burgers' chain took over the restaurant. Giant Burger remained at 2150 Telegraph Avenue through December 2014.<sup>25</sup> Space Burger took over operation of the restaurant in February 2015.

### Architect / Builder

#### *Architect*

Building permits for 2150 Telegraph Avenue do not identify an architect for 2150 Telegraph Avenue. However, James A. Hutzler was identified as the builder.

#### *Builder*

James A. Hutzler was born in Reno, Nevada on June 19, 1918, to Ernest and Loretta (Bullock) Hutzler.<sup>26</sup> After serving in the Navy during World War II, on the USS Massachusetts, Hutzler moved to the San Francisco Bay Area, where he owned and operated the Hutzler Construction Company. After 30 years in the Bay Area, Hutzler and his wife, Ora, moved to the Reno-Sparks area. While there, he owned the J&O Ranch and the Silver Appaloosa Ranch in the Smith Valley and Wellington areas. Hutzler was active in Masonics and was a member of the USS Massachusetts Association and the Disabled American Veterans. He died on January 16, 1999 in Reno.

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<sup>21</sup> Kwik Way advertisement, *Oakland Tribune*, April 21, 1954.

<sup>22</sup> R.L. Polk and Co., *Polk's Oakland City Directory*, online at SFPL.com.

<sup>23</sup> Essel Environmental Consulting, *Phase I Environmental Site Assessment, 495 22<sup>nd</sup> Street, Oakland, CA*, June 30, 2015.

<sup>24</sup> Gerald Nachman, "There Is No Quiche There," *Oakland Tribune / This World*, April 22, 1984: 13-15.

<sup>25</sup> Ethan Fletcher, "Space Burger Launches in Uptown Oakland," *San Francisco Chronicle*, February 24, 2015.

<sup>26</sup> *Reno Gazette-Journal*, January 20, 1999, online at Newspapers.com.

### **Building Type and Style - Drive-in Restaurant and Googie Style**

Architectural historians generally agree that one of the nation's first drive-in restaurants was Sunbelt's Pig Stand, built on a highway between Dallas and Fort Worth, Texas in 1921.<sup>27</sup> At the Pig Stand, customers "would pull in to the parking lot and be immediately greeted by carhops, combination waiter-busboys, who served burgers and fries on trays that clipped on to the car's window."<sup>28</sup> The Pig Stand was quickly followed by other drive-ins throughout the country. One of the earliest drive-ins in California was Montgomery's Country Inn (later called the Tam o' Shanter Inn) on Los Feliz Boulevard in Los Angeles. By the early 1930s, drive-ins could be found throughout California. Perhaps the strongest indicator of the drive-in's popularity, the February 1940 issue of *Life* magazine featured a carhop on its cover.<sup>29</sup> The March 1940 issue of *Westways* included an article on drive-ins, referring to them as America's "belles of the boulevards."

The drive-in restaurant, along with other automobile-oriented building types, such as the motel, was a byproduct of the increasing popularity of automobile travel and, later, suburbanization. "Drive-in architecture grew up to feed, service, and entertain the newly mobile public as they went about their lives on the far-flung streets and boulevards," writes historian Alan Hess.<sup>30</sup> They were fast and efficient for travelers, as they allowed patrons to be served in their cars. They were popular with restaurant owners, as well, because they required fewer employees, which meant higher profit margins.<sup>31</sup> As competition between drive-ins picked up, restaurants fought to stay ahead by providing faster service, resulting in gimmicks such as rollerskating carhops.

The first drive-ins presented a wild variety of designs as they tried to lure passersby. "In the beginning there were no design rules, and ... the streets sprouted strange architectural anomalies. Spanish revival missions sat catty-corner from colonial mansions, and it was not uncommon to pull up to a 30-foot stucco pig and be served a hot dog from its 6-foot snout."<sup>32</sup> By the 1930s, drive-ins began to adopt common design features, such as octagonal or circular forms, large rooftop signs, and siting in the middle of a corner lots, which "allowed more cars to park close to the building, making service easier and

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<sup>27</sup> Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco: Chronicle Books, 2004)

<sup>28</sup> Nate Barksdale, "Fries With That? A Brief History of Drive-Thru Dining," *History.com*, May 16, 2014, <http://www.history.com/news/hungry-history/fries-with-that-a-brief-history-of-drive-thru-dining>, accessed June 30, 2016.

<sup>29</sup> Jim Heimann, "Drive-Up Deluxe: In Memory of a Passing California Fancy," *California Magazine*, May 1983: 103-106.

<sup>30</sup> Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco: Chronicle Books, 2004)

<sup>31</sup> Nate Barksdale, "Fries With That? A Brief History of Drive-Thru Dining," *History.com*, May 16, 2014, <http://www.history.com/news/hungry-history/fries-with-that-a-brief-history-of-drive-thru-dining>, accessed June 30, 2016.

<sup>32</sup> Jim Heimann, "Drive-Up Deluxe: In Memory of a Passing California Fancy," *California Magazine*, May 1983: 103-106.



attracting more customers.”<sup>33</sup> Drive-ins of the 1930s, according to Alan Hess, “were arguably the most radically Modern buildings ever constructed in the United States. No other buildings were shaped so effectively by technology—by the automobile. No Modern building unified function, advertising, and urban presence more effectively.”<sup>34</sup>

The practice of combining building design with advertising took off in the 1940s and 1950s. Architects of drive-in restaurants “recognized that, for a commercial building, advertising is a legitimate function to be expressed in architectural form. To make a relatively small building visible to customers from far down the street, the entire building was conceived as a sign to attract customers.”<sup>35</sup> The result was revolutionary, a panoply of hyper-modern, whimsical, eye-catching buildings that “fit the needs of the new California ‘car culture’ and the dreams of the even newer space age.”<sup>36</sup> Popular design elements were bold angles, colorful neon signs, plate-glass windows, stainless steel, sweeping cantilevered roofs, and pop-culture imagery. The style became known as Googie, a term coined in 1949 by *House and Home* magazine editor Douglas Haskell to describe the design of Los Angeles coffee shop Googies, designed by California Modernist John Lautner.<sup>37</sup> Writing about Googie-style buildings, Alan Hess says that they were evocative of California’s “prosperity and its distinctive lifestyle...made widely available to the average citizen. [They] brought a sense of California as a place where the future had already arrived, and was available to everyone as they went about their daily lives.”<sup>38</sup> One of the “finest examples of Googie in Oakland,” according to Hess, is Biff’s/JJ’s at 27<sup>th</sup> Street and Broadway, designed by Googie specialists Armét & Davis (Louis Armét and Eldon Davis), and completed in 1963. JJ’s round design—symbolic of the 1950 and 60s fascination with the automobile and space travel—is a version of Googie called Coffee Shop Modern, established by Armet and Davis.<sup>39</sup>

Drive-in restaurants began to wane in popularity by the end of the 1950s, replaced in part by the drive-thru fast food restaurant model. Introduced by the In-N-Out chain in Southern California in 1948, drive-thrus proved even more fast and efficient than drive-ins, allowing motorists to order food from a drive in window, take their food to go, eating it on the

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<sup>33</sup> Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco: Chronicle Books, 2004).

<sup>34</sup> Ibid.

<sup>35</sup> Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco: Chronicle Books, 2004)

<sup>36</sup> Alan Hess, “Broadway Valdez District Specific Plan – Biff’s Coffee Shop,” October 13, 2013, Letter to the Oakland Landmarks Preservation Board, filed with the Oakland Cultural Heritage Survey.

<sup>37</sup> Alan Hess, *Googie Redux: Ultramodern Roadside Architecture* (San Francisco: Chronicle Books, 2004) 66-68.

<sup>38</sup> Alan Hess, “Broadway Valdez District Specific Plan – Biff’s Coffee Shop,” October 13, 2013, Letter to the Oakland Landmarks Preservation Board, filed with the Oakland Cultural Heritage Survey.

<sup>39</sup> Allyson Quibell, “It’s Got Style: Googie by the Bay,” *Oakland Heritage Alliance News* Vol. 24, No. 2 (Summer 2004).

go.<sup>40</sup> Drive-ins all but disappeared in the 1960s when fast-food franchises and coffee shops took over as the most successful drive-in restaurant models.<sup>41</sup>

### **Known Drive-In Restaurants in Oakland**

The Oakland Cultural Heritage Survey maintains a file on historic drive-ins, coffee houses, and diners in Oakland. According to the list of sites in the file, Kasper's at 4521 Telegraph Avenue (extant), was one of the first drive-in restaurants in Oakland. It opened in 1943. The following is a sampling of other drive-in, coffee-shop, or diner restaurants (excluding Kwik Ways mentioned in previous sections) that followed and are currently extant:

- Klik's/King Drive-In, 801 East 12th Street (extant), opened circa 1945-46 (possibly owned by Lillian Klik)
- Dave's Coffee Shop, 4297-99 Broadway (extant), opened circa 1950
- Casper's, 1240 1st Avenue (extant), opened circa 1950
- Nikko's, 340 23rd Avenue (extant), opened 1952
- Sea Wolf/Scott's, 2 Broadway at Jack London Square (extant), opened circa 1952-54
- Mel's Diner, 1701 San Pablo Avenue (extant), opened circa 1953-54
- Coliseum Drive-In, 5401 Coliseum Way, opened 1964
- Hambrick's Giant Burger, 3625 E. 14th Street (extant), opened circa 1965
- Loard's, 2825 MacArthur Boulevard (extant), opening date unknown
- Hambrick's Giant Burgers, 5325 San Pablo Avenue, opening date unknown
- Giant Burger, 4215 MacArthur Boulevard, opening date unknown<sup>42</sup>

### **California Register of Historical Resources Evaluation**

#### *California Register Criterion 1: Event or Patterns of Events*

Based on historical research, the building at 2150 Telegraph Avenue in Oakland, California does not qualify individually under California Register Criterion 1: Event/Patterns of Events, for either its association with the development of downtown Oakland or with the growing interest in and expansion of Fast Food Restaurants during the post-World War II era. While these are certainly historical contexts or events that could be linked to this building, the significance of this building is much more closely aligned with the development of the Googie style of architecture within the restaurant industry in California and Oakland, of which this is an outstanding example. The building does not possess an association with an important event that rises to a level of significance that would justify individual eligibility for the California Register.

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<sup>40</sup> Nate Barksdale, "Fries With That? A Brief History of Drive-Thru Dining," History.com, May 16, 2014, <http://www.history.com/news/hungry-history/fries-with-that-a-brief-history-of-drive-thru-dining>, accessed June 30, 2016.

<sup>41</sup> Jim Heimann, "Drive-Up Deluxe: In Memory of a Passing California Fancy," *California Magazine* (May 1983): 103-106.

<sup>42</sup> OCHS file on drive-ins, coffee houses, and diners in Oakland.

*California Register Criterion 2: Important Person(s)*

Based on historical research the building at 2150 Telegraph Avenue is not associated with any individuals who have had an important role in local, California or national history. There does not appear to be a link between the owners or builders of this building and any significant historical events relating to Oakland history. The building does not appear to qualify under California Register Criterion 2: Important Person(s).

*California Register Criterion 3: Design/Construction/Architecture*

The Googie-style restaurant at 2150 Telegraph Avenue, historically known as the Kwik Way #2, appears to be individually eligible for the California Register of Historical Resources under Criterion 3: architecture. It is an excellent example of a building type, a diner / drive-in restaurant, and a style of architecture, Googie architecture. The building is associated with the expanded interest in quick service food that resulted in the development of a specific building type. It was one of several, small-scale restaurants developed under the Kwik Way brand in the east bay. The building possesses significance within the context of mid-twentieth century architecture and design as an example of the Googie style. The building conveys this significance through its intact building elements with a high level of integrity of location, design, materials, workmanship, feeling, association. The integrity of setting has changed somewhat over time as surrounding, older buildings have been replaced with more recent construction. However, the building retains angled corner orientation and there are still a large number of historic structures in the immediate vicinity which add to the overall setting.

### **2115 and 2127 Broadway and Banking Related Buildings in Uptown Oakland**

There are two branch bank buildings dating to the mid-1970s on the project site. First, the Security Pacific National Bank, designed by William L. Pereira Associates in 1974 at 2115 Broadway. Second, the Sanwa Bank designed by Shigenori Iyama in 1975 at 2127 Broadway. Some contextual information on the development of the Modern branch bank, as well as bank expansion in this area of Oakland is provided first, and then each building is discussed and evaluated in detail. Lastly, a discussion of the cluster of bank buildings is provided.

After World War II, American commercial architecture departed from past expressions in scale, style, and building types. This is true of branch bank buildings which no longer employed Classical motifs or a temple front. Banking design shifted to box forms with minimal decoration in a Modern expression. To convey a Modern aesthetic and new financial services, banks often turned to local or regional architects who had embraced Modernism to build new, more suburban in character structures. This is reflected in California in a series of bank headquarters and branches by Modernism's significant California architects and firms including: John Carl Warnecke, William Pereira, William Wurster (Wurster Bernardini Emmons), Paul Revere Williams, Edward Durell Stone, Anchen & Allen, Skidmore, Owings & Merrill, Welton Becket Associates, and others. The Modern branch bank included large expanses of glass, a sleek interior with shiny materials, drive-up and walk-up banking, parking (even in more urban settings), and large areas, usually of the grand-scale lobby, set aside for customers to meet individually with financial advisors.<sup>43</sup>

In Oakland, this transition in branch bank design also coincided with the development of BART. Envisioned and designed in the 1950s, construction on the BART system began in 1964, with the official first days of service occurring in September 1972 with the east bay service complete. The Transbay Tube went into full service in 1974. Two downtown BART stations were developed: one at 12<sup>th</sup> Street which became known as "City Center," and one servicing 19<sup>th</sup> and Broadway.<sup>44</sup> In the vicinity of the 19<sup>th</sup> Street BART station along both Broadway and Webster, at least thirteen bank-related buildings were constructed between 1960 and 1975. The last two structures constructed were the two branch banks on the project site at 2115 and 2127 Broadway.<sup>45</sup>

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<sup>43</sup> Mary Brown. *San Francisco Modern Architecture and Landscape Design, Historic Context Statement, 1935-1970*, San Francisco Planning Department, 2010 (section on modern banks); and Carol Dyson and Anthony Rubano, "Banking on the Future: Modernism and the Local Bank." *Preserving the Recent Past*, ed. by Deborah Slayton and William G. Foulks, National Park Service. Washington, D. C., 2000.

<sup>44</sup> Bay Area Rapid Transit (BART) history on the BART website at [www.bart.gov/about/history](http://www.bart.gov/about/history).

<sup>45</sup> OCHS files and building permit research by Betty Marvin; various *Oakland Tribune* articles and photographs; Oakland Public Library. Oakland History Room Clippings File on Oakland Banks.



*From the Oakland Tribune April 28, 1961 the Central Valley National Bank. Source: OPL clipping file.*



*The Wells Fargo Bank pictured in the Oakland Tribune May 25, 1965 (Source: OPL clipping file).*



*Security Savings 1969 Oakland Tribune (Source: OPL Clipping File).*

**Banks developed along Broadway and Webster Streets in Oakland**

| Name                           | Address                     | Permit Year | Year Open | Permit Info, Etc.  | Architect                     | Notes                              |
|--------------------------------|-----------------------------|-------------|-----------|--|-------------------------------|------------------------------------|
| Central Valley Bank            | 301 20th St                 | 1960        | 1961      | Planning Commission resolution plans submitted by Becket             | Welton Becket & Associates    | Demolished <sup>a</sup>            |
| Sumitomo Bank                  | 400 20th St / 2001 Franklin | 1964        | 1966      | C16715   | Shigenori Iyama               | Somewhat altered                   |
| Wells Fargo Bank               | 415 20th St                 | 1964        | 1965      | C19803   | John Carl Warnecke            | Significantly Altered <sup>a</sup> |
| First Security / National      | 2044 Franklin St            | 1965        | 1966      | C22497, a cross-reference page refers to Lyman Jee, architect        | Lyman Jee                     | Extant                             |
| Security Savings & Loan        | 2250 Broadway               | 1967        | 1969      | C37772   | Norton S. Curtis              | Extant                             |
| Bank of California             | 1970 Franklin St            | c. 1967     | 1968      | permit not found   |                               | Extant                             |
| Bank of America                | 21 <sup>st</sup> & Broadway | ?           | 1967      | ?  | ?                             | Demolished <sup>a</sup>            |
| Guaranty Savings               | 2000-20 Franklin St         | c. 1967     | 1968      | Permit illegible, correspondence refers to "Robert Goetz, architect" |                               | Extant                             |
| First Savings                  | 350-60 20th St              | c. 1968     | 1968      | address assigned 1960, permit not found                              |                               | Extant                             |
| United California Bank         | 2040 Franklin St            | c. 1968     | 1968      | permit not found   |                               | Interior alterations               |
| Bank of Tokyo                  | 1740-50 Broadway            | 1972        | 1975      | C64797   | Van Bourg & Nakamura          | Extant                             |
| Security Pacific National Bank | 2115 Broadway               | 1974        | 1975      | C80714, drawings from Pereira's office                               | William L. Pereira Associates | Extant                             |
| Sanwa Bank                     | 2127 Broadway               | 1975        | 1975      | C86187   | Shigenori Iyama               | Extant                             |

<sup>a</sup> Buildings significantly altered or demolished.





***Oakland Tribune, 1968.***

The above aerial photograph marking the numerous bank-related buildings in downtown Oakland taken from the Kaiser Center in 1968 shows that cluster of businesses that emerged in the 1960s around the 19<sup>th</sup> Street BART station. On the following page a map depicts the locations of all thirteen of the banking buildings and if they remain standing or not.





**Map showing locations of existing bank-related buildings in Uptown Oakland (Source: Preservation Architecture, 2017).**

### 2101-2115 Broadway – Former Security Pacific National Bank



*A view of the 21<sup>th</sup> Street side of the building.*

#### **Subject Parcel & Past Evaluation**

This building sits at the corner of Broadway and 21<sup>st</sup> Street in downtown Oakland on APN 008-648-18. The current OCHS Rating is \*3 (less than 45 years old or modernized at the time of the survey). The building is not located within an identified historic district or an Area of Primary Importance (API). No extensive survey of Modern Buildings has been undertaken in downtown Oakland, nor has an historic context statement for Modern Architecture in Oakland been completed. Project drawings on file with the City of Oakland related to building permit # C80714 were completed by William L. Pereira Associates. These drawings were photographed in the office of the OCHS, but they have not yet been formally copied or scanned pending any permission that may be required.

William Pereira is a known master architect with an extensive body of work. There is a monograph on Pereira, edited by James Steele, that includes what Steele identifies as a somewhat incomplete list of projects, based on a log book of projects maintained by Pereira's office. At this time, based on research completed, it does not appear that Pereira completed any other buildings in Oakland. William L. Pereira Associates designed a number of buildings the Bay Area, including the Transamerica Building, the Crocker Bank Building, and a tower addition to the St. Francis Hotel in San Francisco; a California State Building in Sacramento; and a research institute near Stanford University. Additionally, beginning in 1951 with an early partner Charles Luckman, then through the 1970s as William L. Pereira Associates, Pereira designed over 25 identified banking related

buildings, including branch banks and banking headquarter towers. Many of these examples were in Southern California, where a large collection of Pereira's work remains extant, but he also designed banking related buildings in Phoenix, Denver, Salt Lake City and New York. Two prominent examples of his branch bank buildings are the Farmers and Stockmen's Bank (1951) in Phoenix, with Luckman and the Gibraltar Savings Bank in southern California. Both of these buildings are pictured in Steele's monograph.

Pereira also completed a tower for Security Pacific National Bank in downtown Los Angeles, at 800 W. 6<sup>th</sup> Street, which has been renamed the Pacific Financial Center. From a review of the project list in Steele's monograph it is clear that Pereira often built multiple projects for clients in various locations. For instance, both branch banks and a headquarters for the Crocker Citizen's National Bank and multiple buildings for Prudential Insurance.

### **Current Architectural Description**

The Security Pacific National Bank branch at 2101-15 Broadway was completed in 1975. A corner building, the structure is two stories in height, and rectangular in plan with a flat roof. The Broadway and 21<sup>st</sup> Street elevations are extensively glazed with large expanses of dark-colored glass. The second story is cantilevered over the first floor and appears to float above the lower story. The exterior walls are a combination of marble, aluminum, and glass. There is a cube-shaped inset, two-story component at the eastern end of the building this is sheathed in white marble forming a stark contrast to the dark glazing. The first-floor lobby is a double-height space. A landscaped area along the 21<sup>st</sup> Street side of the building leads to a projecting elevator tower also clad in white marble. At the Broadway elevation the sidewalk and a handicap access ramp continue to the building face. Additionally, at the Broadway side there is a door to the banking lobby and a door to the upper story offices. An ATM machine is centered on the lower portion of the Broadway elevation. There is a landscaped passage way between this structure and the adjacent 2121-27 Broadway.

### **History of Building**

The *Oakland Tribune* announced in February 1973 that Security Pacific National Bank had hired preeminent Modernist architect William Pereira to design the building at the corner of Broadway and 21<sup>st</sup> Street.<sup>46</sup> This is confirmed by the building plans located in the City of Oakland archives clearly from the office of William L. Pereira Associates. The building permit lists the architect as ORS Corporation from Los Angeles and the builder as E.W. Hahn Construction Co. of Hayward.<sup>47</sup> ORS Corporation, appears to have specialized in banking fixtures, such as automated teller machines.<sup>48</sup> Security Pacific National Bank was

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<sup>46</sup> "Security Pacific Plans New Oakland Headquarters," *Oakland Tribune*, February 1, 1973: F11.

<sup>47</sup> City of Oakland Building Permit Number C807142, May 13, 1974,

<sup>48</sup> Shayne Watson. Conversation with Betty Marvin. OCHS. July 6, 2016; OCHS file on ORS Patents on Automatic Teller Machines.

formed in Southern California and by the middle of the twentieth century it was a well-respected large west coast banking institution. In 1992, Security Pacific merged with Bank of America.

### **Architect / Designer**

Born in Chicago in 1909, William Leonard Pereira began working as a draftsman at a young age and soon became an architect's assistant, also supporting himself as a painter.<sup>49</sup> He graduated from the University of Illinois School of Architecture in 1931. After graduation, Pereira was employed by the well-known Chicago firm of Holabird and Root, where he contributed to the master plan of the 1933 Chicago World's Fair.

He began a partnership with his brother Hal, Pereira and Pereira, together focusing on movie theater design throughout the U.S. At the height of the Depression, in 1938, William Pereira moved to Los Angeles, and became a production designer for Paramount and RKO.

After World War II, Pereira taught at the University of Southern California School of Architecture. In 1950, he formed a partnership with Charles Luckman, the former president of Lever Brothers and fellow Illinois native. This partnership was somewhat short-lived (1951-58) and Pereira then formed William L. Pereira Associates in 1959. The firm created some of Los Angeles' most significant architectural landmarks, including the master plan and an iconic building, the Theme Building, at the Los Angeles International Airport. At one time, the firm employed four hundred people. Known for its projects at airports throughout the world, in campus and university settings and for major American corporations, including financial, insurance and large corporations like IBM.

The Los Angeles Conservancy notes of Pereira's practice, "the firm had its hand in designing everything from amusement parks to research facilities. Pereira and Associates not only gained national recognition for its buildings, but also for the many master plans produced by the firm, making Pereira a leading figure of master planning, so much so that it landed him on the cover of *Time* magazine in 1963."<sup>50</sup>

Pereira died in 1985 at age 76; his most recognized buildings include: the Los Angeles Metropolitan Water District complex (1963); the Los Angeles County Museum of Art (Mid-Wilshire, 1965); the Geisel Library at the University of California, San Diego (1970); San Francisco's Transamerica Pyramid (1972); and multiple works and master planning at the

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<sup>49</sup> Biographical information compiled from James Steele, ed. *William Pereira*. Los Angeles: Architecture Guild Press, 2002 "William L. Pereira, Architect; a Specialist in Planned Cities." *New York Times*. Obituary November 15, 1985; "Pereira Gave County Shape – and a Vision: Late Architect Believed in Orderly Growth, Open Spaces." *Los Angeles Times*. Obituary November 17, 1985;; Pacific Coast Architecture Database, <http://pcad.lib.washington.edu>.

<sup>50</sup> Los Angeles Conservancy website. <https://www.laconservancy.org/architects/william-l-pereira-associates>.

Los Angeles International Airport, the University of Southern California (USC) and the University of California, Irvine.<sup>51</sup>

Throughout his career Pereira was engaged in projects on college and university campuses, at airports and for the aviation industry, for corporate campuses and towers, civic centers, hotels, libraries, department stores, theaters and entertainment facilities, and many west coast banks. His bank buildings are found around Los Angeles, in Salt Lake City, Utah, and even one in Butte, Montana.

### **California Register of Historical Resources Evaluation**

#### *California Register Criterion 1: Event or Patterns of Events*

Based on historical research, the building at 2101-2115 Broadway in downtown Oakland, California does not qualify *individually* under California Register Criterion 1: Event/Patterns of Events, for its association with the development of Uptown Oakland's financial and banking industry or with the BART development. The building does not possess an association with an important event that rises to a level of significance that would justify *individual* eligibility for the California Register. The building is one of a number of banking related structures that were built in Uptown between the mid-1960s and the mid-1970s. See discussion below related to this cluster of banking buildings.

#### *California Register Criterion 2: Important Person(s)*

Based on historical research, the building at 2101-2115 Broadway is not associated with any persons or individuals who have had an important role in local, California or national history. There does not appear to be a link between the owners or designers of this building and any significant historical events relating to Oakland history. The building does not appear to qualify *individually* under California Register Criterion 2: Important Person(s).

#### *California Register Criterion 3: Design/Construction/Architecture*

The former Security Pacific National Bank branch at 2101 Broadway does not appear to *individually* meet Criterion 3 of the California Register of Historical Resources as an exceptional example of corporate Mid-Century Modernism in Oakland. The work of William Pereira has been highly documented and given the length of his career, enough time has passed to understand his significant contributions to American and Modern Architecture. Clearly designed in a Modern idiom, with Modern materials, the building was intended to convey the importance of the Modern bank within an urban setting. However, after review of Pereira's banking work over the course of his career, and the other banking-related structures in this area of Oakland, this building does not stand out *individually* as an exceptional or outstanding design within Pereira's body of work or within the building type as exemplified in Oakland. Additionally, the building falls outside of the period of significance for Pereira's well-known work as it was built in 1975.

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<sup>51</sup> James Steele. *Pereira*; and both the NYT and LAT obituaries on Pereira.



### 2121-2127 Broadway – Former Sanwa Bank



#### **Subject Parcel and Past Evaluations**

This building faces Broadway between 21<sup>st</sup> and 22<sup>nd</sup> in downtown Oakland on APN # 008-648-17. The OCHS Rating is \*3 (less than 45 years old or modernized). The building is not located within a historic district or an API. No extensive survey of Modern Buildings has been undertaken in downtown Oakland, nor has an historic context statement for Modern Architecture in Oakland been completed.

#### **Current Architectural Description**

The building at 2121-27 Broadway is two stories in height, rectangular in plan and has a flat roof. The exterior walls are concrete. The mid-block structure has punched openings at the Broadway facade that form a covered outdoor area and a glazed lobby. The overall character of the structure is somewhat Brutalist in its expression.

#### **History of Building**

The Sanwa Bank building at 2121-27 Broadway was completed circa 1975, and was designed by architect Shigenori Iyama of S. Iyama & Associates.<sup>52</sup> The Sanwa Bank was a major Japanese bank with branches in California. It operated from 1933 to 2002 when it merged with another Japanese banking institution.

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<sup>52</sup> City of Oakland Building Permit Number C86187, September 12, 1975, owner Sanwa Bank.

**Architect / Designer**

According to a 1962 *American Architects Directory*, Shigenori Iyama was born in Fukuoka, Japan on February 16, 1927 and was educated at the University of California, Berkeley graduating in 1949. United States Immigration Records indicate the Iyama family arrived in California on the *M. S. Asama Maru* from Kobe, Japan in August 1931 when he was four years old.<sup>53</sup> During World War II, Iyama was incarcerated at the Central Utah Relocation Center at Topaz. He married Mary Imagawa in 1951. Iyama applied for and was granted U.S. citizenship in 1954.<sup>54</sup> He worked for architects Jack Buchter and A. Hunter before starting his own firm.<sup>55</sup> He died at the age of 65 on May 25, 1992.<sup>56</sup>

Neither the Pacific Architecture Database or the International Architecture Database contain very little information relating to Iyama. The University of California, College of Environmental Design does not list the archives of Shigenori Iyama among its collections

Iyama had an architecture office in Berkeley in the mid-1950s, and by the late 1950s he was working out of Oakland with Al Hunter as Hunter and Iyama.<sup>57</sup> A search of local newspaper indexes and survey books identified the following projects:

- St. Peter's Catholic Church (1961-62), San Rafael, Al Hunter & Shig Iyama;
- Mill Valley community and youth center (1964), Shig Iyama and Robert M. Tanaka. (*San Rafael Daily Independent Journal*, May 19, 1964);
- Vallombrosa retreat center (1964), Menlo Park, CA, (*San Mateo Times, California*, 1964);
- St. Sylvester's Church (1966), San Rafael, CA (*San Rafael Daily Independent Journal*, May 7, 1966);
- Village Plaza (1967), Fairfax, CA (*San Rafael Daily Independent Journal*, March 24, 1967).

Iyama also designed, with his associate Robert Tanaka, the Sumitomo Bank Building at 2001 Franklin Street at 20<sup>th</sup> Street in downtown Oakland. The Franklin Street bank, occupies a prominent corner and is a more dramatic and architecturally sculpted structure than the building at 2121-27 Broadway.

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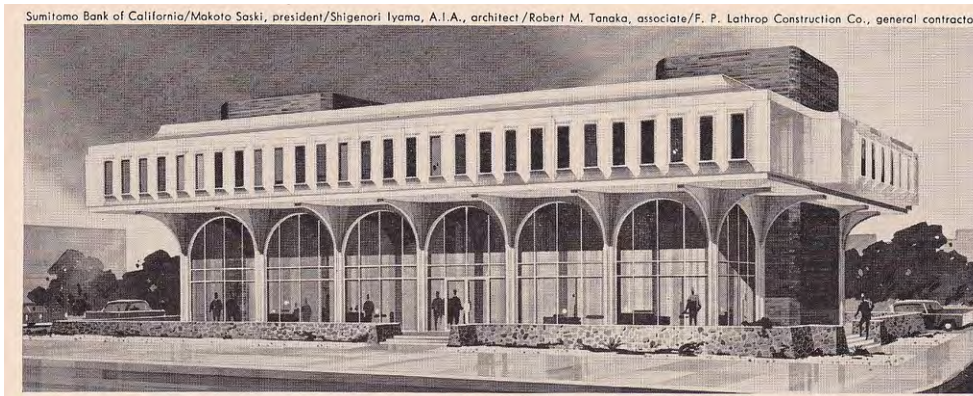
<sup>53</sup> Manifest from the *M. S. Asama Maru* from Kobe, Japan in August 1931. Ancestry.com

<sup>54</sup> Ancestry.com; *California, Federal Naturalization Records, 1887-1991* [database on-line]; *U.S., Final Accountability Rosters of Evacuees at Relocation Centers, 1942-1946* [database on-line].

<sup>55</sup> American Institute of Architects. *American Architects Directory*, 1962, page 342.

<sup>56</sup> California Death Index. Ancestry.com.

<sup>57</sup> *San Rafael Daily Independent Journal*, March 8, 1957



***The bank building Shigenori Iyama designed at 2001 Franklin.***

### **California Register of Historical Resources Evaluation**

#### *California Register Criterion 1: Event or Patterns of Events*

Based on historical research, the building at 2121-2127 Broadway in downtown Oakland, California does not qualify *individually* under California Register Criterion 1: Event/Patterns of Events, for either its association with the development of downtown Oakland or for its association with a financial or banking institution. While these are certainly historical contexts or events that could be linked to this building, the building does not possess an association with an important event that would elevate it to a level of significance to justify *individual* eligibility for the California Register.

#### *California Register Criterion 2: Important Person(s)*

Based on historical research, the building at 2121-2127 Broadway is not associated with any persons or individuals who have had an important role in local, California or national history. It does not appear to have been built for an important Oakland business entity and the building does not possess significant links to important persons or events. There does not appear to be a link between the owners or designers of this building and any significant historical events relating to Oakland history. The building does not appear to qualify *individually* under California Register Criterion 2: Important Person(s).

#### *California Register Criterion 3: Design/Construction/Architecture*

While the building at 2121-27 Broadway is associated with Iyama, limited information about his body of work was discovered making it difficult to assess his significance within the context of Corporate Modern Architecture in Oakland. Certainly, his building at 2001 Franklin is a more interesting, innovative, and iconic structure. While further research may be required to determine if Shigenori Iyama could be considered a master architect, it does appear that the building that more significantly represents his distinctive design capabilities in the context of Modern Architecture in Oakland is the bank building at 2001 Franklin Street. The building at 2121-27 Broadway is less than 50 years in age, and does not appear to be a significant example of Modernism in Oakland. While clearly displaying



a modern idiom, the building does not possess the distinctive characteristics of a type, period, region, or method of construction, nor does it possess high artistic values that would make it *individually* significant under the California Register criteria.

### **Grouping of Bank Buildings in Uptown Oakland**

As noted above, from 1961 to 1975 thirteen banking related structures were constructed in Uptown Oakland, some designed by important mid-century architects or architectural firms. A total of four buildings proposed for demolition include the Security Pacific, Sanwa Bank, Bank of Tokyo, and First/Security National banks. Remaining buildings include the Sumitomo, Bank of California, First Savings, Guaranty Savings, United California, and Security Savings banks. As shown in the previous map, there is a remaining cluster of bank buildings at Franklin between 21<sup>st</sup> and 22<sup>nd</sup> Streets that could be formed into an Area of Secondary Importance (ASI).

**2135-2147 Broadway (Sherman Clay Building)**



*A view of the Sherman Clay Building along Broadway.*

**Subject Parcel & Past Evaluation**

This building faces Broadway between 21<sup>st</sup> and 22<sup>nd</sup> Streets. It sits on APN # 008-648-1. The building is not located within the boundaries an API or ASI or in a designed historic district.

The previous OCHS Survey Rating was Dc3. D means properties of minor importance (existing rating at time of initial evaluation); c means condition “if restored” (contingency rating); and 3 means not in a historic district.

**Current Architectural Description**

The building at 2131-47 Broadway is a two-story structure, trapezoidal in plan, and sits on a corner lot at the southwest corner of Broadway and 22<sup>nd</sup> Street (22<sup>nd</sup> Street was formerly 21<sup>st</sup> Street – See 1950 Sanborn Map). As originally designed by architect William Weeks, this commercial building was a good example of a small-scale commercial structure employing the Chicago style. It had somewhat modified three-part, upper story windows popularized by American Chicago School architects from the 1880s into the 1920s. However, in January 1960, the building received a façade screen that altered its overall

character.<sup>58</sup> This screen was removed circa 1994.<sup>59</sup> While the removal of the façade screen has improved the appearance and integrity of the structure to a certain degree, it has still been highly altered at the lower, storefront level at both the Broadway and 22<sup>nd</sup> Street facades. The primary storefront façade along Broadway have replacement storefront systems and the clerestory or transom windows above the storefronts are covered over and it is unclear if the windows are extant. At the 22<sup>nd</sup> Street side the clerestory windows have been infilled. The upper story appears to be more intact with possible original decorative fretwork detailing below the window sills and decorative modillions above. The brick was not likely originally painted.

### History of Building

The building at 2135-47 Broadway was designed by architect William H. Weeks and built by Carnahan & Mulford in 1917 for H. S. Crane. This information is listed on City of Oakland Building Permit number 44670 dated January 29, 1917.<sup>60</sup> The project was described by the *Oakland Tribune* on February 4, 1917, with a report in the real estate section noting: “H. S. Crane, owner; Carnahan & Mulford, contractors; 2-story brick store and loft building, southwest corner Twenty-first and Broadway; \$29,314.”<sup>61</sup>

The building’s construction was also announced in the February 1917 issue of *The Architect and Engineer*:

“Carnahan and Mulford Get Contract”

Messrs. Carnahan and Mulford, San Francisco contractors with offices at 45 Kearny street, have the contract for building a two-story store and loft building at Twenty-first street and Broadway, Oakland for H. S. Crane. Contract is close to \$30,000. Wm. H. Weeks is the architect.”<sup>62</sup>

The Sherman Clay Company appears to have moved into the building in the mid to late 1960s. The Sherman Clay Company was a music and musical instrument company founded in San Francisco in 1870 by Leander Sherman. Later, in 1879, Clement Clay joined him as a partner and the enterprise became known as the Sherman Clay Company. The business imported pianos and musical instruments, as well as music books and sheet music for sale in California. It also manufactured pianos and church organs from its own factory. As the firm expanded there were stores in Oakland, Fresno, Stockton, and Portland, Oregon.

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<sup>58</sup> City of Oakland Building Permit #B85699 – January 14, 1960; Orinda Properties Inc., owner; \$52,000; remodel building fronts with aluminum curtain walls. Contractor, Christianson and Lyons.

<sup>59</sup> Oakland Cultural Heritage Survey file notes indicate screen removed 1994.

<sup>60</sup> City of Oakland Building Permit Number 44760 – January 26, 1917; M. S Crane, owner; W. H. Weeks, architect.

<sup>61</sup> *The Oakland Tribune*. Sunday, February 4, 1917, Real Estate Section Page 55. (newspapers.com)

<sup>62</sup> “Carnahan and Mulford Get Contract.” *The Architect and Engineer*. February 1917 (Vol 48 No. 2) Page 129.

In 1906, the Sherman Clay Oakland Store was located at 1120 Broadway at the corner of 13<sup>th</sup> Street. After the earthquake and fire of 1906 wreaked havoc on downtown San Francisco, the Sherman Clay company records were salvaged and taken to the Oakland store. In 1910, the Oakland store had relocated to 14<sup>th</sup> Street. The 1950 Oakland City Directory has the Sherman Clay building at Broadway and Hobart (now 21<sup>st</sup> Street), in a building designed for the company by Wurster, Bernardi and Emmons in 1947 (no longer extant). That building, 2101 Broadway, was replaced by the bank structure that sits at the corner of Broadway and 21<sup>st</sup> Street (now vacant).

The 1967 Polk's Oakland City Directory lists the Sherman Clay store located at the building at 2135 Broadway. It is unclear when they moved from the building designed for them by Wurster, Bernardi and Emmons at Broadway and 21<sup>st</sup> Street.

### **Architect / Designer**

William Henry Weeks was a prolific, well-known California architect. Over the course of his career, Weeks designed more than 500 buildings including libraries, schools, churches, courthouses, hospitals and private residences in Central and Northern California. He is particularly remembered for well-designed schools and his Carnegie Libraries throughout the state. Weeks' other Oakland projects include: the First Christian Church (111 Fairmount Avenue), the Lake Merritt Hotel (1800 Madison Avenue), the Leamington Hotel (1814 Franklin), and the Melrose Branch Library, a Carnegie Library (4805 Foothill Boulevard).<sup>63</sup>

### **California Register of Historical Resources Evaluation**

#### *California Register Criterion 1: Event or Patterns of Events*

Based on historical research, the building at 2131-2147 Broadway in downtown Oakland, California does not qualify individually under California Register Criterion 1: Event/Patterns of Events, for either its association with the development of downtown Oakland or with a specific commercial enterprise in Oakland. While these are certainly historical contexts or events that could be linked to this building, no specific event or pattern of events was linked to this building. It does not possess an association with an important event that would elevate it to a level of significance to justify individual eligibility for the California Register.

#### *California Register Criterion 2: Important Person(s)*

Based on historical research, the building at 2135-2147 Broadway is not associated with any individuals who have had an important role in local, California or national history. It does not appear to have been built for an important Oakland business entity and the building does not possess significant links to important persons or events. Its association with the Sherman Clay Company appears to have begun in the mid-1960s and it was not built specifically for that enterprise as a music showroom. There does not appear to be a

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<sup>63</sup> Betty Lewis. *W. H. Weeks, Architect*. Panorama West Books, 1985.

link between the owners or designers of this building and any significant historical events relating to Oakland history. The building does not appear to qualify under California Register Criterion 2: Important Person(s).

*California Register Criterion 3: Design/Construction/Architecture*

While the building at 2135-47 Broadway was designed by an important California architect, William H. Weeks, the structure is not among one of Week's most significant works. The structure has been altered at the storefront level which has impacted its overall integrity. As such, the commercial building at 2135-47 Broadway does not appear to be individually eligible for the California Register of Historical Resources under Criterion 3.

## 2100 Telegraph Avenue



### Summary Information

The Telegraph Plaza Public Parking garage at 2100 Telegraph Avenue was constructed in the 1970s (exact date unknown); however, the Certificate of Occupancy is dated September 13, 1978. The OCHS files show no record of architect and builder; however Oakland Building Department records indicate the structure was designed by architects Van Bourg-Nakamura (known as VBNA, Inc.) and the contractors were Branagh, Inc. It is two stories in height and trapezoidal in plan. The walls are of concrete construction.

### California Register of Historical Resources Evaluation

#### *California Register Criterion 1: Event or Patterns of Events*

Based on historical research, the structure at 2100 Telegraph in downtown Oakland, California does not qualify individually under California Register Criterion 1: Event/Patterns of Events, for either its association with the development of downtown Oakland or with a specific commercial enterprise in Oakland. While these are certainly historical contexts or events that could be linked to this building, no specific event or pattern of events was linked to this building. It does not possess an association with an important event that would elevate it to a level of significance to justify individual eligibility for the California Register.

*California Register Criterion 2: Important Person(s)*

Based on historical research, the building at 2100 Telegraph is not associated with any individuals who have had an important role in local, California or national history. It does not appear to have been built for an important Oakland business entity and the garage does not possess significant links to important persons or events. There does not appear to be a link between the owners or designers of this structure and any significant historical events relating to Oakland history. The structure does not appear to qualify under California Register Criterion 2: Important Person(s).

*California Register Criterion 3: Design/Construction/Architecture*

Oakland Building records contained considerable correspondence about cast concrete columns and “precast ‘trees’” that “do not fall under a ‘typical’ design code requirement”. However, the structure at 2100 Telegraph does not appear to embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of a master, or possesses high artistic values. Therefore, it does not appear to be individually eligible for the California Register under Criterion 3.

## VI. OVERVIEW OF SURROUNDING PROPERTIES

The following section presents a summary of the properties surrounding the project site and within an approximate one or two-block radius, or within view from the subject property. The information in this section was collected from files at the Oakland Cultural Heritage Survey (OCHS) at the City of Oakland. Building files maintained by the OCHS sometimes include Building Permit Research Forms, which show information on architect and builder, as well as permitted alterations.

### 517-523 22<sup>nd</sup> Street



*The residential structure at 517-523 22<sup>nd</sup> Street.*

The building at 517-523 22<sup>nd</sup> Street is an 1898-99, four-family, Georgian-Revival residence. The OCHS files show no record of architect and builder. The building is two stories in height (over a basement) and rectangular in plan. Exterior walls are wood frame. The OCHS Rating is C1+ (Secondary Importance: Superior or visually important example, or very early [pre-1906]. Category C buildings "warrant limited recognition"). The building is located within an API (Cathedral District) and is considered a contributor to this API. As a contributor to the API, this building would be considered an historical resource under CEQA.



**524 22<sup>nd</sup> Street/2201 Telegraph Avenue (First Baptist Church)*****Julia Morgan's First Baptist Church at 2201 Telegraph Avenue.***

The First Baptist Church at 2201 Telegraph Avenue/524 22<sup>nd</sup> Street was designed by Julia Morgan in the Romanesque Revival style and completed in 1903. It is three stories with towers flanking both ends is overall rectangular in plan. Exterior walls are sandstone and brick. The church was heavily damaged by the 1906 earthquake. Architect Julia Morgan was subsequently engaged to repair the earthquake damage and finish the sanctuary. The OCHS Rating is A1+ (Highest Importance: Outstanding architectural example or extreme historical importance). The building is listed in the Local Register. It is located within an API (Cathedral District) and is considered a contributor. As a contributor to the API and as an individually significant structure, this building would be considered an historical resource under CEQA.

### 2025 Broadway (Paramount Theatre)



*The Paramount Theatre at 2025 Broadway.*

The Art Deco Paramount Theatre at 2025 Broadway was completed in 1930. It is irregular in plan with an entrance lobby facing Broadway and a large auditorium space behind. Exterior walls are finished concrete with terracotta details and a large blade sign at the main façade. The architect is Timothy Pflueger. The OCHS Rating is A1+ (Highest Importance: Outstanding architectural example or extreme historical importance). The building was designated a National Historic Landmark in 1977. It is listed in the California Register of Historical Resources, the National Register of Historic Places, and the local register. It is a local landmark (#9). It is located within an Area of Primary Importance (Uptown Commercial) and is considered a contributor. As a National Historic Landmark and a designated City of Oakland Landmark, this building would be considered an historical resource under CEQA.

**2201 Broadway/450-466 22<sup>nd</sup> Street (Breuner Company Building)**

*The Breuner Company building at 2201 Broadway.*

The Art Deco Breuner Company Building at 2201 Broadway was completed in 1931. The architect was Albert Roller, and the builder was P.J. Walker. It is rectangular in plan and eight stories in height. Exterior walls are reinforced concrete with Gladding-McBean glazed terracotta. Architect and engineer Albert Roller chose the latest 'modern' design for the exterior. The reinforced concrete frame, faced with transparent glazed light green terracotta rests on a base of polished black granite. The tile is incised with abstract floral designs at the parapet; over the east doorways, workers are depicted finishing a wooden chair; over the south entrance are depicted a bench and a high-backed chair. The store was founded by John Breuner, a German immigrant who lived in Cincinnati before establishing his California furniture store in Sacramento in 1856.<sup>64</sup>

The OCHS Previous Rating is A3 (Highest Importance: Outstanding architectural example or extreme historical importance). The building is listed in the Local Register. It is not located within a historic district or an API. This building, with a high rating in the OCHS, would be considered an historical resource under CEQA.

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<sup>64</sup> Robert Bernhardt, *The Buildings of Oakland*, Oakland: Forest Hill Press, 1979, 25.

**2211-2221 Broadway/407-417 West Grand Avenue (Hofbrau Building)**



***The commercial structure at 2211-21 Broadway.***

The commercial building at 2211-2221 Broadway was completed in 1933. The architect was Reed & Corlett; the builder was F.A. Muller. It is two stories and rectangular in plan. Exterior walls are concrete with brick veneer in some areas. The OCHS Rating is Dc3 which means of Minor Importance: Representative example. The c means condition "if restored" (contingency rating) and the 3 means the building is not located within a historic district or an API.



**2003-2009 Telegraph Avenue (Santa Fe/Continental Trailways Bus Depot)**



*The small-scale commercial structure at 2003-09 Telegraph Avenue.*

The former Santa Fe/Continental Trailways Bus Depot at 2003-09 Telegraph Avenue is a 1948 commercial building. The architect was Carl S. Replogle, and the builder was F.H. White. It is one story in height and rectangular in plan. Exterior walls are concrete with terracotta and brick veneer details. The OCHS Rating is \*3 (less than 45-years old at the time of the survey, not in a historic district). The building is not located within a historic district or an API.

### 2022 Telegraph Avenue



*The small-scale commercial structure at 2022 Telegraph Avenue.*

The small-scale commercial building at 2022 Telegraph Avenue was built in 1948. The OCHS files show no record of an architect and builder. It is one story in height and rectangular in plan. Exterior walls are masonry. The OCHS Rating is F3 (less than 45 years old or modernized). The building is not located within a historic district or an API.

**2025-2035 Telegraph Avenue**

*The small-scale commercial structure at 2025 Telegraph Avenue.*

The commercial building at 2025 Telegraph Avenue was completed in 1968. The builder is Hugo Muller Construction. The OCHS files show no record of architect. It is one story in height and T-shaped in plan. Exterior walls are concrete block. The OCHS Rating is F3 (less than 45-years old at the time of the survey) and the building is not in a historic district.

### 2040 Telegraph Avenue



*The small-scale commercial structure at 2040 Telegraph Avenue.*

The commercial building at 2040 Telegraph Avenue was completed in 1960. It is one story in height and rectangular in plan. The architect was Marshall, Welsh, McDonald; the builder was W. Barrett & Son. Exterior walls are masonry and glass. The structure has not received an OCHS Rating. It is not located in a historic district or an API.



**2101-2115 Telegraph Avenue (YMCA)**

*The YMCA building at 2101-2115 Telegraph Avenue was first built in 1909, with two stories added a few years later.*

The YMCA at 2101-2115 Telegraph Avenue was completed as a five story building 1909-10. The architect was William C. Hays and the YMCA was listed as the builder on the original building permit. Several years later two additional stories were added. The building is U-shaped in plan. Exterior walls are brick. The OCHS Rating is A3 (Highest Importance: Outstanding architectural example or extreme historical importance; not in a historic district). The building is listed in the Local Register. It is not located in a historic district or an API. This building has a high rating in the OCHS and would be considered an historical resource under CEQA.

## 2200 Telegraph Avenue



*The gas station at 2200 Telegraph Avenue has a large canopy over the pumps.*

The gas station at 2200 Telegraph Avenue was completed in 1987. The OCHS files show no record of architect and builder. It is one story in height and rectangular in plan. The OCHS Rating is F3 (less than 45 years old) and the building is not located within a historic district or an API.

2225 Telegraph Avenue



*The gas station at 2225 Telegraph Avenue has a small masonry structure.*

The gas station at 2225 Telegraph Avenue was completed in 1963. The OCHS files show no record of architect and builder. It is one story in height and rectangular in plan (there are two separate canopy structures covering filling stations). The OCHS Rating is F3 (less than 45 years old). The building is not located within a historic district or an API.

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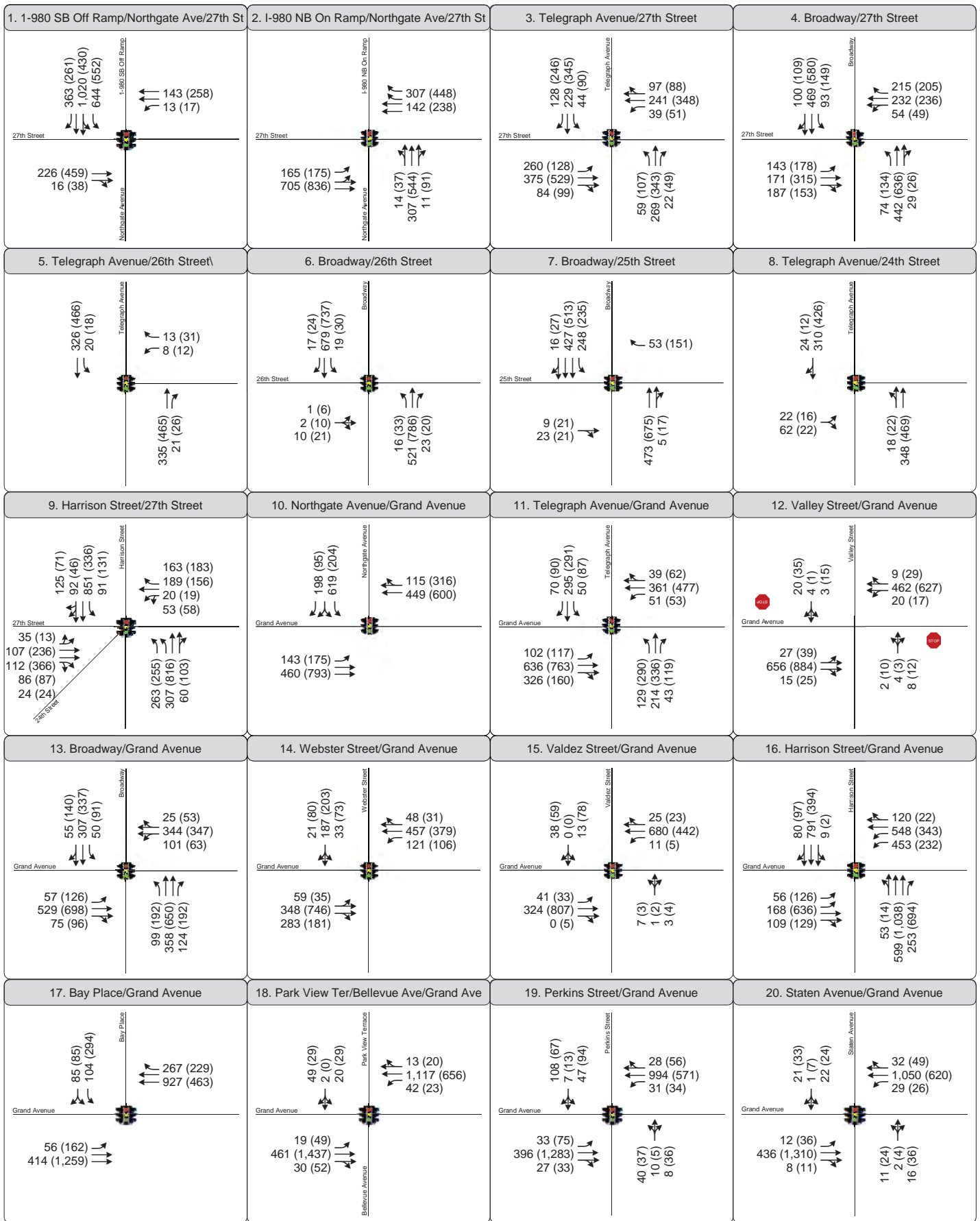
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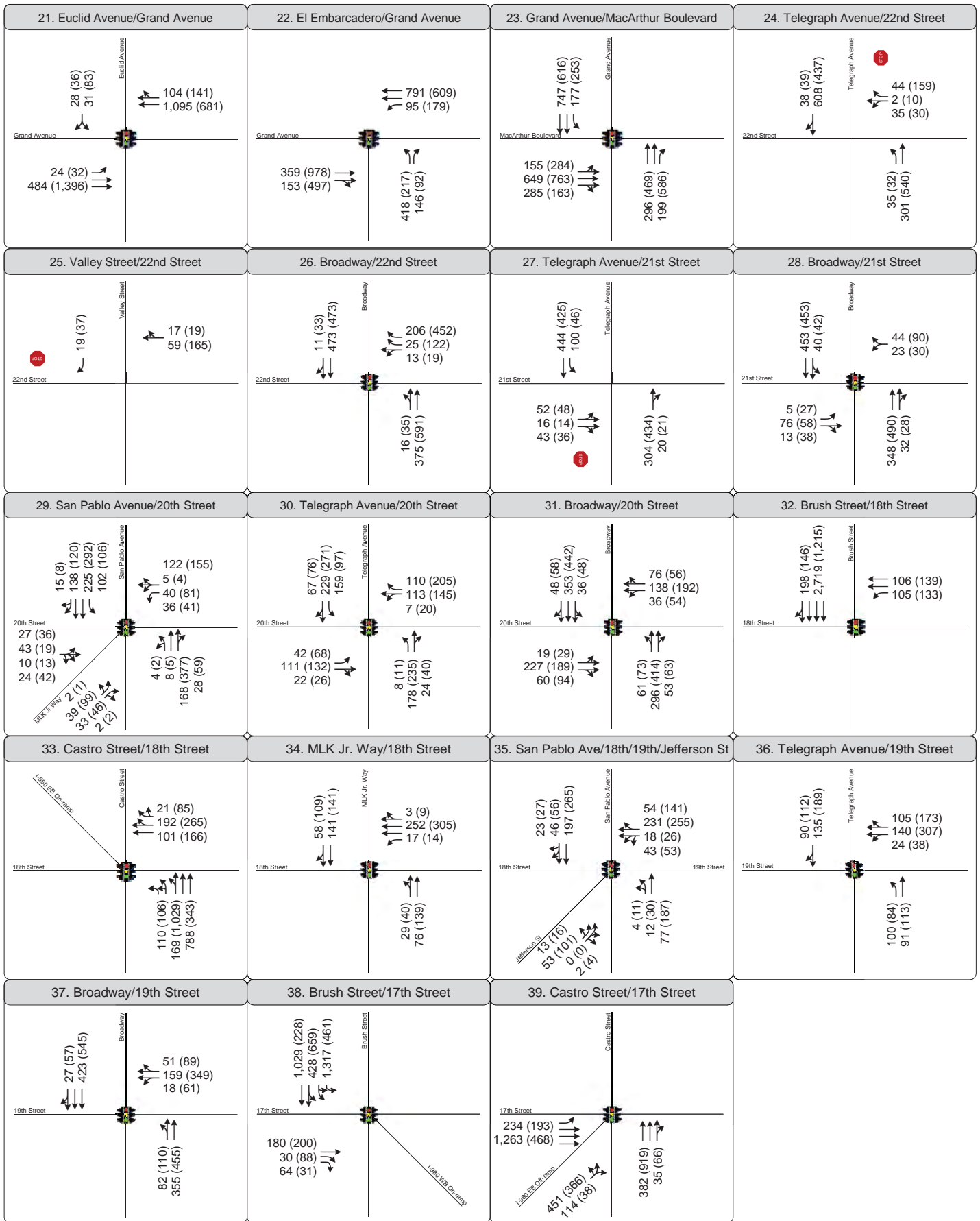
## **APPENDIX C.1: Traffic and Transportation Analysis**





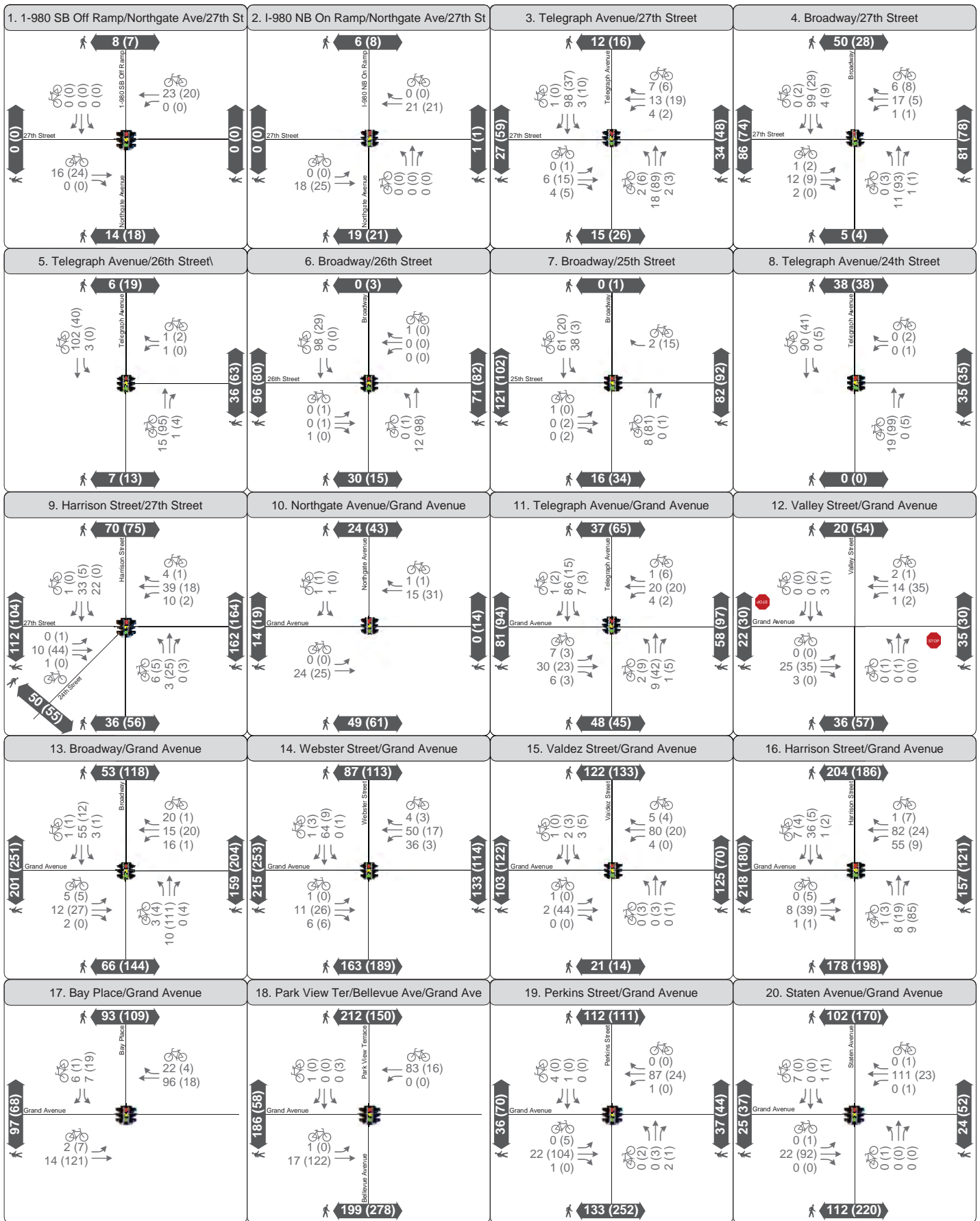
**LEGEND** XX (YY) AM (PM) Peak Hour Traffic Volumes  
 Signalized Intersection Stop Sign

## Existing Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls



**LEGEND** XX (YY) AM (PM) Peak Hour Traffic Volumes  
 Signalized Intersection Stop Sign

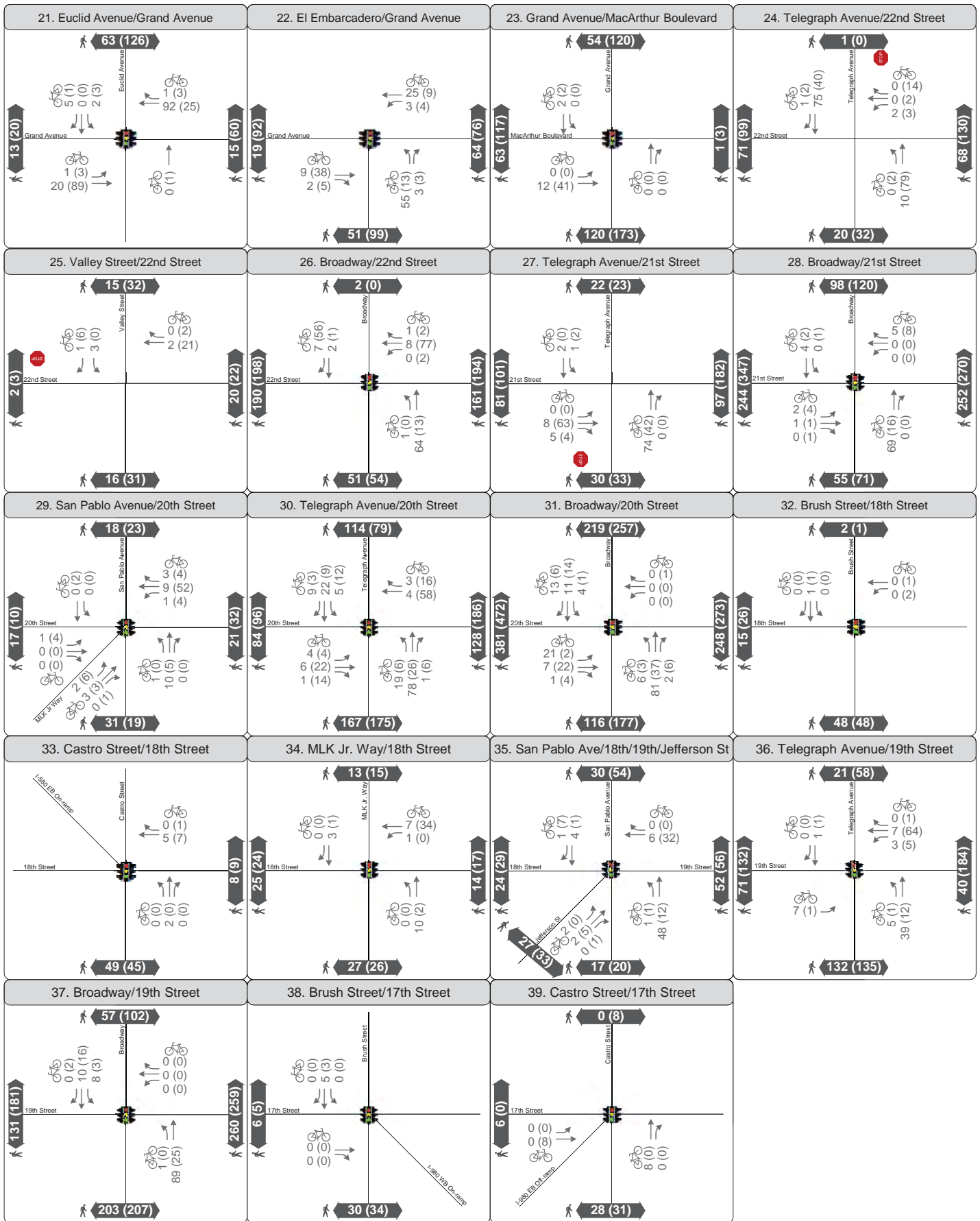
## Existing Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls



**LEGEND**

- $x(y)$  AM (PM) Peak Hour Pedestrian Volumes
- $x(y)$  AM (PM) Peak Hour Bicycle Volumes
- Signalized Intersection
- Stop Sign

## Existing Peak Hour Pedestrian and Bicycle Volumes

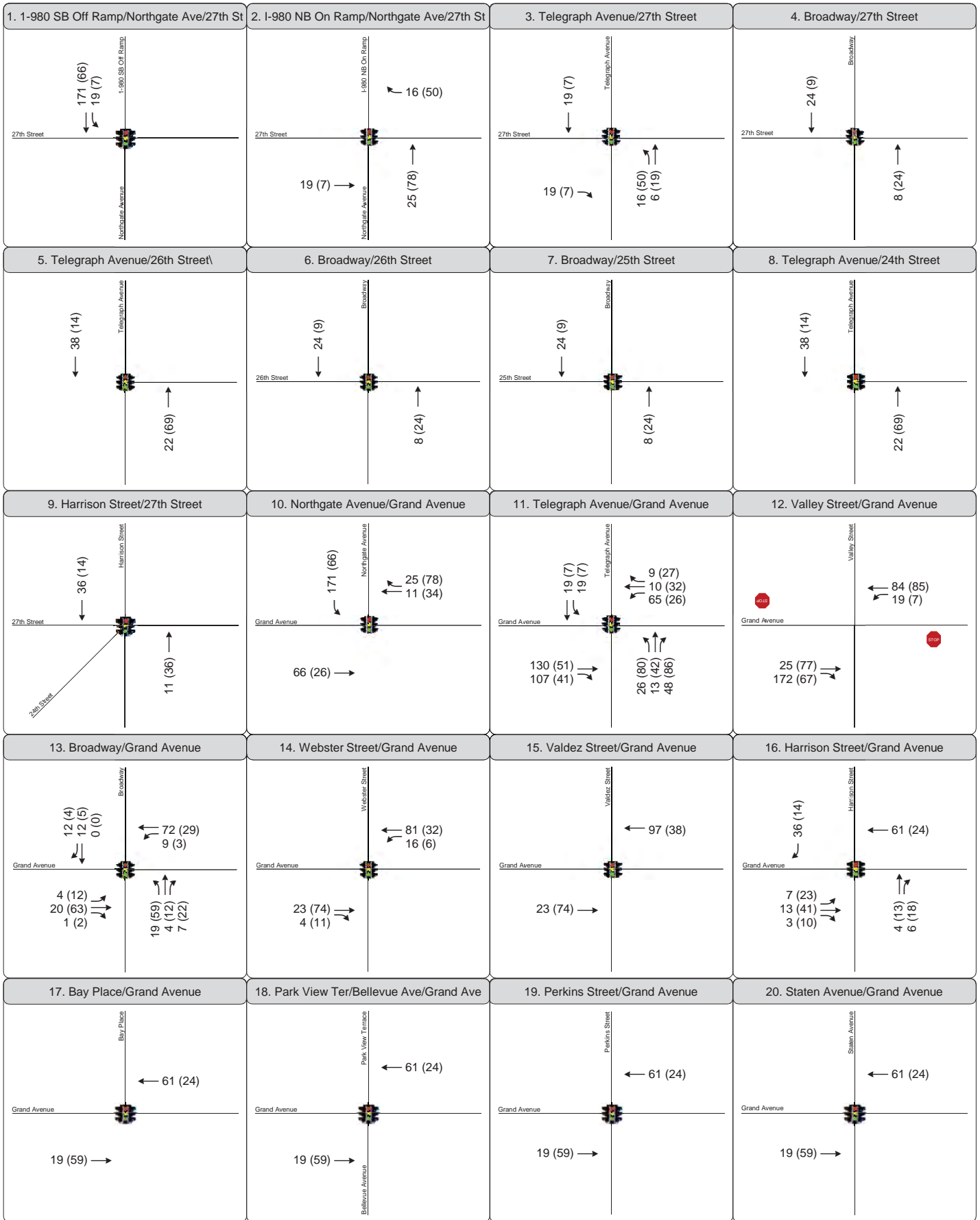


**LEGEND**

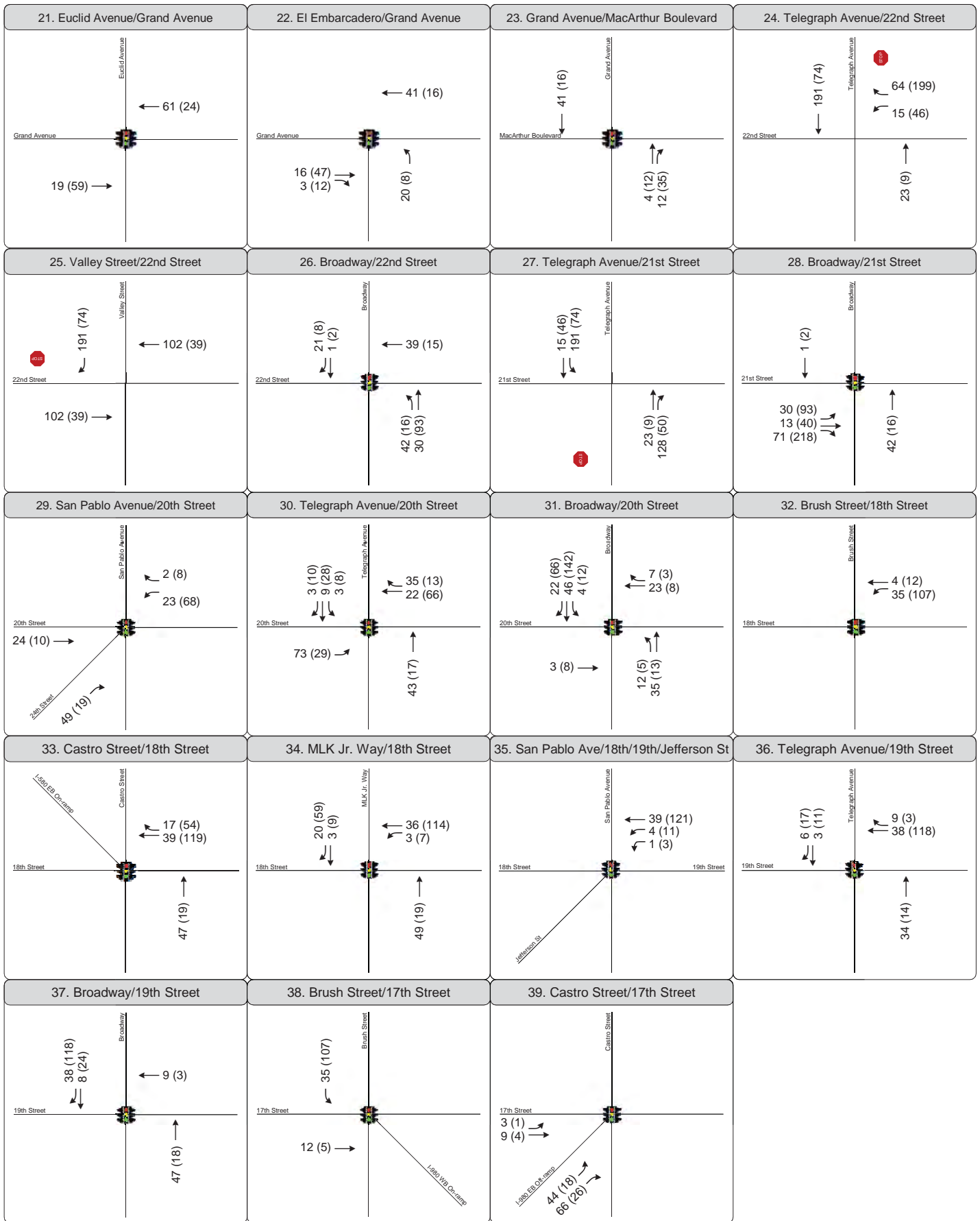
- x (y)** AM (PM) Peak Hour Pedestrian Volumes
- x (y)** AM (PM) Peak Hour Bicycle Volumes
- Signalized Intersection
- Stop Sign

Appendix C.1-4

## Existing Peak Hour Pedestrian and Bicycle Volumes



**LEGEND** XX (YY) AM (PM) Peak Hour Traffic Volumes  
 Signalized Intersection Stop Sign



**LEGEND** XX (YY) AM (PM) Peak Hour Traffic Volumes  
 Signalized Intersection Stop Sign



## Turning Movement Volumes

| 2016-No Project-AM  |              |     |     |     |     |      |     |     |     |     |     |     |     |
|---------------------|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |     |     | 644 | 1020 | 363 |     | 226 | 16  | 13  | 143 |     |
| Northgate Avenue NB | 27th Street  | 14  | 307 | 11  |     |      |     | 165 | 705 |     |     | 142 | 307 |
| Northgate Avenue    | Grand Avenue |     |     |     | 619 |      | 198 | 143 | 460 |     |     | 449 | 115 |
| Telegraph Avenue    | Grand Avenue | 102 | 202 | 49  | 71  | 284  | 72  | 114 | 563 | 312 | 53  | 374 | 57  |
| Broadway            | Grand Avenue | 99  | 358 | 124 | 50  | 307  | 55  | 57  | 529 | 75  | 101 | 344 | 25  |
| Harrison Street     | Grand Avenue | 53  | 599 | 253 | 9   | 791  | 80  | 56  | 168 | 109 | 453 | 548 | 120 |
| Telegraph Avenue    | 22nd Street  | 35  | 301 |     |     | 608  | 38  |     |     |     | 35  | 2   | 44  |
| Broadway            | 22nd Street  | 16  | 375 |     |     | 473  | 11  |     |     |     | 13  | 25  | 206 |
| Telegraph Avenue    | 21st Street  |     | 304 | 20  | 100 | 444  |     | 52  | 16  | 43  |     |     |     |
| Broadway            | 21st Street  |     | 348 | 32  | 40  | 453  |     | 5   | 76  | 13  | 23  |     | 44  |
| Telegraph Avenue    | 20th Street  | 15  | 160 | 16  | 183 | 209  | 79  | 43  | 110 | 14  | 10  | 101 | 134 |
| Broadway            | 20th Street  | 61  | 296 | 53  | 36  | 353  | 48  | 19  | 227 | 60  | 36  | 138 | 76  |
| Telegraph Avenue    | 19th Street  | 100 | 91  |     |     | 135  | 90  |     |     |     | 24  | 140 | 105 |

| 2016-Residential and Office Mix FDP-AM |              |     |     |     |     |      |     |     |     |     |     |     |     |
|--|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                                  | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB                    | 27th Street  |     |     |     | 663 | 1191 | 363 |     | 226 | 16  | 13  | 143 |     |
| Northgate Avenue NB                    | 27th Street  | 14  | 332 | 11  |     |      |     | 165 | 724 |     |     | 142 | 323 |
| Northgate Avenue                       | Grand Avenue |     |     |     | 790 |      | 198 | 143 | 526 |     |     | 460 | 140 |
| Telegraph Avenue                       | Grand Avenue | 128 | 215 | 97  | 90  | 303  | 72  | 114 | 693 | 419 | 118 | 384 | 66  |
| Broadway                               | Grand Avenue | 118 | 362 | 131 | 50  | 319  | 67  | 61  | 549 | 76  | 110 | 416 | 25  |
| Harrison Street                        | Grand Avenue | 53  | 603 | 259 | 9   | 791  | 116 | 63  | 181 | 112 | 453 | 609 | 120 |
| Telegraph Avenue                       | 22nd Street  | 35  | 324 |     |     | 799  | 38  |     |     |     | 50  | 2   | 108 |
| Broadway                               | 22nd Street  | 58  | 405 |     |     | 474  | 32  |     |     |     | 13  | 64  | 206 |
| Telegraph Avenue                       | 21st Street  |     | 327 | 148 | 291 | 459  |     | 52  | 16  | 43  |     |     |     |
| Broadway                               | 21st Street  |     | 390 | 32  | 40  | 454  |     | 35  | 89  | 84  | 23  |     | 44  |
| Telegraph Avenue                       | 20th Street  | 15  | 203 | 16  | 186 | 218  | 82  | 116 | 110 | 14  | 10  | 123 | 169 |
| Broadway                               | 20th Street  | 73  | 331 | 53  | 40  | 399  | 70  | 19  | 230 | 60  | 36  | 161 | 83  |
| Telegraph Avenue                       | 19th Street  | 100 | 125 |     |     | 138  | 96  |     |     |     | 24  | 178 | 114 |

| 2016-Maximum Office-AM |              |     |     |     |      |      |     |     |     |     |     |     |     |
|------------------------|--------------|-----|-----|-----|------|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                  | EB/WB        | NBL | NBT | NBR | SBL  | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB    | 27th Street  |     |     |     | 687  | 1404 | 363 |     | 226 | 16  | 13  | 143 |     |
| Northgate Avenue NB    | 27th Street  | 14  | 336 | 11  |      |      |     | 165 | 748 |     |     | 142 | 326 |
| Northgate Avenue       | Grand Avenue |     |     |     | 1003 |      | 198 | 143 | 609 |     |     | 460 | 144 |
| Telegraph Avenue       | Grand Avenue | 131 | 217 | 126 | 113  | 326  | 72  | 114 | 856 | 552 | 202 | 385 | 67  |
| Broadway               | Grand Avenue | 120 | 362 | 132 | 50   | 335  | 83  | 61  | 550 | 76  | 121 | 508 | 25  |
| Harrison Street        | Grand Avenue | 53  | 604 | 259 | 9    | 791  | 162 | 63  | 183 | 112 | 453 | 687 | 120 |
| Telegraph Avenue       | 22nd Street  | 35  | 352 |     |      | 1039 | 38  |     |     |     | 51  | 2   | 114 |
| Broadway               | 22nd Street  | 111 | 408 |     |      | 474  | 59  |     |     |     | 13  | 112 | 206 |
| Telegraph Avenue       | 21st Street  |     | 355 | 309 | 531  | 460  |     | 52  | 16  | 43  |     |     |     |
| Broadway               | 21st Street  |     | 443 | 32  | 40   | 454  |     | 38  | 90  | 89  | 23  |     | 44  |
| Telegraph Avenue       | 20th Street  | 15  | 257 | 16  | 186  | 219  | 82  | 207 | 110 | 14  | 10  | 124 | 213 |
| Broadway               | 20th Street  | 89  | 375 | 53  | 40   | 404  | 70  | 19  | 230 | 60  | 36  | 190 | 92  |
| Telegraph Avenue       | 19th Street  | 100 | 168 |     |      | 139  | 96  |     |     |     | 24  | 182 | 125 |

| 2040-No Project-AM  |              |     |     |     |     |      |     |     |     |     |     |     |     |
|---------------------|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |     |     | 820 | 1190 | 430 |     | 280 | 20  | 20  | 170 |     |
| Northgate Avenue NB | 27th Street  | 20  | 430 | 20  |     |      |     | 200 | 900 |     |     | 170 | 450 |
| Northgate Avenue    | Grand Avenue |     |     |     | 730 |      | 260 | 210 | 770 |     |     | 840 | 190 |
| Telegraph Avenue    | Grand Avenue | 180 | 210 | 60  | 110 | 320  | 90  | 130 | 930 | 350 | 70  | 740 | 80  |
| Broadway            | Grand Avenue | 120 | 480 | 140 | 70  | 400  | 80  | 70  | 920 | 80  | 120 | 710 | 50  |
| Harrison Street     | Grand Avenue | 60  | 890 | 340 | 10  | 1120 | 90  | 60  | 350 | 130 | 580 | 930 | 160 |
| Telegraph Avenue    | 22nd Street  | 50  | 390 |     |     | 690  | 50  |     |     |     | 40  | 10  | 50  |
| Broadway            | 22nd Street  | 30  | 430 |     |     | 590  | 20  |     |     |     | 30  | 30  | 310 |
| Telegraph Avenue    | 21st Street  |     | 390 | 30  | 110 | 530  |     | 70  | 30  | 70  |     |     |     |
| Broadway            | 21st Street  |     | 390 | 50  | 70  | 560  |     | 10  | 120 | 20  | 60  |     | 70  |
| Telegraph Avenue    | 20th Street  | 20  | 200 | 20  | 210 | 280  | 100 | 50  | 200 | 20  | 20  | 110 | 160 |
| Broadway            | 20th Street  | 70  | 340 | 70  | 50  | 490  | 50  | 30  | 320 | 80  | 50  | 170 | 80  |
| Telegraph Avenue    | 19th Street  | 120 | 100 |     |     | 220  | 100 |     |     |     | 30  | 160 | 150 |

| 2040-Residential and Office Mix FDP-AM |              |     |     |     |     |      |     |     |      |     |     |     |     |
|--|--------------|-----|-----|-----|-----|------|-----|-----|------|-----|-----|-----|-----|
| NB/SB                                  | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT  | EBR | WBL | WBT | WBR |
| Northgate Avenue SB                    | 27th Street  |     |     |     | 839 | 1361 | 430 |     | 280  | 20  | 20  | 170 |     |
| Northgate Avenue NB                    | 27th Street  | 20  | 455 | 20  |     |      |     | 200 | 919  |     |     | 170 | 466 |
| Northgate Avenue                       | Grand Avenue |     |     |     | 901 |      | 260 | 210 | 836  |     |     | 851 | 215 |
| Telegraph Avenue                       | Grand Avenue | 206 | 223 | 108 | 129 | 339  | 90  | 130 | 1060 | 457 | 135 | 750 | 89  |
| Broadway                               | Grand Avenue | 139 | 484 | 147 | 70  | 412  | 92  | 74  | 940  | 81  | 129 | 782 | 50  |
| Harrison Street                        | Grand Avenue | 60  | 894 | 346 | 10  | 1120 | 126 | 67  | 363  | 133 | 580 | 991 | 160 |
| Telegraph Avenue                       | 22nd Street  | 50  | 413 |     |     | 881  | 50  |     |      |     | 55  | 10  | 114 |
| Broadway                               | 22nd Street  | 72  | 460 |     |     | 591  | 41  |     |      |     | 30  | 69  | 310 |
| Telegraph Avenue                       | 21st Street  |     | 413 | 158 | 301 | 545  |     | 70  | 30   | 70  |     |     |     |
| Broadway                               | 21st Street  |     | 432 | 50  | 70  | 561  |     | 40  | 133  | 91  | 60  |     | 70  |
| Telegraph Avenue                       | 20th Street  | 20  | 243 | 20  | 213 | 289  | 103 | 123 | 200  | 20  | 20  | 132 | 195 |
| Broadway                               | 20th Street  | 82  | 375 | 70  | 54  | 536  | 72  | 30  | 323  | 80  | 50  | 193 | 87  |
| Telegraph Avenue                       | 19th Street  | 120 | 134 |     |     | 223  | 106 |     |      |     | 30  | 198 | 159 |

| 2040-Maximum Office-AM |              |     |     |     |      |      |     |     |      |     |     |      |     |
|------------------------|--------------|-----|-----|-----|------|------|-----|-----|------|-----|-----|------|-----|
| NB/SB                  | EB/WB        | NBL | NBT | NBR | SBL  | SBT  | SBR | EBL | EBT  | EBR | WBL | WBT  | WBR |
| Northgate Avenue SB    | 27th Street  |     |     |     | 863  | 1574 | 430 |     | 280  | 20  | 20  | 170  |     |
| Northgate Avenue NB    | 27th Street  | 20  | 459 | 20  |      |      |     | 200 | 943  |     |     | 170  | 469 |
| Northgate Avenue       | Grand Avenue |     |     |     | 1114 |      | 260 | 210 | 919  |     |     | 851  | 219 |
| Telegraph Avenue       | Grand Avenue | 209 | 225 | 137 | 152  | 362  | 90  | 130 | 1223 | 590 | 219 | 751  | 90  |
| Broadway               | Grand Avenue | 141 | 484 | 148 | 70   | 428  | 108 | 74  | 941  | 81  | 140 | 874  | 50  |
| Harrison Street        | Grand Avenue | 60  | 895 | 346 | 10   | 1120 | 172 | 67  | 365  | 133 | 580 | 1069 | 160 |
| Telegraph Avenue       | 22nd Street  | 50  | 441 |     |      | 1121 | 50  |     |      |     | 56  | 10   | 120 |
| Broadway               | 22nd Street  | 125 | 463 |     |      | 591  | 68  |     |      |     | 30  | 117  | 310 |
| Telegraph Avenue       | 21st Street  |     | 441 | 319 | 541  | 546  |     | 70  | 30   | 70  |     |      |     |
| Broadway               | 21st Street  |     | 485 | 50  | 70   | 561  |     | 43  | 134  | 96  | 60  |      | 70  |
| Telegraph Avenue       | 20th Street  | 20  | 297 | 20  | 213  | 290  | 103 | 214 | 200  | 20  | 20  | 133  | 239 |
| Broadway               | 20th Street  | 98  | 419 | 70  | 54   | 541  | 72  | 30  | 323  | 80  | 50  | 222  | 96  |
| Telegraph Avenue       | 19th Street  | 120 | 177 |     |      | 224  | 106 |     |      |     | 30  | 202  | 170 |

| 2016-No Project-PM  |              |     |       |     |     |     |     |     |     |     |     |     |     |
|---------------------|--------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |       |     | 552 | 430 | 261 |     | 459 | 38  | 17  | 258 |     |
| Northgate Avenue NB | 27th Street  | 37  | 544   | 91  |     |     |     | 175 | 836 |     |     | 238 | 448 |
| Northgate Avenue    | Grand Avenue |     |       |     | 204 |     | 95  | 175 | 793 |     |     | 600 | 316 |
| Telegraph Avenue    | Grand Avenue | 281 | 343   | 105 | 96  | 294 | 135 | 117 | 739 | 147 | 59  | 500 | 108 |
| Broadway            | Grand Avenue | 192 | 650   | 192 | 91  | 337 | 140 | 126 | 698 | 96  | 63  | 347 | 53  |
| Harrison Street     | Grand Avenue | 14  | 1,038 | 694 | 2   | 394 | 97  | 126 | 636 | 129 | 232 | 343 | 22  |
| Telegraph Avenue    | 22nd Street  | 32  | 540   |     |     | 437 | 39  |     |     |     | 30  | 10  | 159 |
| Broadway            | 22nd Street  | 35  | 591   |     |     | 473 | 33  |     |     |     | 19  | 122 | 452 |
| Telegraph Avenue    | 21st Street  |     | 434   | 21  | 46  | 425 |     | 48  | 14  | 36  |     |     |     |
| Broadway            | 21st Street  |     | 490   | 28  | 42  | 453 |     | 27  | 58  | 38  | 30  |     | 90  |
| Telegraph Avenue    | 20th Street  | 27  | 216   | 45  | 113 | 252 | 93  | 55  | 155 | 32  | 24  | 131 | 176 |
| Broadway            | 20th Street  | 73  | 414   | 63  | 48  | 442 | 58  | 29  | 189 | 94  | 54  | 192 | 56  |
| Telegraph Avenue    | 19th Street  | 84  | 113   |     |     | 189 | 112 |     |     |     | 38  | 307 | 173 |

| 2016-Residential and Office Mix FDP-PM |              |     |       |     |     |     |     |     |     |     |     |     |     |
|--|--------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                                  | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB                    | 27th Street  |     |       |     | 560 | 502 | 261 |     | 459 | 38  | 17  | 258 |     |
| Northgate Avenue NB                    | 27th Street  | 37  | 626   | 91  |     |     |     | 175 | 844 |     |     | 238 | 501 |
| Northgate Avenue                       | Grand Avenue |     |       |     | 276 |     | 95  | 175 | 821 |     |     | 635 | 398 |
| Telegraph Avenue                       | Grand Avenue | 365 | 386   | 195 | 104 | 302 | 135 | 117 | 794 | 192 | 86  | 533 | 137 |
| Broadway                               | Grand Avenue | 254 | 662   | 215 | 91  | 342 | 145 | 139 | 762 | 99  | 67  | 377 | 53  |
| Harrison Street                        | Grand Avenue | 14  | 1,052 | 713 | 2   | 394 | 113 | 149 | 679 | 139 | 232 | 368 | 22  |
| Telegraph Avenue                       | 22nd Street  | 32  | 550   |     |     | 517 | 39  |     |     |     | 78  | 10  | 366 |
| Broadway                               | 22nd Street  | 53  | 688   |     |     | 476 | 42  |     |     |     | 19  | 139 | 452 |
| Telegraph Avenue                       | 21st Street  |     | 444   | 75  | 126 | 473 |     | 48  | 14  | 36  |     |     |     |
| Broadway                               | 21st Street  |     | 508   | 28  | 42  | 456 |     | 124 | 99  | 266 | 30  |     | 90  |
| Telegraph Avenue                       | 20th Street  | 27  | 234   | 45  | 121 | 281 | 104 | 86  | 155 | 32  | 24  | 199 | 191 |
| Broadway                               | 20th Street  | 78  | 430   | 63  | 61  | 592 | 126 | 29  | 197 | 94  | 54  | 202 | 58  |
| Telegraph Avenue                       | 19th Street  | 84  | 127   |     |     | 200 | 130 |     |     |     | 38  | 431 | 177 |

| 2016-Maximum Office-PM |              |     |       |     |     |     |     |     |     |     |     |     |     |
|------------------------|--------------|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                  | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB    | 27th Street  |     |       |     | 563 | 532 | 261 |     | 459 | 38  | 17  | 258 |     |
| Northgate Avenue NB    | 27th Street  | 37  | 745   | 91  |     |     |     | 175 | 847 |     |     | 238 | 578 |
| Northgate Avenue       | Grand Avenue |     |       |     | 306 |     | 95  | 175 | 832 |     |     | 687 | 517 |
| Telegraph Avenue       | Grand Avenue | 488 | 449   | 315 | 107 | 305 | 135 | 117 | 816 | 211 | 98  | 581 | 178 |
| Broadway               | Grand Avenue | 343 | 681   | 249 | 91  | 345 | 147 | 156 | 858 | 102 | 68  | 390 | 53  |
| Harrison Street        | Grand Avenue | 14  | 1,073 | 739 | 2   | 394 | 119 | 183 | 745 | 153 | 232 | 379 | 22  |
| Telegraph Avenue       | 22nd Street  | 32  | 553   |     |     | 551 | 39  |     |     |     | 149 | 10  | 669 |
| Broadway               | 22nd Street  | 61  | 830   |     |     | 479 | 46  |     |     |     | 19  | 145 | 452 |
| Telegraph Avenue       | 21st Street  |     | 447   | 98  | 160 | 544 |     | 48  | 14  | 36  |     |     |     |
| Broadway               | 21st Street  |     | 516   | 28  | 42  | 459 |     | 266 | 160 | 600 | 30  |     | 90  |
| Telegraph Avenue       | 20th Street  | 27  | 241   | 45  | 133 | 324 | 120 | 98  | 155 | 32  | 24  | 301 | 198 |
| Broadway               | 20th Street  | 81  | 435   | 63  | 77  | 811 | 228 | 29  | 209 | 94  | 54  | 206 | 61  |
| Telegraph Avenue       | 19th Street  | 84  | 133   |     |     | 217 | 156 |     |     |     | 38  | 612 | 178 |

| 2040-No Project-PM  |              |     |       |     |     |     |     |     |       |     |     |     |     |
|---------------------|--------------|-----|-------|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT   | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |       |     | 760 | 520 | 320 |     | 600   | 50  | 30  | 310 |     |
| Northgate Avenue NB | 27th Street  | 50  | 610   | 180 |     |     |     | 210 | 1,150 |     |     | 290 | 710 |
| Northgate Avenue    | Grand Avenue |     |       |     | 280 |     | 140 | 250 | 1,220 |     |     | 990 | 410 |
| Telegraph Avenue    | Grand Avenue | 320 | 460   | 150 | 120 | 340 | 190 | 130 | 1,170 | 210 | 70  | 890 | 120 |
| Broadway            | Grand Avenue | 270 | 900   | 230 | 140 | 350 | 180 | 140 | 1,140 | 140 | 100 | 630 | 80  |
| Harrison Street     | Grand Avenue | 40  | 1,670 | 860 | 10  | 650 | 190 | 250 | 860   | 250 | 270 | 600 | 30  |
| Telegraph Avenue    | 22nd Street  | 40  | 730   |     |     | 540 | 50  |     |       |     | 40  | 20  | 180 |
| Broadway            | 22nd Street  | 40  | 830   |     |     | 510 | 80  |     |       |     | 40  | 140 | 570 |
| Telegraph Avenue    | 21st Street  |     | 620   | 30  | 50  | 540 |     | 60  | 20    | 50  |     |     |     |
| Broadway            | 21st Street  |     | 570   | 40  | 50  | 510 |     | 30  | 70    | 40  | 50  |     | 260 |
| Telegraph Avenue    | 20th Street  | 40  | 380   | 60  | 130 | 350 | 110 | 60  | 200   | 40  | 30  | 170 | 210 |
| Broadway            | 20th Street  | 90  | 480   | 80  | 60  | 490 | 70  | 40  | 230   | 120 | 110 | 240 | 70  |
| Telegraph Avenue    | 19th Street  | 100 | 200   |     |     | 270 | 150 |     |       |     | 50  | 330 | 290 |

| 2040-Residential and Office Mix FDP-PM |              |     |       |     |     |     |     |     |       |     |     |       |     |
|--|--------------|-----|-------|-----|-----|-----|-----|-----|-------|-----|-----|-------|-----|
| NB/SB                                  | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT   | EBR | WBL | WBT   | WBR |
| Northgate Avenue SB                    | 27th Street  |     |       |     | 768 | 592 | 320 |     | 600   | 50  | 30  | 310   |     |
| Northgate Avenue NB                    | 27th Street  | 50  | 692   | 180 |     |     |     | 210 | 1,158 |     |     | 290   | 763 |
| Northgate Avenue                       | Grand Avenue |     |       |     | 352 |     | 140 | 250 | 1,248 |     |     | 1,025 | 492 |
| Telegraph Avenue                       | Grand Avenue | 404 | 503   | 240 | 128 | 348 | 190 | 130 | 1,225 | 255 | 97  | 923   | 149 |
| Broadway                               | Grand Avenue | 332 | 912   | 253 | 140 | 355 | 185 | 153 | 1,204 | 143 | 104 | 660   | 80  |
| Harrison Street                        | Grand Avenue | 40  | 1,684 | 879 | 10  | 650 | 206 | 273 | 903   | 260 | 270 | 625   | 30  |
| Telegraph Avenue                       | 22nd Street  | 40  | 740   |     |     | 620 | 50  |     |       |     | 88  | 20    | 387 |
| Broadway                               | 22nd Street  | 58  | 927   |     |     | 513 | 89  |     |       |     | 40  | 157   | 570 |
| Telegraph Avenue                       | 21st Street  |     | 630   | 84  | 130 | 588 |     | 60  | 20    | 50  |     |       |     |
| Broadway                               | 21st Street  |     | 588   | 40  | 50  | 513 |     | 127 | 111   | 268 | 50  |       | 260 |
| Telegraph Avenue                       | 20th Street  | 40  | 398   | 60  | 138 | 379 | 121 | 91  | 200   | 40  | 30  | 238   | 225 |
| Broadway                               | 20th Street  | 95  | 496   | 80  | 73  | 640 | 138 | 40  | 238   | 120 | 110 | 250   | 72  |
| Telegraph Avenue                       | 19th Street  | 100 | 214   |     |     | 281 | 168 |     |       |     | 50  | 454   | 294 |

| 2040-Maximum Office-PM |              |     |       |     |     |     |     |     |       |     |     |       |     |
|------------------------|--------------|-----|-------|-----|-----|-----|-----|-----|-------|-----|-----|-------|-----|
| NB/SB                  | EB/WB        | NBL | NBT   | NBR | SBL | SBT | SBR | EBL | EBT   | EBR | WBL | WBT   | WBR |
| Northgate Avenue SB    | 27th Street  |     |       |     | 771 | 622 | 320 |     | 600   | 50  | 30  | 310   |     |
| Northgate Avenue NB    | 27th Street  | 50  | 811   | 180 |     |     |     | 210 | 1,161 |     |     | 290   | 840 |
| Northgate Avenue       | Grand Avenue |     |       |     | 382 |     | 140 | 250 | 1,259 |     |     | 1,077 | 611 |
| Telegraph Avenue       | Grand Avenue | 527 | 566   | 360 | 131 | 351 | 190 | 130 | 1,247 | 274 | 109 | 971   | 190 |
| Broadway               | Grand Avenue | 421 | 931   | 287 | 140 | 358 | 187 | 170 | 1,300 | 146 | 105 | 673   | 80  |
| Harrison Street        | Grand Avenue | 40  | 1,705 | 905 | 10  | 650 | 212 | 307 | 969   | 274 | 270 | 636   | 30  |
| Telegraph Avenue       | 22nd Street  | 40  | 743   |     |     | 654 | 50  |     |       |     | 159 | 20    | 690 |
| Broadway               | 22nd Street  | 66  | 1,069 |     |     | 516 | 93  |     |       |     | 40  | 163   | 570 |
| Telegraph Avenue       | 21st Street  |     | 633   | 107 | 164 | 659 |     | 60  | 20    | 50  |     |       |     |
| Broadway               | 21st Street  |     | 596   | 40  | 50  | 516 |     | 269 | 172   | 602 | 50  |       | 260 |
| Telegraph Avenue       | 20th Street  | 40  | 405   | 60  | 150 | 422 | 137 | 103 | 200   | 40  | 30  | 340   | 232 |
| Broadway               | 20th Street  | 98  | 501   | 80  | 89  | 859 | 240 | 40  | 250   | 120 | 110 | 254   | 75  |
| Telegraph Avenue       | 19th Street  | 100 | 220   |     |     | 298 | 194 |     |       |     | 50  | 635   | 295 |

| Existing-No Project-PM |          |       |        |       |       |       |       |       |       |       |       |       |       |
|------------------------|----------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NB/SB                  | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   |
| Northgate SB           | 27th St  |       |        |       | 5,520 | 4,300 | 2,610 |       | 4,590 | 380   | 170   | 2,580 |       |
| Northgate NB           | 27th St  | 370   | 5,440  | 910   |       |       |       | 1,750 | 8,360 |       |       | 2,380 | 4,480 |
| Northgate Ave          | Grand Av |       |        |       | 2,040 |       | 950   | 1,750 | 7,930 |       |       | 6,000 | 3,160 |
| Telegraph Ave          | Grand Av | 2,810 | 3,430  | 1,050 | 960   | 2,940 | 1,350 | 1,170 | 7,390 | 1,470 | 590   | 5,000 | 1,080 |
| Broadway               | Grand Av | 1,920 | 6,500  | 1,920 | 910   | 3,370 | 1,400 | 1,260 | 6,980 | 960   | 630   | 3,470 | 530   |
| Harrison St            | Grand Av | 140   | 10,380 | 6,940 | 20    | 3,940 | 970   | 1,260 | 6,360 | 1,290 | 2,320 | 3,430 | 220   |
| Telegraph Ave          | 22nd St  | 320   | 5,400  |       |       | 4,370 | 390   |       |       |       | 300   | 100   | 1,590 |
| Broadway               | 22nd St  | 350   | 5,910  |       |       | 4,730 | 330   |       |       |       | 190   | 1,220 | 4,520 |
| Telegraph Ave          | 21st St  |       | 4,340  | 210   | 460   | 4,250 |       | 480   | 140   | 360   |       |       |       |
| Broadway               | 21st St  |       | 4,900  | 280   | 420   | 4,530 |       | 270   | 580   | 380   | 300   |       | 900   |
| Telegraph Ave          | 20th St  | 270   | 2,160  | 450   | 1,130 | 2,520 | 930   | 550   | 1,550 | 320   | 240   | 1,310 | 1,760 |
| Broadway               | 20th St  | 730   | 4,140  | 630   | 480   | 4,420 | 580   | 290   | 1,890 | 940   | 540   | 1,920 | 560   |
| Telegraph Ave          | 19th St  | 840   | 1,130  |       |       | 1,890 | 1,120 |       |       |       | 380   | 3,070 | 1,730 |

| Existing Residential and Office Mix FDP-PM |          |       |        |       |       |       |       |       |       |       |       |       |       |
|--|----------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NB/SB                                      | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   |
| Northgate SB                               | 27th St  |       |        |       | 5,600 | 5,020 | 2,610 |       | 4,590 | 380   | 170   | 2,580 |       |
| Northgate NB                               | 27th St  | 370   | 6,260  | 910   |       |       |       | 1,750 | 8,440 |       |       | 2,380 | 5,010 |
| Northgate Ave                              | Grand Av |       |        |       | 2,760 |       | 950   | 1,750 | 8,210 |       |       | 6,350 | 3,980 |
| Telegraph Ave                              | Grand Av | 3,650 | 3,860  | 1,950 | 1,040 | 3,020 | 1,350 | 1,170 | 7,940 | 1,920 | 860   | 5,330 | 1,370 |
| Broadway                                   | Grand Av | 2,540 | 6,620  | 2,150 | 910   | 3,420 | 1,450 | 1,390 | 7,620 | 990   | 670   | 3,770 | 530   |
| Harrison St                                | Grand Av | 140   | 10,520 | 7,130 | 20    | 3,940 | 1,130 | 1,490 | 6,790 | 1,390 | 2,320 | 3,680 | 220   |
| Telegraph Ave                              | 22nd St  | 320   | 5,500  |       |       | 5,170 | 390   |       |       |       | 780   | 100   | 3,660 |
| Broadway                                   | 22nd St  | 530   | 6,880  |       |       | 4,760 | 420   |       |       |       | 190   | 1,390 | 4,520 |
| Telegraph Ave                              | 21st St  |       | 4,440  | 750   | 1,260 | 4,730 |       | 480   | 140   | 360   |       |       |       |
| Broadway                                   | 21st St  |       | 5,080  | 280   | 420   | 4,560 |       | 1,240 | 990   | 2,660 | 300   |       | 900   |
| Telegraph Ave                              | 20th St  | 270   | 2,340  | 450   | 1,210 | 2,810 | 1,040 | 860   | 1,550 | 320   | 240   | 1,990 | 1,910 |
| Broadway                                   | 20th St  | 780   | 4,300  | 630   | 610   | 5,920 | 1,260 | 290   | 1,970 | 940   | 540   | 2,020 | 580   |
| Telegraph Ave                              | 19th St  | 840   | 1,270  |       |       | 2,000 | 1,300 |       |       |       | 380   | 4,310 | 1,770 |

| Existing-Maximum Office-PM |          |       |        |       |       |       |       |       |       |       |       |       |       |
|----------------------------|----------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| NB/SB                      | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   |
| Northgate SB               | 27th St  |       |        |       | 5,630 | 5,320 | 2,610 |       | 4,590 | 380   | 170   | 2,580 |       |
| Northgate NB               | 27th St  | 370   | 7,450  | 910   |       |       |       | 1,750 | 8,470 |       |       | 2,380 | 5,780 |
| Northgate Ave              | Grand Av |       |        |       | 3,060 |       | 950   | 1,750 | 8,320 |       |       | 6,870 | 5,170 |
| Telegraph Ave              | Grand Av | 4,880 | 4,490  | 3,150 | 1,070 | 3,050 | 1,350 | 1,170 | 8,160 | 2,110 | 980   | 5,810 | 1,780 |
| Broadway                   | Grand Av | 3,430 | 6,810  | 2,490 | 910   | 3,450 | 1,470 | 1,560 | 8,580 | 1,020 | 680   | 3,900 | 530   |
| Harrison St                | Grand Av | 140   | 10,730 | 7,390 | 20    | 3,940 | 1,190 | 1,830 | 7,450 | 1,530 | 2,320 | 3,790 | 220   |
| Telegraph Ave              | 22nd St  | 320   | 5,530  |       |       | 5,510 | 390   |       |       |       | 1,490 | 100   | 6,690 |
| Broadway                   | 22nd St  | 610   | 8,300  |       |       | 4,790 | 460   |       |       |       | 190   | 1,450 | 4,520 |
| Telegraph Ave              | 21st St  |       | 4,470  | 980   | 1,600 | 5,440 |       | 480   | 140   | 360   |       |       |       |
| Broadway                   | 21st St  |       | 5,160  | 280   | 420   | 4,590 |       | 2,660 | 1,600 | 6,000 | 300   |       | 900   |
| Telegraph Ave              | 20th St  | 270   | 2,410  | 450   | 1,330 | 3,240 | 1,200 | 980   | 1,550 | 320   | 240   | 3,010 | 1,980 |
| Broadway                   | 20th St  | 810   | 4,350  | 630   | 770   | 8,110 | 2,280 | 290   | 2,090 | 940   | 540   | 2,060 | 610   |
| Telegraph Ave              | 19th St  | 840   | 1,330  |       |       | 2,170 | 1,560 |       |       |       | 380   | 6,120 | 1,780 |

| 2040-No Project-PM |          |       |        |       |       |       |       |       |        |       |       |       |       |
|--------------------|----------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| NB/SB              | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT    | EBR   | WBL   | WBT   | WBR   |
| Northgate SB       | 27th St  |       |        |       | 7,600 | 5,200 | 3,200 |       | 6,000  | 500   | 300   | 3,100 |       |
| Northgate NB       | 27th St  | 500   | 6,100  | 1,800 |       |       |       | 2,100 | 11,500 |       |       | 2,900 | 7,100 |
| Northgate Ave      | Grand Av |       |        |       | 2,800 |       | 1,400 | 2,500 | 12,200 |       |       | 9,900 | 4,100 |
| Telegraph Ave      | Grand Av | 3,200 | 4,600  | 1,500 | 1,200 | 3,400 | 1,900 | 1,300 | 11,700 | 2,100 | 700   | 8,900 | 1,200 |
| Broadway           | Grand Av | 2,700 | 9,000  | 2,300 | 1,400 | 3,500 | 1,800 | 1,400 | 11,400 | 1,400 | 1,000 | 6,300 | 800   |
| Harrison St        | Grand Av | 400   | 16,700 | 8,600 | 100   | 6,500 | 1,900 | 2,500 | 8,600  | 2,500 | 2,700 | 6,000 | 300   |
| Telegraph Ave      | 22nd St  | 400   | 7,300  |       |       | 5,400 | 500   |       |        |       | 400   | 200   | 1,800 |
| Broadway           | 22nd St  | 400   | 8,300  |       |       | 5,100 | 800   |       |        |       | 400   | 1,400 | 5,700 |
| Telegraph Ave      | 21st St  |       | 6,200  | 300   | 500   | 5,400 |       | 600   | 200    | 500   |       |       |       |
| Broadway           | 21st St  |       | 5,700  | 400   | 500   | 5,100 |       | 300   | 700    | 400   | 500   |       | 2,600 |
| Telegraph Ave      | 20th St  | 400   | 3,800  | 600   | 1,300 | 3,500 | 1,100 | 600   | 2,000  | 400   | 300   | 1,700 | 2,100 |
| Broadway           | 20th St  | 900   | 4,800  | 800   | 600   | 4,900 | 700   | 400   | 2,300  | 1,200 | 1,100 | 2,400 | 700   |
| Telegraph Ave      | 19th St  | 1,000 | 2,000  |       |       | 2,700 | 1,500 |       |        |       | 500   | 3,300 | 2,900 |

| 2040-Residential and Office Mix FDP-PM |          |       |        |       |       |       |       |       |        |       |       |        |       |
|--|----------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|
| NB/SB                                  | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT    | EBR   | WBL   | WBT    | WBR   |
| Northgate SB                           | 27th St  |       |        |       | 7,680 | 5,920 | 3,200 |       | 6,000  | 500   | 300   | 3,100  |       |
| Northgate NB                           | 27th St  | 500   | 6,920  | 1,800 |       |       |       | 2,100 | 11,580 |       |       | 2,900  | 7,630 |
| Northgate Ave                          | Grand Av |       |        |       | 3,520 |       | 1,400 | 2,500 | 12,480 |       |       | 10,250 | 4,920 |
| Telegraph Ave                          | Grand Av | 4,040 | 5,030  | 2,400 | 1,280 | 3,480 | 1,900 | 1,300 | 12,250 | 2,550 | 970   | 9,230  | 1,490 |
| Broadway                               | Grand Av | 3,320 | 9,120  | 2,530 | 1,400 | 3,550 | 1,850 | 1,530 | 12,040 | 1,430 | 1,040 | 6,600  | 800   |
| Harrison St                            | Grand Av | 400   | 16,840 | 8,790 | 100   | 6,500 | 2,060 | 2,730 | 9,030  | 2,600 | 2,700 | 6,250  | 300   |
| Telegraph Ave                          | 22nd St  | 400   | 7,400  |       |       | 6,200 | 500   |       |        |       | 880   | 200    | 3,870 |
| Broadway                               | 22nd St  | 580   | 9,270  |       |       | 5,130 | 890   |       |        |       | 400   | 1,570  | 5,700 |
| Telegraph Ave                          | 21st St  |       | 6,300  | 840   | 1,300 | 5,880 |       | 600   | 200    | 500   |       |        |       |
| Broadway                               | 21st St  |       | 5,880  | 400   | 500   | 5,130 |       | 1,270 | 1,110  | 2,680 | 500   |        | 2,600 |
| Telegraph Ave                          | 20th St  | 400   | 3,980  | 600   | 1,380 | 3,790 | 1,210 | 910   | 2,000  | 400   | 300   | 2,380  | 2,250 |
| Broadway                               | 20th St  | 950   | 4,960  | 800   | 730   | 6,400 | 1,380 | 400   | 2,380  | 1,200 | 1,100 | 2,500  | 720   |
| Telegraph Ave                          | 19th St  | 1,000 | 2,140  |       |       | 2,810 | 1,680 |       |        |       | 500   | 4,540  | 2,940 |

| 2040-Maximum Office-PM |          |       |        |       |       |       |       |       |        |       |       |        |       |
|------------------------|----------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|
| NB/SB                  | EB/WB    | NBL   | NBT    | NBR   | SBL   | SBT   | SBR   | EBL   | EBT    | EBR   | WBL   | WBT    | WBR   |
| Northgate SB           | 27th St  |       |        |       | 7,710 | 6,220 | 3,200 |       | 6,000  | 500   | 300   | 3,100  |       |
| Northgate NB           | 27th St  | 500   | 8,110  | 1,800 |       |       |       | 2,100 | 11,610 |       |       | 2,900  | 8,400 |
| Northgate Ave          | Grand Av |       |        |       | 3,820 |       | 1,400 | 2,500 | 12,590 |       |       | 10,770 | 6,110 |
| Telegraph Ave          | Grand Av | 5,270 | 5,660  | 3,600 | 1,310 | 3,510 | 1,900 | 1,300 | 12,470 | 2,740 | 1,090 | 9,710  | 1,900 |
| Broadway               | Grand Av | 4,210 | 9,310  | 2,870 | 1,400 | 3,580 | 1,870 | 1,700 | 13,000 | 1,460 | 1,050 | 6,730  | 800   |
| Harrison St            | Grand Av | 400   | 17,050 | 9,050 | 100   | 6,500 | 2,120 | 3,070 | 9,690  | 2,740 | 2,700 | 6,360  | 300   |
| Telegraph Ave          | 22nd St  | 400   | 7,430  |       |       | 6,540 | 500   |       |        |       | 1,590 | 200    | 6,900 |
| Broadway               | 22nd St  | 660   | 10,690 |       |       | 5,160 | 930   |       |        |       | 400   | 1,630  | 5,700 |
| Telegraph Ave          | 21st St  |       | 6,330  | 1,070 | 1,640 | 6,590 |       | 600   | 200    | 500   |       |        |       |
| Broadway               | 21st St  |       | 5,960  | 400   | 500   | 5,160 |       | 2,690 | 1,720  | 6,020 | 500   |        | 2,600 |
| Telegraph Ave          | 20th St  | 400   | 4,050  | 600   | 1,500 | 4,220 | 1,370 | 1,030 | 2,000  | 400   | 300   | 3,400  | 2,320 |
| Broadway               | 20th St  | 980   | 5,010  | 800   | 890   | 8,590 | 2,400 | 400   | 2,500  | 1,200 | 1,100 | 2,540  | 750   |
| Telegraph Ave          | 19th St  | 1,000 | 2,200  |       |       | 2,980 | 1,940 |       |        |       | 500   | 6,350  | 2,950 |



| 2016-No Project-AM  |              |     |     |     |     |      |     |     |     |     |     |     |     |
|---------------------|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |     |     | 644 | 1020 | 363 |     | 226 | 16  | 13  | 143 |     |
| Northgate Avenue NB | 27th Street  | 14  | 307 | 11  |     |      |     | 165 | 705 |     |     | 142 | 307 |
| Northgate Avenue    | Grand Avenue |     |     |     | 619 |      | 198 | 143 | 460 |     |     | 449 | 115 |
| Telegraph Avenue    | Grand Avenue | 102 | 202 | 49  | 71  | 284  | 72  | 114 | 563 | 312 | 53  | 374 | 57  |
| Broadway            | Grand Avenue | 99  | 358 | 124 | 50  | 307  | 55  | 57  | 529 | 75  | 101 | 344 | 25  |
| Harrison Street     | Grand Avenue | 53  | 599 | 253 | 9   | 791  | 80  | 56  | 168 | 109 | 453 | 548 | 120 |
| Telegraph Avenue    | 22nd Street  | 35  | 301 |     |     | 608  | 38  |     |     |     | 35  | 2   | 44  |
| Broadway            | 22nd Street  | 16  | 375 |     |     | 473  | 11  |     |     |     | 13  | 25  | 206 |
| Telegraph Avenue    | 21st Street  |     | 304 | 20  | 100 | 444  |     | 52  | 16  | 43  |     |     |     |
| Broadway            | 21st Street  |     | 348 | 32  | 40  | 453  |     | 5   | 76  | 13  | 23  |     | 44  |
| Telegraph Avenue    | 20th Street  | 15  | 160 | 16  | 183 | 209  | 79  | 43  | 110 | 14  | 10  | 101 | 134 |
| Broadway            | 20th Street  | 61  | 296 | 53  | 36  | 353  | 48  | 19  | 227 | 60  | 36  | 138 | 76  |
| Telegraph Avenue    | 19th Street  | 100 | 91  |     |     | 135  | 90  |     |     |     | 24  | 140 | 105 |

| 2016-All Office FDP-AM |              |     |     |     |     |      |     |     |     |     |     |     |     |
|------------------------|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                  | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB    | 27th Street  |     |     |     | 671 | 1259 | 363 |     | 226 | 16  | 13  | 143 |     |
| Northgate Avenue NB    | 27th Street  | 14  | 325 | 11  |     |      |     | 165 | 732 |     |     | 142 | 319 |
| Northgate Avenue       | Grand Avenue |     |     |     | 858 |      | 198 | 143 | 552 |     |     | 457 | 133 |
| Telegraph Avenue       | Grand Avenue | 121 | 212 | 98  | 97  | 310  | 72  | 114 | 744 | 462 | 145 | 381 | 63  |
| Broadway               | Grand Avenue | 112 | 361 | 129 | 50  | 324  | 72  | 59  | 543 | 76  | 113 | 446 | 25  |
| Harrison Street        | Grand Avenue | 53  | 602 | 257 | 9   | 791  | 131 | 61  | 178 | 111 | 453 | 634 | 120 |
| Telegraph Avenue       | 22nd Street  | 35  | 333 |     |     | 876  | 38  |     |     |     | 45  | 2   | 90  |
| Broadway               | 22nd Street  | 75  | 396 |     |     | 474  | 40  |     |     |     | 13  | 80  | 206 |
| Telegraph Avenue       | 21st Street  |     | 336 | 199 | 368 | 454  |     | 52  | 16  | 43  |     |     |     |
| Broadway               | 21st Street  |     | 407 | 32  | 40  | 454  |     | 26  | 85  | 63  | 23  |     | 44  |
| Telegraph Avenue       | 20th Street  | 15  | 220 | 16  | 185 | 215  | 81  | 145 | 110 | 14  | 10  | 116 | 183 |
| Broadway               | 20th Street  | 78  | 345 | 53  | 39  | 386  | 63  | 19  | 229 | 60  | 36  | 170 | 86  |
| Telegraph Avenue       | 19th Street  | 100 | 139 |     |     | 137  | 94  |     |     |     | 24  | 167 | 117 |



| 2040-No Project-AM  |              |     |     |     |     |      |     |     |     |     |     |     |     |
|---------------------|--------------|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |     |     | 820 | 1190 | 430 |     | 280 | 20  | 20  | 170 |     |
| Northgate Avenue NB | 27th Street  | 20  | 430 | 20  |     |      |     | 200 | 900 |     |     | 170 | 450 |
| Northgate Avenue    | Grand Avenue |     |     |     | 730 |      | 260 | 210 | 770 |     |     | 840 | 190 |
| Telegraph Avenue    | Grand Avenue | 180 | 210 | 60  | 110 | 320  | 90  | 130 | 930 | 350 | 70  | 740 | 80  |
| Broadway            | Grand Avenue | 120 | 480 | 140 | 70  | 400  | 80  | 70  | 920 | 80  | 120 | 710 | 50  |
| Harrison Street     | Grand Avenue | 60  | 890 | 340 | 10  | 1120 | 90  | 60  | 350 | 130 | 580 | 930 | 160 |
| Telegraph Avenue    | 22nd Street  | 50  | 390 |     |     | 690  | 50  |     |     |     | 40  | 10  | 50  |
| Broadway            | 22nd Street  | 30  | 430 |     |     | 590  | 20  |     |     |     | 30  | 30  | 310 |
| Telegraph Avenue    | 21st Street  |     | 390 | 30  | 110 | 530  |     | 70  | 30  | 70  |     |     |     |
| Broadway            | 21st Street  |     | 390 | 50  | 70  | 560  |     | 10  | 120 | 20  | 60  |     | 70  |
| Telegraph Avenue    | 20th Street  | 20  | 200 | 20  | 210 | 280  | 100 | 50  | 200 | 20  | 20  | 110 | 160 |
| Broadway            | 20th Street  | 70  | 340 | 70  | 50  | 490  | 50  | 30  | 320 | 80  | 50  | 170 | 80  |
| Telegraph Avenue    | 19th Street  | 120 | 100 |     |     | 220  | 100 |     |     |     | 30  | 160 | 150 |

| 2040-All Office FDP-AM |              |     |     |     |     |      |     |     |      |     |     |      |     |
|------------------------|--------------|-----|-----|-----|-----|------|-----|-----|------|-----|-----|------|-----|
| NB/SB                  | EB/WB        | NBL | NBT | NBR | SBL | SBT  | SBR | EBL | EBT  | EBR | WBL | WBT  | WBR |
| Northgate Avenue SB    | 27th Street  |     |     |     | 847 | 1429 | 430 |     | 280  | 20  | 20  | 170  |     |
| Northgate Avenue NB    | 27th Street  | 20  | 448 | 20  |     |      |     | 200 | 927  |     |     | 170  | 462 |
| Northgate Avenue       | Grand Avenue |     |     |     | 969 |      | 260 | 210 | 862  |     |     | 848  | 208 |
| Telegraph Avenue       | Grand Avenue | 199 | 220 | 109 | 136 | 346  | 90  | 130 | 1111 | 500 | 162 | 747  | 86  |
| Broadway               | Grand Avenue | 133 | 483 | 145 | 70  | 417  | 97  | 72  | 934  | 81  | 132 | 812  | 50  |
| Harrison Street        | Grand Avenue | 60  | 893 | 344 | 10  | 1120 | 141 | 65  | 360  | 132 | 580 | 1016 | 160 |
| Telegraph Avenue       | 22nd Street  | 50  | 422 |     |     | 958  | 50  |     |      |     | 50  | 10   | 96  |
| Broadway               | 22nd Street  | 89  | 451 |     |     | 591  | 49  |     |      |     | 30  | 85   | 310 |
| Telegraph Avenue       | 21st Street  |     | 422 | 209 | 378 | 540  |     | 70  | 30   | 70  |     |      |     |
| Broadway               | 21st Street  |     | 449 | 50  | 70  | 561  |     | 31  | 129  | 70  | 60  |      | 70  |
| Telegraph Avenue       | 20th Street  | 20  | 260 | 20  | 212 | 286  | 102 | 152 | 200  | 20  | 20  | 125  | 209 |
| Broadway               | 20th Street  | 87  | 389 | 70  | 53  | 523  | 65  | 30  | 322  | 80  | 50  | 202  | 90  |
| Telegraph Avenue       | 19th Street  | 120 | 148 |     |     | 222  | 104 |     |      |     | 30  | 187  | 162 |

| 2016-No Project-PM  |              |     |      |     |     |     |     |     |     |     |     |     |     |
|---------------------|--------------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT  | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |      |     | 552 | 430 | 261 |     | 459 | 38  | 17  | 258 |     |
| Northgate Avenue NB | 27th Street  | 37  | 544  | 91  |     |     |     | 175 | 836 |     |     | 238 | 448 |
| Northgate Avenue    | Grand Avenue |     |      |     | 204 |     | 95  | 175 | 793 |     |     | 600 | 316 |
| Telegraph Avenue    | Grand Avenue | 281 | 343  | 105 | 96  | 294 | 135 | 117 | 739 | 147 | 59  | 500 | 108 |
| Broadway            | Grand Avenue | 192 | 650  | 192 | 91  | 337 | 140 | 126 | 698 | 96  | 63  | 347 | 53  |
| Harrison Street     | Grand Avenue | 14  | 1038 | 694 | 2   | 394 | 97  | 126 | 636 | 129 | 232 | 343 | 22  |
| Telegraph Avenue    | 22nd Street  | 32  | 540  |     |     | 437 | 39  |     |     |     | 30  | 10  | 159 |
| Broadway            | 22nd Street  | 35  | 591  |     |     | 473 | 33  |     |     |     | 19  | 122 | 452 |
| Telegraph Avenue    | 21st Street  |     | 434  | 21  | 46  | 425 |     | 48  | 14  | 36  |     |     |     |
| Broadway            | 21st Street  |     | 490  | 28  | 42  | 453 |     | 27  | 58  | 38  | 30  |     | 90  |
| Telegraph Avenue    | 20th Street  | 27  | 216  | 45  | 113 | 252 | 93  | 55  | 155 | 32  | 24  | 131 | 176 |
| Broadway            | 20th Street  | 73  | 414  | 63  | 48  | 442 | 58  | 29  | 189 | 94  | 54  | 192 | 56  |
| Telegraph Avenue    | 19th Street  | 84  | 113  |     |     | 189 | 112 |     |     |     | 38  | 307 | 173 |

| 2016-All Office FDP-PM |              |     |      |     |     |     |     |     |     |     |     |     |     |
|------------------------|--------------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| NB/SB                  | EB/WB        | NBL | NBT  | NBR | SBL | SBT | SBR | EBL | EBT | EBR | WBL | WBT | WBR |
| Northgate Avenue SB    | 27th Street  |     |      |     | 559 | 493 | 261 |     | 459 | 38  | 17  | 258 |     |
| Northgate Avenue NB    | 27th Street  | 37  | 660  | 91  |     |     |     | 175 | 843 |     |     | 238 | 523 |
| Northgate Avenue       | Grand Avenue |     |      |     | 267 |     | 95  | 175 | 817 |     |     | 649 | 432 |
| Telegraph Avenue       | Grand Avenue | 399 | 404  | 225 | 103 | 301 | 135 | 117 | 787 | 186 | 84  | 547 | 148 |
| Broadway               | Grand Avenue | 278 | 668  | 225 | 91  | 342 | 145 | 144 | 787 | 100 | 66  | 375 | 53  |
| Harrison Street        | Grand Avenue | 14  | 1057 | 719 | 2   | 394 | 111 | 158 | 697 | 143 | 232 | 366 | 22  |
| Telegraph Avenue       | 22nd Street  | 32  | 549  |     |     | 508 | 39  |     |     |     | 97  | 10  | 449 |
| Broadway               | 22nd Street  | 51  | 728  |     |     | 477 | 41  |     |     |     | 19  | 136 | 452 |
| Telegraph Avenue       | 21st Street  |     | 443  | 68  | 117 | 492 |     | 48  | 14  | 36  |     |     |     |
| Broadway               | 21st Street  |     | 506  | 28  | 42  | 457 |     | 164 | 115 | 356 | 30  |     | 90  |
| Telegraph Avenue       | 20th Street  | 27  | 232  | 45  | 124 | 293 | 108 | 82  | 155 | 32  | 24  | 226 | 189 |
| Broadway               | 20th Street  | 78  | 427  | 63  | 65  | 652 | 153 | 29  | 200 | 94  | 54  | 200 | 59  |
| Telegraph Avenue       | 19th Street  | 84  | 126  |     |     | 205 | 137 |     |     |     | 38  | 480 | 176 |

| 2040-No Project-PM  |              |     |      |     |     |     |     |     |      |     |     |     |     |
|---------------------|--------------|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|
| NB/SB               | EB/WB        | NBL | NBT  | NBR | SBL | SBT | SBR | EBL | EBT  | EBR | WBL | WBT | WBR |
| Northgate Avenue SB | 27th Street  |     |      |     | 760 | 520 | 320 |     | 600  | 50  | 30  | 310 |     |
| Northgate Avenue NB | 27th Street  | 50  | 610  | 180 |     |     |     | 210 | 1150 |     |     | 290 | 710 |
| Northgate Avenue    | Grand Avenue |     |      |     | 280 |     | 140 | 250 | 1220 |     |     | 990 | 410 |
| Telegraph Avenue    | Grand Avenue | 320 | 460  | 150 | 120 | 340 | 190 | 130 | 1170 | 210 | 70  | 890 | 120 |
| Broadway            | Grand Avenue | 270 | 900  | 230 | 140 | 350 | 180 | 140 | 1140 | 140 | 100 | 630 | 80  |
| Harrison Street     | Grand Avenue | 40  | 1670 | 860 | 10  | 650 | 190 | 250 | 860  | 250 | 270 | 600 | 30  |
| Telegraph Avenue    | 22nd Street  | 40  | 730  |     |     | 540 | 50  |     |      |     | 40  | 20  | 180 |
| Broadway            | 22nd Street  | 40  | 830  |     |     | 510 | 80  |     |      |     | 40  | 140 | 570 |
| Telegraph Avenue    | 21st Street  |     | 620  | 30  | 50  | 540 |     | 60  | 20   | 50  |     |     |     |
| Broadway            | 21st Street  |     | 570  | 40  | 50  | 510 |     | 30  | 70   | 40  | 50  |     | 260 |
| Telegraph Avenue    | 20th Street  | 40  | 380  | 60  | 130 | 350 | 110 | 60  | 200  | 40  | 30  | 170 | 210 |
| Broadway            | 20th Street  | 90  | 480  | 80  | 60  | 490 | 70  | 40  | 230  | 120 | 110 | 240 | 70  |
| Telegraph Avenue    | 19th Street  | 100 | 200  |     |     | 270 | 150 |     |      |     | 50  | 330 | 290 |

| 2040-All Office FDP-PM |              |     |      |     |     |     |     |     |      |     |     |      |     |
|------------------------|--------------|-----|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|
| NB/SB                  | EB/WB        | NBL | NBT  | NBR | SBL | SBT | SBR | EBL | EBT  | EBR | WBL | WBT  | WBR |
| Northgate Avenue SB    | 27th Street  |     |      |     | 767 | 583 | 320 |     | 600  | 50  | 30  | 310  |     |
| Northgate Avenue NB    | 27th Street  | 50  | 726  | 180 |     |     |     | 210 | 1157 |     |     | 290  | 785 |
| Northgate Avenue       | Grand Avenue |     |      |     | 343 |     | 140 | 250 | 1244 |     |     | 1039 | 526 |
| Telegraph Avenue       | Grand Avenue | 438 | 521  | 270 | 127 | 347 | 190 | 130 | 1218 | 249 | 95  | 937  | 160 |
| Broadway               | Grand Avenue | 356 | 918  | 263 | 140 | 355 | 185 | 158 | 1229 | 144 | 103 | 658  | 80  |
| Harrison Street        | Grand Avenue | 40  | 1689 | 885 | 10  | 650 | 204 | 282 | 921  | 264 | 270 | 623  | 30  |
| Telegraph Avenue       | 22nd Street  | 40  | 739  |     |     | 611 | 50  |     |      |     | 107 | 20   | 470 |
| Broadway               | 22nd Street  | 56  | 967  |     |     | 514 | 88  |     |      |     | 40  | 154  | 570 |
| Telegraph Avenue       | 21st Street  |     | 629  | 77  | 121 | 607 |     | 60  | 20   | 50  |     |      |     |
| Broadway               | 21st Street  |     | 586  | 40  | 50  | 514 |     | 167 | 127  | 358 | 50  |      | 260 |
| Telegraph Avenue       | 20th Street  | 40  | 396  | 60  | 141 | 391 | 125 | 87  | 200  | 40  | 30  | 265  | 223 |
| Broadway               | 20th Street  | 95  | 493  | 80  | 77  | 700 | 165 | 40  | 241  | 120 | 110 | 248  | 73  |
| Telegraph Avenue       | 19th Street  | 100 | 213  |     |     | 286 | 175 |     |      |     | 50  | 503  | 293 |

## Traffic Noise Output

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Demolition Period Hauling Truck Trips 245 per day, 31 per hour.

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |      |
|-----------------------------------|------|
| Automobile volume (v/h):          | 0.0  |
| Average automobile speed (mph):   | 0.0  |
| Medium truck volume (v/h):        | 0.0  |
| Average medium truck speed (mph): | 0.0  |
| Heavy truck volume (v/h):         | 31.0 |
| Average heavy truck speed (mph):  | 30.0 |
| Bus volume (v/h):                 | 0.0  |
| Average bus speed (mph):          | 0.0  |
| Motorcycle volume (v/h):          | 0.0  |
| Average Motorcycle speed (mph):   | 0.0  |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

50 Ft

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.8

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Grading period hauling truck trips, 103 per day, 13 per hour

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |      |
|-----------------------------------|------|
| Automobile volume (v/h):          | 0.0  |
| Average automobile speed (mph):   | 0.0  |
| Medium truck volume (v/h):        | 0.0  |
| Average medium truck speed (mph): | 0.0  |
| Heavy truck volume (v/h):         | 13.0 |
| Average heavy truck speed (mph):  | 30.0 |
| Bus volume (v/h):                 | 0.0  |
| Average bus speed (mph):          | 0.0  |
| Motorcycle volume (v/h):          | 0.0  |
| Average Motorcycle speed (mph):   | 0.0  |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

50 Ft

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.0

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

21st Street west of Broadway PM Peak Hour Max Office Noise from project

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |       |
|-----------------------------------|-------|
| Automobile volume (v/h):          | 858.0 |
| Average automobile speed (mph):   | 30.0  |
| Medium truck volume (v/h):        | 36.0  |
| Average medium truck speed (mph): | 30.0  |
| Heavy truck volume (v/h):         | 9.0   |
| Average heavy truck speed (mph):  | 30.0  |
| Bus volume (v/h):                 | 0.0   |
| Average bus speed (mph):          | 0.0   |
| Motorcycle volume (v/h):          | 0.0   |
| Average Motorcycle speed (mph):   | 0.0   |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

person

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.5

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Grand Avenue east of Northgate Avenue AM Peak Hour Max Office Noise from project+cumulative projects

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |        |
|-----------------------------------|--------|
| Automobile volume (v/h):          | 1387.0 |
| Average automobile speed (mph):   | 30.0   |
| Medium truck volume (v/h):        | 58.0   |
| Average medium truck speed (mph): | 30.0   |
| Heavy truck volume (v/h):         | 15.0   |
| Average heavy truck speed (mph):  | 30.0   |
| Bus volume (v/h):                 | 0.0    |
| Average bus speed (mph):          | 0.0    |
| Motorcycle volume (v/h):          | 0.0    |
| Average Motorcycle speed (mph):   | 0.0    |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

person

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.6



\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Grand Avenue east of Northgate Avenue AM Peak Hour Max Office Noise from cumulative projects

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |       |
|-----------------------------------|-------|
| Automobile volume (v/h):          | 843.0 |
| Average automobile speed (mph):   | 30.0  |
| Medium truck volume (v/h):        | 35.0  |
| Average medium truck speed (mph): | 30.0  |
| Heavy truck volume (v/h):         | 9.0   |
| Average heavy truck speed (mph):  | 30.0  |
| Bus volume (v/h):                 | 0.0   |
| Average bus speed (mph):          | 0.0   |
| Motorcycle volume (v/h):          | 0.0   |
| Average Motorcycle speed (mph):   | 0.0   |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

person

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.5

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Grand Avenue west of Telegraph Avenue PM Peak Hour Max Office Noise from project+cumulative projects

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |        |
|-----------------------------------|--------|
| Automobile volume (v/h):          | 1349.0 |
| Average automobile speed (mph):   | 30.0   |
| Medium truck volume (v/h):        | 57.0   |
| Average medium truck speed (mph): | 30.0   |
| Heavy truck volume (v/h):         | 14.0   |
| Average heavy truck speed (mph):  | 30.0   |
| Bus volume (v/h):                 | 0.0    |
| Average bus speed (mph):          | 0.0    |
| Motorcycle volume (v/h):          | 0.0    |
| Average Motorcycle speed (mph):   | 0.0    |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

person

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.5

\*\*\*\*\* CASE INFORMATION \*\*\*\*\*

\*\*\*\*\* Results calculated with TNM Version 2.5 \*\*\*\*\*

Grand Avenue west of Telegraph Avenue PM Peak Hour Max Office Noise from cumulative projects

\*\*\*\*\* TRAFFIC VOLUME/SPEED INFORMATION \*\*\*\*\*

|                                   |       |
|-----------------------------------|-------|
| Automobile volume (v/h):          | 941.0 |
| Average automobile speed (mph):   | 30.0  |
| Medium truck volume (v/h):        | 40.0  |
| Average medium truck speed (mph): | 30.0  |
| Heavy truck volume (v/h):         | 10.0  |
| Average heavy truck speed (mph):  | 30.0  |
| Bus volume (v/h):                 | 0.0   |
| Average bus speed (mph):          | 0.0   |
| Motorcycle volume (v/h):          | 0.0   |
| Average Motorcycle speed (mph):   | 0.0   |

\*\*\*\*\* TERRAIN SURFACE INFORMATION \*\*\*\*\*

Terrain surface: hard

\*\*\*\*\* RECEIVER INFORMATION \*\*\*\*\*

DESCRIPTION OF RECEIVER # 1

person

Distance from center of 12-ft wide, single lane roadway (ft): 50.0  
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0



## **APPENDIX C.2: Non CEQA Transportation Assessment**



## MEMORANDUM

Date: November 29, 2017  
To: Carla Violet, UPP  
From: Rob Rees and Ron Ramos  
**Subject: 2100 Telegraph Avenue – Non-CEQA Transportation Assessment**

OK16-0114

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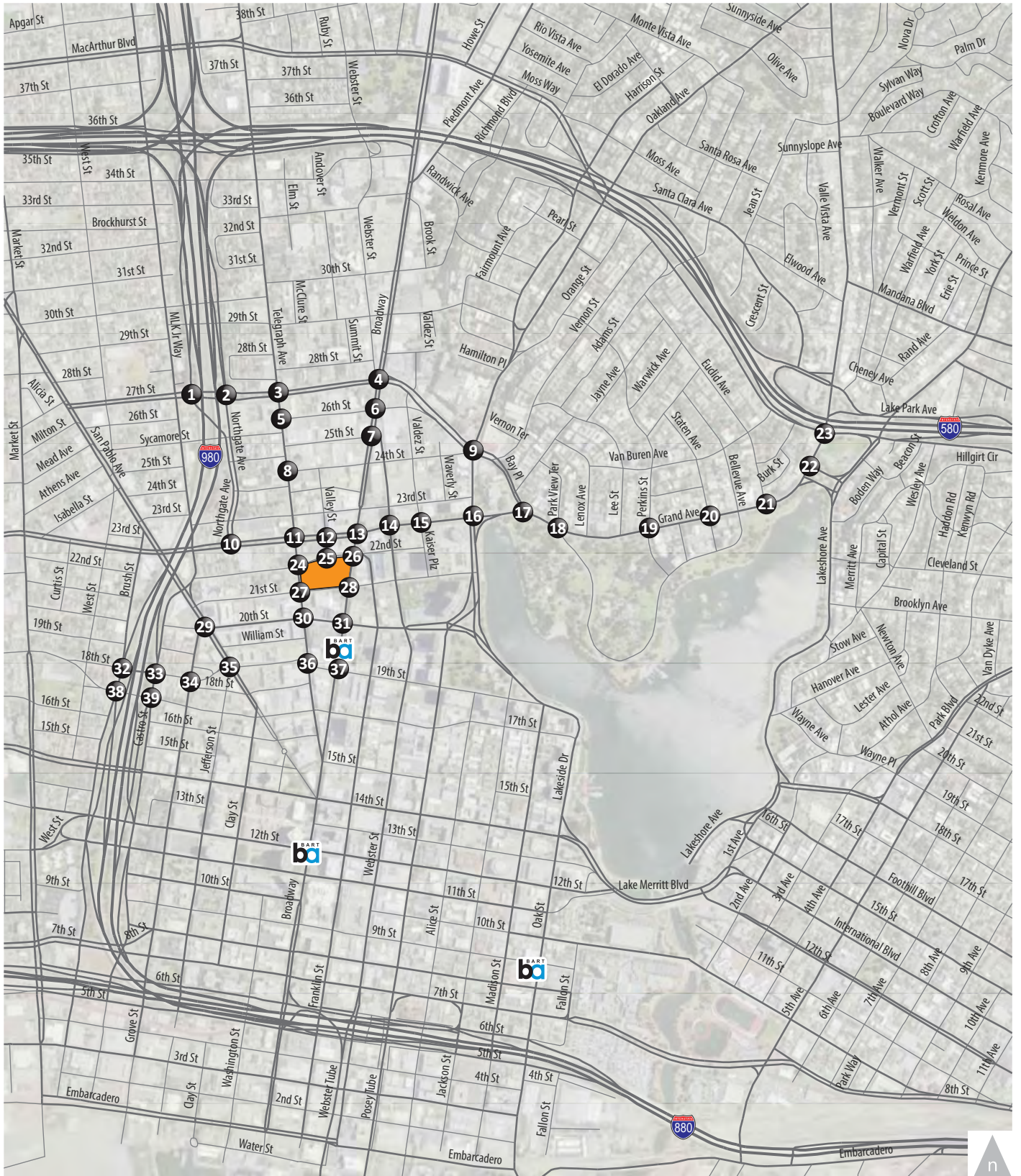
This memorandum discusses transportation-related topics that are not considerations under CEQA but are evaluated to inform decision makers and the public about these issues. Some of the information in the CEQA document is repeated in this technical memorandum to provide context for the non-CEQA analysis. The information provided in this technical memorandum is based on the City of Oakland guidance published in October 2016. Sections in this memorandum include:

- Study Scenarios Analyzed (page 1)
- Existing Conditions (Page 3)
- Project Transportation Characteristics (Page 12)
- Existing Plus Project Conditions (Page 16)
- Infrastructure Recommendations (Page 26)
- CMP and MTS Roadway Segments (Page 37)

### STUDY SCENARIOS ANALYZED

The analysis evaluates the transportation-related impacts of the project. **Figure 1** shows the Project study Area. Conditions are assessed for the following scenarios:

- **Existing.** Represents the existing setting at the time of the Notice of Preparation.
- **Existing Plus Project.** Represents the existing setting at the time of the Notice of Preparation plus traffic generated after completion of the project.
- **2020 No Project (CMP Analysis Only).** Future conditions with planned population and employment growth, and planned transportation system changes, for the year 2040. This scenario assumes no changes to the project site.



**LEGEND**

- Project Site
- # Study Intersection



Figure 1

**Project Study Area and Study Intersections**





- **2020 Plus Project (CMP Analysis Only).** 2040 No Project conditions plus traffic generated after completion of the proposed project.
- **2040 No Project (CMP Analysis Only).** Future conditions with planned population and employment growth, and planned transportation system changes, for the year 2040. This scenario assumes no changes to the project site.
- **2040 Plus Project (CMP Analysis Only).** 2040 No Project conditions plus traffic generated after completion of the proposed project.

## EXISTING CONDITIONS

This section addresses the following topics:

- Existing Intersections
- Existing Transit

### EXISTING INTERSECTIONS

Intersections are identified where the project would increase traffic volumes by a) 100 or more peak-hour trips; b) 50 or more trips where the intersection operates at LOS D, E, or F today; or c) 10 or more trips at the stop-controlled approach to side-street stop-controlled intersection.

Counts at 39 intersections in the vicinity of the project site were collected during the weekday morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) commute periods to define Existing conditions. These time periods were selected because traffic generated by the project, in combination with background traffic, is expected to represent typical worst traffic conditions. The study intersections are listed below and shown on Figure 1 (intersections under Caltrans jurisdiction are noted by #):

1. Northgate Avenue/1-980 Off-Ramp/27th Street #
2. Northgate Avenue/I-980 On-Ramp/27th Street #
3. Telegraph Avenue/27th Street
4. Broadway/27th Street
5. Telegraph Avenue/26th Street
6. Broadway/26th Street
7. Broadway/25th Street
8. Telegraph Avenue/24th Street
9. 24th Street/Harrison Street/27th Street
10. Grand Avenue/Northgate Avenue
11. Telegraph Avenue/Grand Avenue
12. Valley Street/Grand Avenue
13. Broadway/Grand Avenue
14. Webster Street/Grand Avenue



15. Valdez Street/ Grand Avenue
16. Harrison Street/Grand Avenue
17. Bay Place/ Grand Avenue
18. Bellevue Avenue/Park View Terrace/Grand Avenue
19. Perkins Street/Grand Avenue
20. Staten Avenue/Grand Avenue
21. Euclid Avenue/ Grand Avenue
22. El Embarcadero/Grand Avenue
23. MacArthur Boulevard/ Grand Avenue
24. Telegraph Avenue/22nd Street
25. Valley Street/22nd Street
26. Broadway/22nd Street
27. Telegraph Avenue/21st Street
28. Broadway/21st Street
29. MLK Jr. Way/San Pablo Avenue/20th Street
30. Telegraph Avenue/20th Street
31. Broadway/20th Street
32. Brush Street/18th Street
33. Castro Street/18th Street/I-980 NB On-Ramp
34. MLK Jr. Way/18th Street
35. Jefferson Street/San Pablo Avenue/19th Street
36. Telegraph Avenue/19th Street
37. Broadway/19th Street
38. Brush Street/I-980 On-Ramp/17th Street #
39. I-980 Off-Ramp/Castro Street/17th Street #

The intersection vehicle and bicycle turning movement counts, as well as pedestrian counts, were collected on weekdays in May and September 2016. The count data were collected on clear days, while area schools were in normal session. Within the AM and PM peak periods, the peak hours (i.e., the hour with the highest traffic volumes observed in the study area) are from 8:00 to 9:00 AM (AM peak hour) and from 4:45 to 5:45 PM (PM peak hour). **Attachment A** the existing AM and PM peak hour vehicle, bicycle, and pedestrian volumes; and the intersection lane configurations and traffic control.

Field reconnaissance was performed at each intersection to identify intersection lane configurations and signal operations data. Intersection operations were also observed at the study intersections. In addition, the City of Oakland provided signal timing data for the signalized study intersections.

### **Intersection Level of Service Methodology**

Intersection operations are described using the term "Level of Service" (LOS). Level of Service is a qualitative description of traffic operations from the vehicle driver perspective and consists of the delay experienced by the driver at the intersection. It ranges from LOS A, with no congestion and



little delay, to LOS F, with excessive congestion and delays. Different methodologies are used to assess signalized and unsignalized (stop-controlled) intersections.

### *Signalized Intersection*

At signalized intersections, operations are evaluated using the methodology described in the 2010 *Highway Capacity Manual* (HCM) and the Synchro traffic analysis software program. This methodology uses various intersection characteristics, such as traffic volumes, lane geometries, and signal timing parameters, to estimate average control delays and assign an LOS. Control delay is defined as the delay associated with deceleration, stopping, moving up in the queue, and acceleration experienced by drivers at an intersection. **Table 1**, provides a description of various LOS and the corresponding ranges of delays for signalized intersections.

### *Unsignalized Intersections*

At unsignalized intersection, LOS is also analyzed using the 2010 HCM and Synchro software. Delay is calculated for movements that are controlled by a stop sign or that must yield the right-of-way. This study reports delay and corresponding LOS for the approach with the highest delay and the whole intersection. LOS ranges for unsignalized intersections are shown in Table 1. They are lower than delay ranges for signalized intersections because drivers will tolerate more delay at signals.

### **Intersection Operations**

This study evaluated existing traffic operations for the weekday AM and PM peak hours at the study intersections. The existing vehicle, bicycle, and pedestrian volumes were used with the existing lane configurations and signal timing parameters as inputs into the LOS calculations to evaluate current operations. **Table 2** summarizes the intersection analysis results. **Attachment B** provides the detailed intersection LOS calculation worksheets.



**TABLE 1: INTERSECTION LEVEL OF SERVICE DEFINITIONS**

| Unsignalized   |                                       |                  | Signalized                              |   |
|--|---------------------------------------|------------------|---|---|
| Description  | Average Total Vehicle Delay (Seconds) | Level of Service | Average Control Vehicle Delay (Seconds) | Description   |
| No delay for stop-controlled approaches.   | ≤10.0                                 | A                | ≤10.0                                   | Free Flow or Insignificant Delays: Operations with low delay, signal progression is extremely favorable and most vehicles arrive during green light phase. Most vehicles do not stop.   |
| Operations with minor delay.   | >10.0 and ≤15.0                       | B                | >10.0 and ≤20.0                         | Stable Operation or Minimal Delays: Generally occurs with good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher average delay. An occasional approach phase is fully utilized.   |
| Operations with moderate delays.   | >15.0 and ≤25.0                       | C                | >20.0 and ≤35.0                         | Stable Operation or Acceptable Delays: Higher delays resulting from fair signal progression and/or longer cycle lengths. Drivers begin having to wait through more than one red light. Most drivers feel somewhat restricted.   |
| Operations with increasingly unacceptable delays.                                  | >25.0 and ≤35.0                       | D                | >35.0 and ≤55.0                         | Approaching Unstable or Tolerable Delays: Congestion becomes more noticeable. Longer delays from unfavorable signal progression, long cycle lengths, or high volume to capacity ratios. Drivers may wait through more than one red light. Queues develop and dissipate, without excessive delay.                              |
| Operations with high delays, and long queues.                                      | >35.0 and ≤50.0                       | E                | >55.0 and ≤80.0                         | Unstable Operation or Significant Delays: Considered limit of acceptable delay. High delays indicate poor signal progression, long cycle lengths and high volume to capacity ratios. Individual cycle failures are frequent and vehicles may wait through several signal cycles. Long queues form upstream from intersection. |
| Extreme congestion, very high delays and long queues unacceptable to most drivers. | >50.0                                 | F                | >80.0                                   | Forced Flow or Excessive Delays: Occurs with oversaturation when flows exceed the intersection capacity. Represents jammed conditions. Many cycle failures. Queues may block upstream intersections.  |

Source: Transportation Research Board, Special Report 209, *Highway Capacity Manual*, 2010.



**TABLE 2: EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY**

| Intersection  | Traffic Control <sup>a</sup> | AM Peak Hour                 |         | PM Peak Hour                 |                |
|---|------------------------------|------------------------------|---------|------------------------------|----------------|
|   |                              | Delay <sup>b</sup> (seconds) | LOS     | Delay <sup>b</sup> (seconds) | LOS            |
| 1. Northgate Avenue/1-980 SB Off Ramp / 27th Street             | Signal                       | 11.0                         | B       | 15.4                         | B              |
| 2. Northgate Avenue/I-980 NB On Ramp / 27th Street              | Signal                       | 24.3                         | C       | 15.0                         | B              |
| 3. Telegraph Avenue / 27th Street                               | Signal                       | 25.6                         | C       | 23.5                         | C              |
| 4. Broadway / 27th Street                                       | Signal                       | 10.7                         | B       | 14.6                         | B              |
| 5. Telegraph Avenue / 26th Street                               | Signal                       | 1.3                          | A       | 1.0                          | A              |
| 6. Broadway / 26th Street                                       | Signal                       | 0.6                          | A       | 0.9                          | A              |
| 7. Broadway / 25th Street <sup>c</sup>                          | Signal                       | 15.6                         | B       | 11.9                         | B              |
| 8. Telegraph Avenue / 24th Street                               | Signal                       | 2.3                          | A       | 1.4                          | A              |
| 9. Harrison Street / 27th Street / 24th St <sup>c</sup>         | Signal                       | 46.8                         | D       | 55.2                         | E              |
| 10. Northgate Avenue / Grand Avenue                             | Signal                       | 19.2                         | B       | 10.0                         | B              |
| 11. Telegraph Avenue / Grand Avenue                             | Signal                       | 16.9                         | B       | 22.5                         | C              |
| 12. Valley Street / Grand Avenue                                | SSSC                         | 1.1 (20.1)                   | A ( C ) | 2.0 (42.3)                   | A ( E )        |
| 13. Broadway / Grand Avenue                                     | Signal                       | 15.1                         | B       | 11.4                         | B              |
| 14. Webster Street / Grand Avenue                               | Signal                       | 21.3                         | C       | 13.4                         | B              |
| 15. Valdez Street / Grand Avenue                                | Signal                       | 7.4                          | A       | 8.1                          | A              |
| 16. Harrison Street / Grand Avenue                              | Signal                       | 23.4                         | C       | >55                          | E              |
| 17. Bay Place / Grand Avenue                                    | Signal                       | 11.2                         | B       | -                            | F <sup>d</sup> |
| 18. Bellevue Avenue/Park View Terrace / Grand Avenue            | Signal                       | 2.2                          | A       | -                            | F <sup>d</sup> |
| 19. Perkins Street / Grand Avenue                               | Signal                       | 3.7                          | A       | -                            | F <sup>d</sup> |
| 20. Staten Avenue / Grand Avenue                                | Signal                       | 2.0                          | A       | -                            | F <sup>d</sup> |
| 21. Euclid Avenue / Grand Avenue                                | Signal                       | 20.5                         | C       | -                            | F <sup>d</sup> |
| 22. El Embarcadero / Grand Avenue                               | Signal                       | 18.9                         | B       | -                            | F <sup>d</sup> |
| 23. MacArthur Boulevard / Grand Avenue                          | Signal                       | 24.6                         | C       | -                            | F <sup>d</sup> |
| 24. Telegraph Avenue / 22nd Street                              | SSSC                         | 1.5 (22.0)                   | A ( C ) | 2.9 (24.7)                   | A ( C )        |
| 25. Valley Street / 22nd Street                                 | SSSC                         | 1.8 (8.8)                    | A ( A ) | 1.6 (9.7)                    | A ( A )        |
| 26. Broadway / 22nd Street                                      | Signal                       | 4.7                          | A       | 11.0                         | B              |
| 27. Telegraph Avenue / 21st Street                              | SSSC                         | 3.4 (29.2)                   | A ( D ) | 2.1 (22.4)                   | A ( C )        |
| 28. Broadway / 21st Street                                      | Signal                       | 6.3                          | A       | 6.1                          | A              |
| 29. MLK Jr. Way / San Pablo Avenue / 20th Street <sup>c</sup>   | Signal                       | 15.5                         | B       | 18.4                         | B              |
| 30. Telegraph Avenue / 20th Street                              | Signal                       | 13.7                         | B       | 14.9                         | B              |
| 31. Broadway / 20th Street                                      | Signal                       | 9.6                          | A       | 11.4                         | B              |
| 32. Brush Street / 18th Street <sup>e</sup>                     | Signal                       | 15.9                         | B       | 14.3                         | B              |
| 33. Castro Street / I-980 NB On-Ramp / 18th Street <sup>c</sup> | Signal                       | 9.2                          | A       | 13.1                         | B              |



**TABLE 2: EXISTING INTERSECTION LEVEL OF SERVICE SUMMARY**

| Intersection  | Traffic Control <sup>a</sup> | AM Peak Hour                 |     | PM Peak Hour                 |     |
|---|------------------------------|------------------------------|-----|------------------------------|-----|
|   |                              | Delay <sup>b</sup> (seconds) | LOS | Delay <sup>b</sup> (seconds) | LOS |
| 34. MLK Jr. Way / 18th Street   | Signal                       | 11.1                         | B   | 11.2                         | B   |
| 35. Jefferson Street / San Pablo Avenue / 19th Street <sup>c</sup>      | Signal                       | 17.0                         | B   | 19.6                         | B   |
| 36. Telegraph Avenue / 19th Street                                      | Signal                       | 7.1                          | A   | 8.3                          | A   |
| 37. Broadway / 19th Street  | Signal                       | 5.2                          | A   | 6.0                          | A   |
| 38. Brush Street / I-980 Westbound On-ramp / 17th Street <sup>c</sup>   | Signal                       | 6.4                          | A   | 11.6                         | B   |
| 39. I-980 Eastbound Off-ramp / Castro Street / 17th Street <sup>c</sup> | Signal                       | 23.7                         | C   | 36.2                         | D   |

<sup>a</sup> Signal = intersection is controlled by a traffic signal; SSSC = Intersection is controlled by a stop-sign on the side-street approach;

<sup>b</sup> For signalized intersections, average intersection delay and LOS based on the 2010 HCM method is shown. For side-street stop-controlled intersections, delays for worst movement and average intersection delay are shown: intersection average (worst movement)

<sup>c</sup> Denotes an intersection with average intersection delay and LOS based on the 2000 HCM method

<sup>d</sup> Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound Grand Avenue. Reported LOS is based on field observations.

<sup>e</sup> Vehicle queues at the off-ramp periodically extend back to the freeway mainline during the AM peak hour.

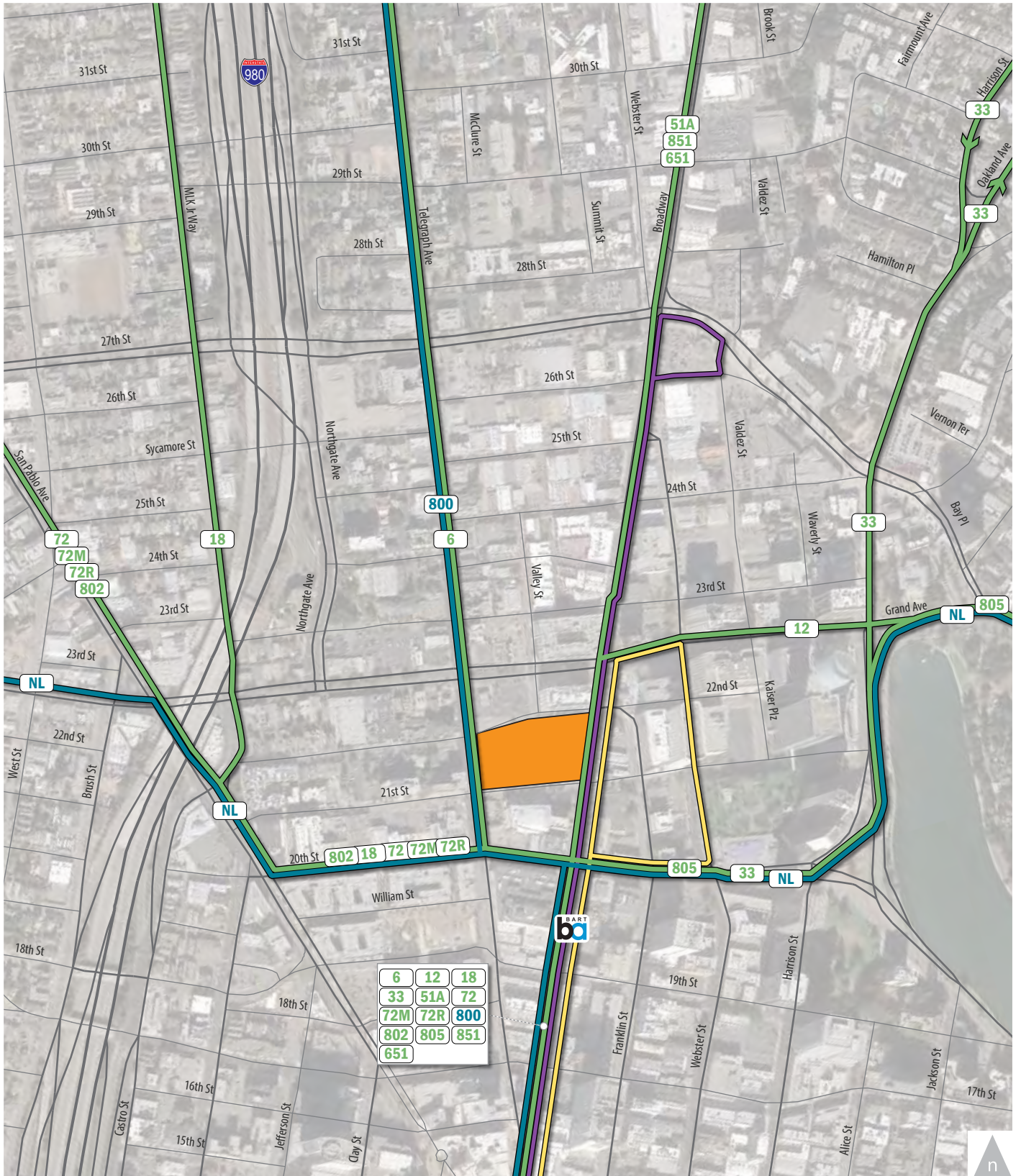
Source: Fehr & Peers, 2017

Most intersections currently operate at LOS D or better during both weekday AM and PM peak hours. The signalized 24th Street/Harrison Street/27th Street intersection (#9) operates at LOS E during the PM peak hour. The side-street stop-controlled Valley Street at Grand Avenue (Intersection #12) operates at LOS E for the northbound and southbound left-turn in the PM peak period. Queue spill back from the I-580 Eastbound On-ramp at Lakeshore Avenue (Intersection #23) reaches back to about Bay Place on Grand Avenue (Intersection #17) during the PM commute period. The reported LOS F operations at the intersections on Grand Avenue between Bay Place and MacArthur Boulevard (Intersections #17 thru #23) reflect the observed queue spill back from adjacent intersections along this segment of Grand Avenue.

## EXISTING TRANSIT

Transit service providers in the project vicinity include AC Transit, which provides local and Transbay bus service with connections to the Transbay Terminal in San Francisco and Bay Area Rapid Transit (BART), which provides regional rail service. The existing transit services provided near the project site are shown on **Figure 2**.





**LEGEND**

- Project Site
- X AC Transit Transbay
- # AC Transit Local
- Broadway Shuttle (Night)
- Broadway Shuttle (Day)



Figure 2

**Existing Transit Service**



**Table 3** shows the capacity and loads (passengers) of the AC Transit routes serving the project area and vicinity. Load factor is defined as the ratio of occupied seats to the number of seats on the bus. A load factor of 100% or more indicates that the bus operates at or above its seated capacity. During the weekday PM peak period (4:00 PM to 6:00 PM) the buses in the project vicinity generally operate below bus capacities. In general, Route 6 and Route 72 at the Uptown Transit Center and Route 51A at the Broadway/Grand Avenue intersection are the most heavily utilized bus routes in the study area.

The Pittsburg/Bay Point–SFO/Millbrae, Daly City/Millbrae–Richmond, and Richmond-Fremont lines provide service at the 19th Street BART Station. The station is served by up to 40 trains per hour during the peak periods. **Table 4** summarizes peak-hour loads near the 19th Street BART Station. Currently, both directions of the Pittsburg/Bay Point–SFO/Millbrae and the Richmond–Daly City/Millbrae lines have average load factors above BART’s planning capacity (107 passengers per train car) during peak periods.

**TABLE 3: AC TRANSIT PASSENGER LOAD CHARACTERISTICS (WEEKDAY)**

| Bus Route and Stop Location <sup>a</sup>               | Direction | Average Capacity (Seats) | Average Load <sup>b</sup> (Passengers) | Maximum Load <sup>c</sup> (Passengers) | Maximum Load Factor |
|--|-----------|--------------------------|--|--|---------------------|
| Route 6 on 20th Street at Telegraph Avenue             | NB        | 36                       | 17                                     | 53                                     | 1.5                 |
|  | SB        | 36                       | 14                                     | 41                                     | 1.1                 |
| Route 12 on Broadway at 20th Street                    | NB        | 26                       | 12                                     | 33                                     | 1.3                 |
|  | SB        | 26                       | 12                                     | 35                                     | 1.3                 |
| Route 18 on Broadway at 19th Street                    | NB        | 36                       | 10                                     | 31                                     | 1.2                 |
|  | SB        | 36                       | 11                                     | 31                                     | 0.9                 |
| Route 33 on Broadway at 19th Street <sup>d</sup>       | EB        | 36                       | 8                                      | 28                                     | 0.8                 |
|  | WB        | 36                       | 10                                     | 30                                     | 0.8                 |
| Route 51A on Broadway at Grand Avenue                  | NB        | 36                       | 12                                     | 30                                     | 0.8                 |
|  | SB        | 36                       | 16                                     | 48                                     | 1.3                 |
| Route 72 on 20th Street at Telegraph Avenue            | NB        | 36                       | 16                                     | 45                                     | 1.3                 |
| Route 72 on Broadway at 19th Street                    | SB        | 36                       | 17                                     | 38                                     | 1.1                 |
| Route 72M on 20th Street at Telegraph Avenue           | NB        | 36                       | 12                                     | 31                                     | 0.9                 |
|  | SB        | 36                       | 17                                     | 39                                     | 1.1                 |
| Route 72R on 20th Street at Telegraph Avenue           | NB        | 32                       | 12                                     | 30                                     | 0.8                 |
|  | SB        | 32                       | 16                                     | 43                                     | 1.3                 |
| Free-Broadway Shuttle (Day) on Broadway at 22nd Street | NB        | 25                       | 12                                     | 31                                     | 1.0                 |
| Free-Broadway Shuttle (Day) on Broadway at 20th Street | SB        | 25                       | 6                                      | 13                                     | 0.5                 |





**TABLE 3: AC TRANSIT PASSENGER LOAD CHARACTERISTICS (WEEKDAY)**

| <b>Bus Route and Stop Location<sup>a</sup></b>            | <b>Direction</b> | <b>Average Capacity (Seats)</b> | <b>Average Load<sup>b</sup> (Passengers)</b> | <b>Maximum Load<sup>c</sup> (Passengers)</b> | <b>Maximum Load Factor</b> |
|---|------------------|---------------------------------|--|--|----------------------------|
| Free-Broadway Shuttle (Night) on Broadway at Grand Avenue | NB               | 25                              | 9  | 23   | 0.9                        |
|   | SB               | 25                              | 3  | 9  | 0.4                        |
| Route NL on 20th Street at Broadway                       | EB               | 41                              | 3  | 8  | 0.3                        |
|   | WB               | 41                              | 17   | 61   | 1.5                        |
| Route 800 on 20th Street at Telegraph Avenue              | EB               | 51                              | 9  | 23   | 0.6                        |
|   | WB               | 51                              | 12   | 35   | 0.7                        |
| Route 802 on 20th Street at Telegraph Avenue              | NB               | 34                              | 8  | 23   | 0.5                        |
|   | SB               | 34                              | 5  | 11   | 0.3                        |
| Route 805 on Broadway at 19th Street                      | EB               | 36                              | 5  | 13   | 0.4                        |
|   | WB               | 36                              | 6  | 13   | 0.4                        |
| Route 851 on Broadway at Grand Avenue                     | NB               | 36                              | 5  | 13   | 0.4                        |
|   | SB               | 36                              | 7  | 17   | 0.5                        |
| Route 651 on Broadway at Grand Avenue                     | NB               | 36                              | 8  | 23   | 0.6                        |
| Route 651 on Broadway at 20th Street                      | SB               | 36                              | 7  | 14   | 0.4                        |

<sup>a</sup> Bus stop chosen is the closest to project site with data available.

<sup>b</sup> Average load is defined as the average number of passengers onboard when the bus departs that stop.

<sup>c</sup> Maximum load is the observed maximum number of passengers onboard the bus when it departs that stop during the weekday PM peak period (4:00 PM to 6:00 PM).

<sup>d</sup> AC transit changed Route 11 to Route 33 in June, 2017. Results are presented for formerly Route 11.

Source: AC Transit Fall 2016 data provided in Spring 2017, analyzed by Fehr & Peers, 2017.



**TABLE 4: BART PEAK-HOUR LOADS BY LINE**

| Peak Period | Line                                     | Peak Hour                | Trains During Peak Hour | Average Cars per Peak Hour Train | Average Maximum Load (Passengers/Car) | Load Factor |
|-------------|--|--------------------------|-------------------------|----------------------------------|---------------------------------------|-------------|
| AM          | <b>Pittsburg/Bay Point -SFO/Millbrae</b> | <b>7:30 AM - 8:30 AM</b> | <b>11</b>               | <b>9</b>                         | <b>112</b>                            | <b>1.05</b> |
|             | SFO/Millbrae-Pittsburg/Bay Point         | 8:20 AM - 9:20 AM        | 7                       | 10                               | 13                                    | 0.12        |
|             | Daly City/Millbrae-Richmond              | 8:20 AM - 9:20 AM        | 5                       | 9                                | 19                                    | 0.18        |
|             | <b>Richmond-Daly City/Millbrae</b>       | <b>8:00 AM - 9:00 AM</b> | <b>5</b>                | <b>9</b>                         | <b>125</b>                            | <b>1.17</b> |
|             | Fremont-Richmond                         | 7:40 AM - 8:40 AM        | 5                       | 7                                | 39                                    | 0.36        |
|             | Richmond-Fremont                         | 7:30 AM - 8:30 AM        | 5                       | 6                                | 39                                    | 0.36        |
| PM          | Pittsburg/Bay Point - SFO/Millbrae       | 5:00 PM - 6:00 PM        | 9                       | 10                               | 27                                    | 0.25        |
|             | <b>SFO/Millbrae-Pittsburg/Bay Point</b>  | <b>5:10 PM - 6:10 PM</b> | <b>11</b>               | <b>9</b>                         | <b>108</b>                            | <b>1.01</b> |
|             | <b>Daly City/Millbrae-Richmond</b>       | <b>5:20 PM - 6:20 PM</b> | <b>5</b>                | <b>9</b>                         | <b>120</b>                            | <b>1.12</b> |
|             | Richmond-Daly City/Millbrae              | 5:10 PM - 6:10 PM        | 5                       | 9                                | 35                                    | 0.33        |
|             | Fremont-Richmond                         | 5:10 PM - 6:10 PM        | 5                       | 6                                | 72                                    | 0.67        |
|             | Richmond-Fremont                         | 4:40 PM - 5:40 PM        | 5                       | 7                                | 66                                    | 0.62        |

<sup>a</sup> Load Factor defined as average load over the assumed design capacity (47 seats and 60 standing)

**Bold** indicates load above capacity.

Source: Fall 2016 data provided by BART in March 2017 and summarized by Fehr & Peers, 2017.

## PROJECT TRANSPORTATION CHARACTERISTICS

This section addresses the following topics:

- Project Trip Generation
- Project Trip Distribution and Assignment

The project is located in the block bound by 22nd Street, Broadway, 21st Street, and Telegraph Avenue in Downtown Oakland. The block is currently occupied by Space Burger restaurant, a City owned Parking Garage, and three bank/retail buildings on Broadway. The project proposes a multi-level parking garage which would contain parking for the proposed uses as well as replacement



parking from removal of the existing parking garage and loss of on-street parking spaces. The project has four development scenarios:

- The Residential/Office Mix Scenario would consist of 395 apartment units, 880,550 square feet of office space, 85,000 square feet of retail space, and 18,500 square feet of community space.
- The All Office Scenario would consist of 1,450,000 square feet of office space, 80,000 square feet of retail space, and 22,790 square feet of community space.
- The Maximum Office Scenario would consist of 2,689,000 square feet of office space and 87,000 square feet of retail space.
- The Maximum Residential Scenario would consist of 1,556 apartment units, 99,220 square feet of retail space, and 37,150 square feet of community space.

For purposes of this analysis, only the Residential/Office Mix Scenario is discussed. To allow flexibility for development to be responsive to market demands and opportunities, the transportation chapter of the EIR studies the maximum development envelope which includes up to 2.7 million square feet of office with 87,000 square feet of retail.

## TRIP GENERATION

**Table 5** summarizes automobile trip generation of the existing buildings which generated about 840 daily trips and 13 AM peak hour and 69 PM peak hour trips at the time of the NOP. These trips are deducted from the project trip generation to estimate the net change in automobile trips from the project. **Table 6** summarizes the change in automobile trip generation for the 2100 Telegraph site with the Residential/Office Mix Scenario replacing the existing uses. After completion the Residential/Office Mix Scenario is estimated to generate about 7,460 net new daily trips and 805 AM peak hour and 880 PM peak hour trips. Consistent with City of Oakland Transportation Impact Study Guidelines, **Table 7** presents the estimates of project trip generation for all travel modes.



**TABLE 5: AUTOMOBILE TRIP GENERATION – EXISTING USES**

| Land Use, ITE Code                    | Units <sup>a</sup> | Daily      | AM Peak Hour |          |           | PM Peak Hour |           |           |
|---------------------------------------|--------------------|------------|--------------|----------|-----------|--------------|-----------|-----------|
|                                       |                    |            | In           | Out      | Total     | In           | Out       | Total     |
| Space Burger <sup>b</sup>             | 4.3 ksf            | 180        | 0            | 0        | 0         | 5            | 7         | 12        |
| Retail <sup>c</sup>                   | 24.0 ksf           | 1,020      | 14           | 9        | 23        | 43           | 46        | 89        |
| Walk-in Bank <sup>d</sup>             | 10.2 ksf           | 380        | 0            | 0        | 0         | 27           | 35        | 62        |
| Non-Auto Reduction (43%) <sup>e</sup> |                    | -600       | -6           | -4       | -10       | -30          | -35       | -65       |
| Pass-by-reduction <sup>f</sup>        |                    | -140       | 0            | 0        | 0         | -15          | -14       | -29       |
| <b>Total Trips</b>                    |                    | <b>840</b> | <b>8</b>     | <b>5</b> | <b>13</b> | <b>30</b>    | <b>39</b> | <b>69</b> |

<sup>a</sup> DU = Dwelling Units, KSF = 1,000 square feet.

<sup>b</sup> Driveway counts collected on April 24, 2014.

<sup>c</sup> ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):

Daily: T = 42.70(X)

AM Peak Hour: T = 0.96(X) (62% in, 38% out)

PM Peak Hour: T = 3.71(X) (48% in, 52% out)

<sup>d</sup> ITE Trip Generation (9th Edition) land use category 911 (Walk-in Bank – Adj. Streets, 4-6 PM) reduced by 50% to account for low observed activity at the site:

Daily: T = 36.98 (X)

PM Peak Hour: T = 6.07 (X) (44% in, 56% out)

<sup>e</sup> The 43% reduction is based on data from the City of Oakland Transportation Impact Study Guidelines for development in an urban environment within 0.5 miles of a BART Station.

<sup>f</sup> PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 820 is 34%. Pass-by rates are not applied to the AM peak hour. Half of the reduction (17%) is applied to the daily trips. Same rates are applied to land use category 911.

Source: Fehr & Peers, 2017



**TABLE 6: AUTOMOBILE TRIP GENERATION – RESIDENTIAL/OFFICE MIX SCENARIO**

| Land Use, ITE Code                    | Units <sup>a</sup> | Daily        | AM Peak Hour |            |            | PM Peak Hour |            |            |
|---------------------------------------|--------------------|--------------|--------------|------------|------------|--------------|------------|------------|
|                                       |                    |              | In           | Out        | Total      | In           | Out        | Total      |
| Residential <sup>b</sup>              | 395 DU             | 2,630        | 40           | 162        | 202        | 159          | 86         | 245        |
| Retail <sup>c</sup>                   | 85 KSF             | 6,120        | 88           | 54         | 142        | 258          | 280        | 538        |
| Office <sup>d</sup>                   | 880.55 KSF         | 6,860        | 960          | 131        | 1,091      | 181          | 884        | 1,065      |
| Non-Auto Reduction (43%) <sup>e</sup> |                    | -6,710       | -468         | -149       | -617       | -257         | -538       | -795       |
| Pass-by-reduction <sup>f</sup>        |                    | -600         | 0            | 0          | 0          | -52          | -52        | -104       |
| Existing Trip Generation <sup>g</sup> |                    | -840         | -8           | -5         | -13        | -30          | -39        | -69        |
| <b>Total Trips</b>                    |                    | <b>7,460</b> | <b>612</b>   | <b>193</b> | <b>805</b> | <b>259</b>   | <b>621</b> | <b>880</b> |

<sup>a</sup> DU = Dwelling Units, KSF = 1,000 square feet.

<sup>b</sup> ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):

Daily:  $T = 6.65 * (X)$

AM Peak Hour:  $T = 0.51 * (X)$  (20% in, 80% out)

PM Peak Hour:  $T = 0.62 * (X)$  (65% in, 35% out)

<sup>c</sup> ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):

Daily:  $\ln(T) = 0.65 * \ln(X) + 5.83$

AM Peak Hour:  $\ln(T) = 0.61 * \ln(X) + 2.24$  (62% in, 38% out)

PM Peak Hour:  $\ln(T) = 0.67 * \ln(X) + 3.31$  (48% in, 52% out)

<sup>d</sup> ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):

Daily:  $\ln(T) = 0.76 * \ln(X) + 3.68$

AM Peak Hour:  $\ln(T) = 0.80 * \ln(X) + 1.57$  (88% in, 12% out)

PM Peak Hour:  $T = 1.12(X) + 78.45$  (17% in, 83% out)

<sup>e</sup> The 43% reduction is based on data from the City of Oakland Transportation Impact Study Guidelines for development in an urban environment within 0.5 miles of a BART Station.

<sup>f</sup> PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 820 is 34%. Pass-by rates are not applied to the AM peak hour. Half of the reduction (17%) is applied to the daily trips.

<sup>g</sup> See Table 5

Source: Fehr & Peers, 2017

**TABLE 7: TRIP GENERATION BY TRAVEL MODE – RESIDENTIAL/OFFICE MIX SCENARIO**

| Travel Mode        | Mode Share Adjustment Factors <sup>a</sup> | Daily         | Weekday AM Peak Hour | Weekday PM Peak Hour |
|--------------------|--|---------------|----------------------|----------------------|
| Automobile         | 57.0%                                      | 7,460         | 805                  | 880                  |
| BART / AC Transit  | 30.4%                                      | 3,980         | 429                  | 469                  |
| Bike               | 3.9%                                       | 510           | 55                   | 60                   |
| Walk               | 23.0%                                      | 3,010         | 325                  | 355                  |
| <b>Total Trips</b> |  | <b>14,960</b> | <b>1,614</b>         | <b>1,764</b>         |

<sup>a</sup> Based on City of Oakland Transportation Impact Study Guidelines assuming project site is in an urban environment within 0.5 miles of a BART Station.

Source: Fehr & Peers, 2017



## PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution and assignment process is used to estimate how the vehicle trips generated by a project site would be distributed across the roadway network. Based on existing travel patterns, locations of complementary land uses, results of the Alameda County Transportation Commission's (Alameda CTC) Travel Demand Model, and the one-way street network and turn restrictions in Downtown Oakland, Fehr & Peers determined directions of approach to and departure from the Project site. **Figure 3** shows the resulting trip distribution.

The new automobile trips generated by the project, as shown in Table 6, were assigned to the roadway network according to the trip distribution. The trip assignment accounts for project access via 21st and 22nd Streets. Figures in Attachment A show the resulting net peak hour trip assignment at the intersection level. This analysis assumes that most vehicles would use the major streets, such as Broadway, Telegraph Avenue, and West Grand Avenue, to travel to and from the site. Existing parking garage trips were reassigned from Telegraph Avenue to 21st Street.

## EXISTING PLUS PROJECT CONDITIONS

This section addresses traffic conditions with the Residential/Office Mix Scenario traffic added to the Existing Conditions at study intersections in the project vicinity are described below. This section addresses the following topics:

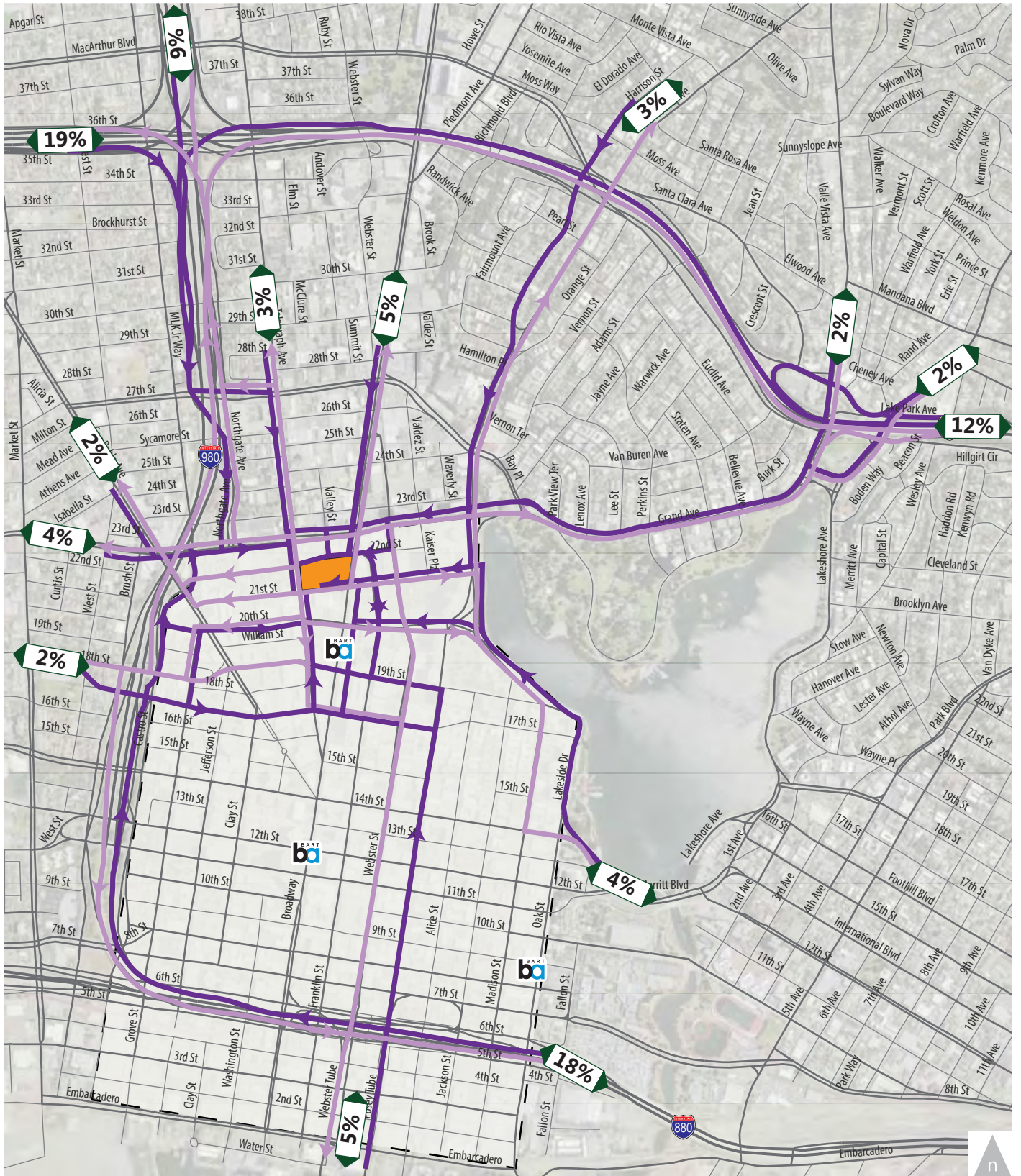
- Existing Plus Project Intersection Operations
- Existing Plus Project Transit Operations
- Project Parking Demand

## EXISTING PLUS PROJECT INTERSECTION OPERATIONS

Attachment A shows traffic volumes under Existing Plus Project conditions, which consists of Existing traffic volumes plus added traffic volumes generated by the Residential/Office Mix Scenario.

**Table 8** summarizes the intersection operations results for the Existing No Project and Existing Plus Project conditions. Most of the study intersections would remain operating at LOS D or better during both weekday AM and PM peak hours. Attachment B provides the detailed intersection LOS calculation worksheets.





**LEGEND**

- Project Site
- Inbound Routes
- Outbound Routes
- 10% Downtown "Internal" Travel
- XX% Project Trip Distribution Percentages

Figure 3

## Project Vehicle Trip Distribution





**TABLE 8: INTERSECTION LEVEL OF SERVICE SUMMARY**

| Intersection  | Traffic Control <sup>a</sup> | Peak Hour | Existing Conditions          |                | Existing Plus Project        |                |
|---|------------------------------|-----------|------------------------------|----------------|------------------------------|----------------|
|   |                              |           | Delay <sup>b</sup> (seconds) | LOS            | Delay <sup>b</sup> (seconds) | LOS            |
| Northgate Avenue/1-980 SB Off Ramp / 27th Street              | Signal                       | AM        | 11.0                         | B              | 11.2                         | B              |
|   |                              | PM        | 15.4                         | B              | 15.5                         | B              |
| Northgate Avenue/1-980 NB On Ramp / 27th Street               | Signal                       | AM        | 24.3                         | C              | 24.4                         | C              |
|   |                              | PM        | 15.0                         | B              | 15.6                         | B              |
| Telegraph Avenue / 27th Street                                | Signal                       | AM        | 25.6                         | C              | 24.4                         | C              |
|   |                              | PM        | 23.5                         | C              | 24.6                         | C              |
| Broadway / 27th Street  | Signal                       | AM        | 10.7                         | B              | 10.7                         | B              |
|   |                              | PM        | 14.6                         | B              | 14.5                         | B              |
| Telegraph Avenue / 26th Street                                | Signal                       | AM        | 1.3                          | A              | 1.0                          | A              |
|   |                              | PM        | 1.0                          | A              | 1.1                          | A              |
| Broadway / 26th Street  | Signal                       | AM        | 0.6                          | A              | 0.6                          | A              |
|   |                              | PM        | 0.9                          | A              | 0.9                          | A              |
| Broadway / 25th Street <sup>c</sup>                           | Signal                       | AM        | 15.6                         | B              | 15.1                         | B              |
|   |                              | PM        | 11.9                         | B              | 11.7                         | B              |
| Telegraph Avenue / 24th Street                                | Signal                       | AM        | 2.3                          | A              | 2.2                          | A              |
|   |                              | PM        | 1.4                          | A              | 1.3                          | A              |
| Harrison Street / 27th Street / 24th St <sup>c</sup>          | Signal                       | AM        | 46.8                         | D              | 47.2                         | D              |
|   |                              | PM        | 55.2                         | E              | 55.6                         | E              |
| Northgate Avenue / Grand Avenue                               | Signal                       | AM        | 19.2                         | B              | 20.2                         | C              |
|   |                              | PM        | 10.0                         | B              | 12.8                         | B              |
| Telegraph Avenue / Grand Avenue                               | Signal                       | AM        | 16.9                         | B              | 31.0                         | C              |
|   |                              | PM        | 22.5                         | C              | 28.6                         | C              |
| Valley Street / Grand Avenue                                  | SSSC                         | AM        | 1.1 (20.1)                   | A ( C )        | 1.2 (26.6)                   | A ( D )        |
|   |                              | PM        | 2.0 (42.3)                   | A ( E )        | 2.5 (62.3)                   | A ( F )        |
| Broadway / Grand Avenue                                       | Signal                       | AM        | 15.1                         | B              | 15.4                         | B              |
|   |                              | PM        | 11.4                         | B              | 11.6                         | B              |
| Webster Street / Grand Avenue                                 | Signal                       | AM        | 21.3                         | C              | 21.6                         | C              |
|   |                              | PM        | 13.4                         | B              | 13.5                         | B              |
| Valdez Street / Grand Avenue                                  | Signal                       | AM        | 7.4                          | A              | 7.9                          | A              |
|   |                              | PM        | 8.1                          | A              | 8.1                          | A              |
| Harrison Street / Grand Avenue                                | Signal                       | AM        | 23.4                         | C              | 22.3                         | C              |
|   |                              | PM        | >55                          | E <sup>d</sup> | >55                          | E <sup>d</sup> |
| Bay Place / Grand Avenue <sup>d</sup>                         | Signal                       | AM        | 11.2                         | B              | 11.4                         | B              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| Bellevue Avenue/Park View Terrace / Grand Avenue <sup>d</sup> | Signal                       | AM        | 2.2                          | A              | 2.3                          | A              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| Perkins Street / Grand Avenue <sup>d</sup>                    | Signal                       | AM        | 3.7                          | A              | 3.6                          | A              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| Staten Avenue / Grand Avenue <sup>d</sup>                     | Signal                       | AM        | 2.0                          | A              | 2.1                          | A              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| Euclid Avenue / Grand Avenue <sup>d</sup>                     | Signal                       | AM        | 20.5                         | C              | 22.3                         | C              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |





**TABLE 8: INTERSECTION LEVEL OF SERVICE SUMMARY**

| Intersection  | Traffic Control <sup>a</sup> | Peak Hour | Existing Conditions          |                | Existing Plus Project        |                |
|---|------------------------------|-----------|------------------------------|----------------|------------------------------|----------------|
|   |                              |           | Delay <sup>b</sup> (seconds) | LOS            | Delay <sup>b</sup> (seconds) | LOS            |
| El Embarcadero / Grand Avenue <sup>d</sup>                          | Signal                       | AM        | 18.9                         | B              | 19.3                         | B              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| MacArthur Boulevard / Grand Avenue <sup>d</sup>                     | Signal                       | AM        | 24.6                         | C              | 24.1                         | C              |
|   |                              | PM        | -                            | F <sup>d</sup> | -                            | F <sup>d</sup> |
| Telegraph Avenue / 22nd Street                                      | SSSC                         | AM        | 1.5 (22.0)                   | A ( C )        | 2.4 (32.3)                   | A ( D )        |
|   |                              | PM        | 2.9 (24.7)                   | A ( C )        | 8.1 (37.8)                   | A ( E )        |
| Valley Street / 22nd Street   | SSSC                         | AM        | 1.8 (8.8)                    | A (A)          | 5.8 (10.7)                   | A (B)          |
|   |                              | PM        | 1.6 (9.7)                    | A (A)          | 3.6 (10.6)                   | A (B)          |
| Broadway / 22nd Street  | Signal                       | AM        | 4.7                          | A              | 5.6                          | A              |
|   |                              | PM        | 11.0                         | B              | 11.0                         | B              |
| Telegraph Avenue / 21st Street                                      | SSSC                         | AM        | 3.4 (29.2)                   | A (D)          | 6.6 (86.0)                   | A (F)          |
|   |                              | PM        | 2.1 (22.4)                   | A ( C )        | 3.1 (36.5)                   | A ( E )        |
| Broadway / 21st Street  | Signal                       | AM        | 6.3                          | A              | 7.7                          | A              |
|   |                              | PM        | 6.1                          | A              | 12.0                         | B              |
| MLK Jr. Way / San Pablo Avenue / 20th Street <sup>c</sup>           | Signal                       | AM        | 15.5                         | B              | 16.9                         | B              |
|   |                              | PM        | 18.4                         | B              | 23.5                         | C              |
| Telegraph Avenue / 20th Street                                      | Signal                       | AM        | 13.7                         | B              | 14.7                         | B              |
|   |                              | PM        | 14.9                         | B              | 15.6                         | B              |
| Broadway / 20th Street  | Signal                       | AM        | 9.6                          | A              | 9.5                          | A              |
|   |                              | PM        | 11.4                         | B              | 10.9                         | B              |
| Brush Street / 18th Street <sup>e</sup>                             | Signal                       | AM        | 15.9                         | B              | 16.1                         | B              |
|   |                              | PM        | 14.3                         | B              | 15.7                         | B              |
| Castro Street / I-980 NB On-Ramp / 18th Street <sup>c</sup>         | Signal                       | AM        | 9.2                          | A              | 10.0                         | B              |
|   |                              | PM        | 13.1                         | B              | 16.3                         | B              |
| MLK Jr. Way / 18th Street   | Signal                       | AM        | 11.1                         | B              | 11.1                         | B              |
|   |                              | PM        | 11.2                         | B              | 11.7                         | B              |
| Jefferson Street / San Pablo Avenue / 19th Street <sup>c</sup>      | Signal                       | AM        | 17.0                         | B              | 17.5                         | B              |
|   |                              | PM        | 19.6                         | B              | 21.0                         | C              |
| Telegraph Avenue / 19th Street                                      | Signal                       | AM        | 7.1                          | A              | 7.2                          | A              |
|   |                              | PM        | 8.3                          | A              | 9.0                          | A              |
| Broadway / 19th Street  | Signal                       | AM        | 5.2                          | A              | 5.2                          | A              |
|   |                              | PM        | 6.0                          | A              | 5.7                          | A              |
| Brush Street / I-980 Westbound On-ramp / 17th Street <sup>c</sup>   | Signal                       | AM        | 6.4                          | A              | 6.5                          | A              |
|   |                              | PM        | 11.6                         | B              | 13.5                         | B              |
| I-980 Eastbound Off-ramp / Castro Street / 17th Street <sup>c</sup> | Signal                       | AM        | 23.7                         | C              | 28.1                         | C              |
|   |                              | PM        | 36.2                         | D              | 48.1                         | D              |

<sup>a</sup> Signal = intersection controlled by traffic signal; SSSC = Intersection controlled by stop-sign on side-street approach;

<sup>b</sup> Signalized intersections, average intersection delay and LOS based on 2010 HCM method. Side-street stop-controlled intersections, delays for worst movement and average intersection delay: intersection average (worst movement)

<sup>c</sup> Denotes an intersection with average intersection delay and LOS based on the 2000 HCM method

<sup>d</sup> Delay cannot be estimated accurately because the Synchro software does not correctly account for the queues on eastbound Grand Avenue. Reported LOS is based on field observations.

<sup>e</sup> Vehicle queues at the off-ramp periodically extend back to the freeway mainline during the AM peak hour..



The signalized 24th Street/Harrison Street/27th Street intersection (Intersection #9) would remain operating at LOS E during the PM peak hour. The side-streets stop-controlled Valley Street at Grand Avenue (Intersection #12), 22nd Street at Telegraph Avenue (Intersection #24), and 21st Street at Telegraph Avenue (Intersection #24) would operate at LOS F for the left-turn in the PM peak period.

Queue spill back from the I-580 Eastbound On-ramp at Lakeshore Avenue reaches back to about Bay Place on Grand Avenue during the PM commute period. The LOS F operations reflect the observed queue spill back from adjacent intersections between MacArthur Boulevard and Bay Place on Grand Avenue. The project would contribute delay to this corridor but the delay is ultimately caused by the I-580 Eastbound queues instead of the corridor intersections. Some intersections experience a slight delay improvement due to adding traffic to the main coordinated corridor better utilizing the effective green which provides an overall delay reduction.

## EXISTING PLUS PROJECT TRANSIT OPERATIONS

AC Transit bus operating speeds under Existing and Existing Plus Project conditions were analyzed along the Telegraph Avenue and Broadway corridors between 20<sup>th</sup> Street and 27th Street utilizing the *Transit Capacity and Quality of Service Manual (TCQSM)*, 3rd Edition. The TCQSM methodology is an equation-based model that is accepted as the industry standard for estimating transit impacts using inputs that describe the existing corridor, current ridership, and projected auto and transit trip generation along the corridors being analyzed.

Existing and Existing Plus Project operating speeds were analyzed for the weekday AM peak hour (8:00-9:00 AM) and PM peak hour (5:00-6:00 PM) for Route 6 along Telegraph Avenue, and for Routes 12, 51A, and the Free-B Shuttle along Broadway.

### Methodology

The TCQSM model is a three-step process that includes the calculation of dwell time at each transit stop, a capacity analysis for the corridor, and the resulting speed of transit operations along the specific corridor described in Chapter 6 of the TCQSM, 3rd Edition. Key inputs to the model include average on and off boardings at transit stops, signal timings near transit stops, and traffic volumes along the corridor. **Attachment C** outlines all model inputs and data sources. This process was completed for Existing conditions and assumed Existing Plus Project conditions.



## Analysis Results

Fehr & Peers calculated the bus operating speeds along the Telegraph Avenue and Broadway corridors using the TCQSM methodologies. **Table 9** summarizes the model outputs for Existing and Existing Plus Project conditions which shows that transit speed impacts would be less than one mile per hour. The Broadway Route 12 would have the greatest impact with a 0.7 mph speed reduction in the northbound direction during the PM peak hour.

**TABLE 9: TCQSM MODEL OUTPUTS**

| Corridor         | Route          | Existing Speeds (mph) |      |      |      | Existing Plus Project Speeds (mph) |      |     |      | Percent Difference |     |     |     |
|------------------|----------------|-----------------------|------|------|------|------------------------------------|------|-----|------|--------------------|-----|-----|-----|
|                  |                | AM                    |      | PM   |      | AM                                 |      | PM  |      | AM                 |     | PM  |     |
|                  |                | NB                    | SB   | NB   | SB   | NB                                 | SB   | NB  | SB   | NB                 | SB  | NB  | SB  |
| Telegraph Avenue | 6              | 10.3                  | 10.3 | 10.1 | 10.5 | 10.1                               | 10.0 | 9.5 | 10.1 | -2%                | -3% | -6% | -4% |
| Broadway         | 12             | 8.9                   | 8.1  | 7.8  | 8.6  | 8.7                                | 7.7  | 7.1 | 8.3  | -2%                | -5% | -9% | -4% |
| Broadway         | 51A            | 8.7                   | 8.6  | 8.6  | 8.3  | 8.4                                | 8.4  | 8.2 | 7.8  | -4%                | -2% | -5% | -6% |
| Broadway         | Free-B Shuttle | 8.6                   | --   | 8.7  | --   | 8.4                                | --   | 8.7 | --   | -2%                | --  | 0%  | --  |

Source: Fehr & Peers, 2017

According to the TCQSM there are several factors that could increase speed such as introducing skip-stop operations, increasing stop spacing, reducing dwell times, introducing bus boarding islands, and providing dedicated bus lanes. Bus boarding islands, according to the TCQSM, provide a 7-percent increase in overall speed for buses operating in the corridor. Boarding islands are also identified by the City of Oakland as a Transportation Demand Management (TDM) measure. Installing bus boarding islands along Telegraph Avenue (4 total) and Broadway (6 total) between 20th and 27th Streets would off-set the project's impact on transit speeds.

## Added Load

**Table 10** shows the loads (passengers) of the AC Transit routes serving the project area and vicinity. Load factor is defined as the ratio of occupied seats to the number of seats on the bus. A load factor of 100 percent or more indicates that the bus operates at or above its seated capacity. During the weekday PM peak period (4:00 PM to 6:00 PM) the buses in the project vicinity generally operate below bus capacities. In general, Routes 6, 12, 51A, 72R, and NL are the most heavily utilized bus routes in the study area. The load factors generally remain the same with the added project passengers which equate to one to three additional riders on each bus serving the project vicinity.



**TABLE 10: EXISTING AND EXISTING PLUS PROJECT LOAD FACTORS**

| Route | Direction | Stop <sup>a</sup>                    | Existing Conditions       |                           | Existing Plus Project     |                           |
|-------|-----------|--------------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
|       |           |                                      | Average Load <sup>b</sup> | Maximum Load <sup>c</sup> | Average Load <sup>b</sup> | Maximum Load <sup>c</sup> |
| 6     | NB        | 20 <sup>th</sup> Street at Telegraph | 0.5                       | 1.5                       | 0.5                       | 1.5                       |
| 6     | SB        | 20 <sup>th</sup> Street at Telegraph | 0.4                       | 1.1                       | 0.4                       | 1.2                       |
| 11    | EB        | Broadway at 19 <sup>th</sup> Street  | 0.2                       | 0.8                       | 0.2                       | 0.8                       |
| 11    | WB        | Broadway at 19 <sup>th</sup> Street  | 0.3                       | 0.8                       | 0.3                       | 0.9                       |
| 12    | NB        | Broadway at 22 <sup>nd</sup> Street  | 0.4                       | 1.3                       | 0.5                       | 1.4                       |
| 12    | SB        | Broadway at 20 <sup>th</sup> Street  | 0.4                       | 1.2                       | 0.4                       | 1.2                       |
| 18    | NB        | Broadway at 19 <sup>th</sup> Street  | 0.3                       | 0.9                       | 0.3                       | 0.9                       |
| 18    | SB        | Broadway at 19 <sup>th</sup> Street  | 0.3                       | 0.8                       | 0.4                       | 0.9                       |
| 51A   | NB        | Broadway at Grand Avenue             | 0.4                       | 1.3                       | 0.5                       | 1.4                       |
| 51A   | SB        | Broadway at Grand Avenue             | 0.4                       | 1.3                       | 0.5                       | 1.3                       |
| 72    | NB        | 20 <sup>th</sup> Street at Telegraph | 0.4                       | 1.1                       | 0.5                       | 1.1                       |
| 72    | SB        | Broadway at 19 <sup>th</sup> Street  | 0.3                       | 0.9                       | 0.4                       | 0.9                       |
| 72M   | NB        | 20 <sup>th</sup> Street at Telegraph | 0.5                       | 1.1                       | 0.5                       | 1.1                       |
| 72M   | SB        | 20 <sup>th</sup> Street at Telegraph | 0.3                       | 0.8                       | 0.4                       | 0.9                       |
| 72R   | NB        | 20 <sup>th</sup> Street at Telegraph | 0.5                       | 1.3                       | 0.5                       | 1.4                       |
| 72R   | SB        | 20 <sup>th</sup> Street at Telegraph | 0.4                       | 1.0                       | 0.4                       | 1.0                       |
| BSD   | NB        | Broadway at 22 <sup>nd</sup> Street  | 0.2                       | 0.5                       | 0.3                       | 0.5                       |
| BSD   | SB        | Broadway at 20 <sup>th</sup> Street  | 0.4                       | 0.9                       | 0.4                       | 0.9                       |
| BSN   | NB        | Broadway at Grand Avenue             | 0.1                       | 0.4                       | 0.2                       | 0.4                       |
| BSN   | SB        | Broadway at Grand Avenue             | 0.1                       | 0.3                       | 0.1                       | 0.4                       |
| NL    | EB        | 20 <sup>th</sup> Street at Broadway  | 0.4                       | 1.5                       | 0.4                       | 1.5                       |
| NL    | WB        | 20 <sup>th</sup> Street at Broadway  | 0.2                       | 0.6                       | 0.2                       | 0.6                       |
| 800   | EB        | 20 <sup>th</sup> Street at Telegraph | 0.2                       | 0.7                       | 0.3                       | 0.7                       |
| 800   | WB        | 20 <sup>th</sup> Street at Telegraph | 0.1                       | 0.5                       | 0.2                       | 0.5                       |
| 802   | NB        | 20 <sup>th</sup> Street at Telegraph | 0.1                       | 0.3                       | 0.2                       | 0.4                       |
| 802   | SB        | 20 <sup>th</sup> Street at Telegraph | 0.1                       | 0.4                       | 0.2                       | 0.4                       |
| 802   | NB        | 20 <sup>th</sup> Street at Telegraph | 0.2                       | 0.4                       | 0.2                       | 0.4                       |
| 802   | SB        | 20 <sup>th</sup> Street at Telegraph | 0.1                       | 0.4                       | 0.2                       | 0.4                       |
| 805   | EB        | Broadway at 19 <sup>th</sup> Street  | 0.2                       | 0.5                       | 0.2                       | 0.5                       |
| 805   | WB        | Broadway at 19 <sup>th</sup> Street  | 0.2                       | 0.6                       | 0.2                       | 0.7                       |
| 851   | NB        | Broadway at 20 <sup>th</sup> Street  | 0.2                       | 0.4                       | 0.2                       | 0.4                       |
| 851   | SB        | Broadway at 20 <sup>th</sup> Street  | 0.2                       | 0.4                       | 0.2                       | 0.4                       |
| 851   | NB        | Broadway at Grand Avenue             | 0.2                       | 0.4                       | 0.2                       | 0.4                       |
| 851   | SB        | Broadway at Grand Avenue             | 0.2                       | 0.4                       | 0.2                       | 0.4                       |
| 651   | NB        | Broadway at Grand Avenue             | 0.2                       | 0.4                       | 0.2                       | 0.5                       |
| 651   | SB        | Broadway at 20 <sup>th</sup> Street  | 0.1                       | 0.3                       | 0.1                       | 0.3                       |

<sup>a</sup> Bus stop chosen is the closest to project site with data available.

<sup>b</sup> Average load is defined as the average number of passengers onboard when the bus departs that stop.

<sup>c</sup> Maximum load is the observed maximum number of passengers onboard when the bus departs that stop.

Source: AC Transit Fall 2016 data provided in Spring 2017, analyzed by Fehr & Peers, 2017.



## PROJECT PARKING DEMAND

Parking supply in new developments has a direct correlation with mode split for those travelling to and from the site. Fehr & Peers conducted an analysis to determine adequate parking to meet the needs of the project site.

### Estimated Parking Demand

**Table 11** provides the estimated weekday parking demand, current site parking provided, and proposed provided parking for the Residential/Office Mix Scenario. Applied parking rates are derived from Institute of Transportation Engineer’s (ITE) *Parking Generation*, 4th Edition; Urban Land Institute’s *Shared Parking*, 2nd Edition; and American Community Survey data. Where applicable and similar to the trip generation completed for this project, a non-auto adjustment of 43-percent (Oakland City guidelines for mode split adjustment within half a mile from BART) is applied to account for non-automobile trips.

**TABLE 11: PARKING DEMAND ESTIMATE (RESIDENTIAL/OFFICE MIX SCENARIO)**

| Land Use  | Size | Unit <sup>a</sup> | Parking Rate per Unit | Demand                     |
|---|------|-------------------|-----------------------|----------------------------|
| <b><i>Demand</i></b>                            |      |                   |                       |                            |
| Apartment (Residents)                           | 395  | DU                | 0.50 <sup>b</sup>     | 198                        |
| Apartment (Visitors)                            | 395  | DU                | 0.09 <sup>c</sup>     | 36                         |
| Retail  | 85   | KSF               | 1.45 <sup>d</sup>     | 124                        |
| Community Space                                 | 19   | KSF               | 0.01 <sup>e</sup>     | 0                          |
| Office  | 881  | KSF               | 1.63 <sup>f</sup>     | 1,425                      |
| <b>Subtotal</b>                                 |      |                   |                       | <b>1,783</b>               |
| <b><i>Current Site Parking <sup>g</sup></i></b> |      |                   |                       |                            |
| Garage Parking                                  |      |                   |                       | 336                        |
| On-Street Parking                               |      |                   |                       | 24                         |
| <b>Total Demand</b>                             |      |                   |                       | <b>2,143</b>               |
| <b><i>Proposed Parking Supply</i></b>           |      |                   |                       | <b>1,750</b>               |
|   |      |                   |                       | <b>Parking Deficit 393</b> |

<sup>a</sup> DU = Dwelling Unit; KSF = 1,000 square-feet

<sup>b</sup> Based on average vehicle ownership data for census tract 4028 from the 2013 American Community Survey. Rate assumes rental apartments that are leased.

<sup>c</sup> Based on ULI’s *Shared Parking* rate for visitors and applying a non-auto reduction of 43%

<sup>d</sup> Based on ITE *Parking Generation*, 4th Edition land use category 820 (Shopping Center; non-Friday Weekday Non-December) and applying a non-auto reduction 43%

<sup>e</sup> Assuming all trips to land use are internal, and therefore do not demand additional parking.

<sup>f</sup> Based on ITE *Parking Generation*, 4th Edition land use category 701 (Office Building; weekday suburban) and applying a non-auto reduction 43%

<sup>g</sup> The proposed project will replace public parking one for one

Sources: ITE *Parking Generation*, 4th Edition; ULI *Shared Parking*, 2nd Edition; Fehr & Peers, 2017.



### *Residential Parking Demand*

Parking demand for the residential land use of the proposed project is two-fold; it must include parking demand by residents and by guests. Parking demand for the residential component of the project was determined using average vehicle ownership rates in downtown Oakland. According to American Community Survey estimates, average vehicle ownership in the study area (census tract 4028) is 0.5 vehicles per rented dwelling unit and 1.01 vehicles per owner-occupied unit. The City of Oakland's non-auto adjustment was not applied to this rate, as even if residents are choosing to commute by non-automobile transportation modes, it cannot be assumed they do not own a vehicle and thus require a parking space. Residential visitor demand was estimated using the Urban Land Institute's *Shared Parking* rate of 0.15, adjusted to include the non-auto reduction of 43-percent. The adjusted rate applied is 0.09 parking spaces per unit.

### *Retail Parking Demand*

Parking demand for the retail land use was based on ITE's *Parking Generation*, 4th Edition. The parking rate determined most relevant for the land use was "Shopping Center" (ITE Land Use Code 820) on a weekday (excluding Friday) outside of December. Oakland's non-auto trip adjustment of 43-percent was applied to this rate, producing a rate of 1.45 spaces per 1,000 square-feet of retail.

### *Office Parking Demand*

Parking demand for the office land use of the proposed project was based on ITE's *Parking Generation*, 4th Edition. The parking rate determined most relevant for the land use was "Office Building" (ITE Land Use Code 701) on a weekday in a suburban setting. While the proposed project is in downtown Oakland, by choosing the suburban rate, it is acceptable to apply Oakland's non-auto trip adjustment. A rate of 1.62 per 1,000 square-feet of office space was applied.

### *Community Space Parking Demand*

The community space proposed does not generate parking demand. It is assumed the space will be used by employees and residents of the project and therefore does not generate new trips or parking demand.

### *Current Land Use Parking Demand*

The proposed project will replace a 336-stall garage and 24 metered on-street parking spots. The proposed project will replace these public parking spaces on a one-to-one ratio.



### Parking Analysis Results

Table 11 shows that the Residential/Office Mix Scenario results in a parking deficit of approximately 393 spaces based on the demand analysis assuming that all apartments are leased. Owner occupied apartments would increase the parking deficit to 590 spaces. This analysis assumes that the peak parking demand for all land uses would occur at the same time of day and each use would have its own parking supply.

While the parking demand analysis shows a parking deficit, there are demographic factors that could minimize the parking deficit. The Project's proximity to both regional transit, as well as employment centers and other neighborhood amenities, is likely to result in relatively high rates of walking, bicycling and transit use by residents, employees and visitors. This is evidenced in part by the travel patterns of the area's existing residents. Based on US Census data, **Table 12** summarizes the transportation mode split for employed residents' journey to work, and **Table 13** summarizes vehicle ownership per household for the census tracts in the project vicinity.

Almost half of the households in the area do not own a vehicle and only 32 percent report driving alone to work. Overall, the greatest proportion of residents, approximately 36 percent, used public transportation to travel to work. The proportion of residents who walked to work was also relatively high, with 15 percent reporting walking to work.

**TABLE 12: JOURNEY TO WORK FOR EMPLOYED RESIDENTS**

| Transportation Mode                                     | Percent of Employed Residents in Surrounding Census Tracts |
|---|--|
| <i><b>Drove alone</b></i>                               | 32%  |
| <i><b>Carpooled</b></i>                                 | 8%   |
| <i><b>Public transportation (excluding taxicab)</b></i> | 36%  |
| <i><b>Bicycle</b></i>                                   | 4%   |
| <i><b>Walked</b></i>                                    | 15%  |
| <i><b>Taxicab, motorcycle, or other means</b></i>       | 1%   |
| <i><b>Worked at home</b></i>                            | 4%   |
| <i><b>Total</b></i>                                     | 100%   |

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, Census Tracts 4013, 4027, 4028, 4029, 4030, and 4031



**TABLE 13: VEHICLE OWNERSHIP PER HOUSEHOLD**

| <b>Vehicle Ownership</b>                   | <b>Percent of Households<br/>in Surrounding Census Tracts</b> |
|--|---|
| <b><i>No vehicle available</i></b>         | 48%   |
| <b><i>1 vehicle available</i></b>          | 39%   |
| <b><i>2 vehicles available</i></b>         | 10%   |
| <b><i>3 or more vehicles available</i></b> | 3%  |
| <b><i>Total</i></b>                        | 100%  |

Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates, Census Tracts 4013, 4027, 4028, 4029, 4030, and 4031

## INFRASTRUCTURE IMPROVEMENTS

This section addresses the following topics:

- Motor Vehicle Impacts
- Pedestrian Impacts
- Bicycle Impacts
- Bus Rider Impacts
- Commercial Loading Impacts
- Construction Impacts

The final detailed design for the project would be reviewed during the City's Design Review Process to ensure consistency with applicable design standards, such as adequate sight distance for pedestrians and vehicles at project driveways. The final design review process for the project would minimize potential conflicts between various modes and provide safe and efficient pedestrian, bicycle, and vehicle circulation within the project buildings and parking facilities and between the project and the surrounding circulation systems. The project would result in increased vehicular traffic and pedestrian and bicycle activity in and around the project area. In addition, the project proposes changes to the public right-of-way and changes to access and circulation for various travel modes. The project site would be completely demolished including all sidewalks around the site perimeter. The project elements, after construction, would include:

- Sidewalks on the project site would be replaced with new sidewalks that meet or exceed the PMP design guidance, including:
  - 15- to 20-foot sidewalks on the Broadway frontage.





- 20-foot sidewalks on the 21st Street frontage
- 20-foot sidewalks on the Telegraph Avenue frontage.
- 10- to 22-foot sidewalks on the 22nd Street frontage
- Commercial truck loading for trucks on 22nd Street.
- Primary parking garage access would be on 21st Street and include two inbound and two outbound lanes. Secondary parking garage access would be on 22nd Street. All parking garage access would be controlled with gates.
- Open space would be provided on the Telegraph Avenue frontage and in the vicinity of the Broadway/21st Street intersection. Both open space areas would be located behind the back of sidewalk.

There are several additional infrastructure changes that would encourage bicycling, walking, and transit usage. These suggested changes are summarized below.

## MOTOR VEHICLE IMPACTS

The project would locate the primary and secondary automobile access to its parking garage on 21st Street (one-way eastbound) and 22nd Street (one-way westbound), respectively. By removing the two existing driveways from Telegraph Avenue, the project enhances the Class 4 Protected Bicycle Lane operations.

All motorists destined to the primary parking garage on 21st Street would need to use Telegraph Avenue, traveling through the unsignalized 21st Street intersection. With its Class 4 Protected Bicycle Lane, Telegraph Avenue is also anticipated to be the primary route for bicyclists riding to the project site, and those riders would also travel through the same unsignalized intersection. The intersection traffic controls and side-street stop signs are inadequate to accommodate the increased motorist and bicyclist activity, and the increased motor vehicle and bicycle volumes warrant signaling the 21st Street intersection with Telegraph Avenue.

All project traffic destined to the parking garage entrance on 21st Street must turn left or right onto 21st Street from Telegraph Avenue because 21st Street is one-way eastbound. The turning movements would overload the available intersection turning capacity and block both motor vehicle and bicycle movements on Telegraph Avenue, unless access to the primary parking is distributed to both Telegraph Avenue and Broadway. In addition, 21st Street is occasionally closed to automobile traffic between Telegraph Avenue and Broadway to either stage special event loading at the Paramount Theater or allow special event activities to occur on the street, and these closures will restrict access to the project's primary parking under existing traffic patterns.



The following recommendation would improve access for motorists as well as bicyclists.

**Recommendation TRANS-1:** While not required to address a CEQA impact, as part of the project, consider installing a traffic signal at the Telegraph Avenue/21st Street intersection.

- Provide marked crosswalks on all approaches with directional curb ramps and ADA-compliant pedestrian push buttons.
- Provide two-stage left-turn bike box for southbound and northbound Telegraph Avenue.
- Provide left-turn traffic signal phasing for Telegraph Avenue left turns.

The environmental consequences of Recommendation TRANS-1 have been considered. The recommended traffic signal at the Telegraph Avenue/21st Street can be accommodated within the existing right-of-way. Implementation of Recommendation TRANS-1 would not result in any significant CEQA impacts.

**Recommendation TRANS-2:** While not required to address a CEQA impact, as part of the project, consider converting 21st Street to a two-way street between San Pablo Avenue and Broadway.

- Provide a single lane in each direction while maintaining on-street meter parking. The two-way configuration to San Pablo Avenue provides a consistent design along the entire corridor between Harrison Street and San Pablo Avenue and sets driver expectations minimizing wrong-way driving where 21st Street now transitions from one-way to two-way configurations.
- Provide at least 20 feet of red curb on either side of the project driveway on 21st Street.
- Provide right-turn only movements to/from the 21st Street intersection with San Pablo Avenue with appropriate left-turn prohibition signs in the median, and provide a stop sign on 21st Street at San Pablo Avenue.
- Implement Recommendation TRANS-1.
- Modify all street regulatory and guide signs for two-way street operation.

The environmental consequences of Recommendation TRANS-2 have been considered. The recommended two-way street operation can be accommodated within the existing right-of-way, and would not induce additional traffic. Implementation of Recommendation TRANS-2 would not result in any significant CEQA impacts.

**Recommendation TRANS-3:** While not required to address a CEQA impact, as part of the project, maintain two-way traffic on 21st Street between Telegraph Avenue and Broadway at all times. Require the project applicant to work with the Paramount Theater to develop a special event



operational plan establishing procedures for the theater to continue using 21st Street for special event loading on one side of the street while maintaining two-way motor vehicle travel to and from Broadway.

The environmental consequences of Recommendation TRANS-3 have been evaluated. While there will be a change in theater operations, implementation of Recommendation TRANS-3 would not result in any significant CEQA impacts.

## PEDESTRIAN IMPACTS

Table 7 shows that the project would generate up to 3,010 daily pedestrian trips (355 during the PM peak hour) and 3,980 pedestrian trips (470 during the PM peak hour) that would walk between the project site and nearby transit stops. The project would reconstruct the sidewalks around the perimeter of the project site. The new sidewalks would all meet or exceed the design guidance in City of Oakland's PMP. The sidewalks would all provide at least 8-foot-wide through pedestrian zones (i.e., the paved part of the sidewalk usable by pedestrians).

The project would enhance pedestrian safety on Telegraph Avenue, a primary pedestrian street in Downtown, by removing all Telegraph Avenue driveways. The project would also reconfigure the 22nd Street approach to Telegraph Avenue, reducing the pedestrian crossing width from about 80 feet to 32 feet, a substantial benefit to pedestrians walking along Telegraph Avenue.

Project features may increase pedestrian and bicycle activities on 22nd Street near Valley Street and along the Valley Street corridor north across West Grand Avenue, which is an unsignalized intersection with high visibility crosswalks. Under current conditions, West Grand Avenue at Valley Street serves about 1,600 vehicles and 75 bicyclists during the PM peak hour and about 60 pedestrians cross West Grand Avenue at Valley Street during the same hour. Project features could add up to 40 more pedestrians crossing West Grand Avenue during the PM peak hour and add about 20 bicyclists turning to and from Valley Street.

According to the National Cooperative Research Program (NCHRP) Synthesis 498 rectangular Rapid Flashing Beacons (RRFBs) lose effectiveness as hourly traffic volumes exceed 1,500 vehicles and therefore this option was discarded as a potential enhancement. A Pedestrian Hybrid Beacon (PHB) would be an appropriate enhancement given the vehicle and pedestrian volume conditions, and California's Manual on Uniform Traffic Control Devices (MUTCD) regards this condition as an instance where a red signal-type device is appropriate. While PHB installations provide the red signal-type device, it is not recommended for Valley Street because a) PHBs typically only have one



crosswalk, whereas Valley Street has two crosswalks; b) a substantial number of bicyclists would turn to / from Valley Street further complicating PHB operations; and c) adjacent signalized intersections are about 340 feet from Valley Street (as measured from intersection center-lines) and a PHB would be more difficult to optimize vehicle flows through signal progression.

A traffic signal installation at Valley Street would accommodate pedestrian and bicycle movements while maintaining both crosswalks, and provide a red signal-type device consistent with MUTCD intent. In addition, the number of pedestrians (up to 100 during the PM peak hour) crossing West Grand Avenue at Valley Street after the project is completed would exceed the minimum threshold for signalization per MUTCD, Warrant 4, Pedestrian Volume.

The 22nd Street corridor is expected to be a low vehicle volume street, primarily providing vehicle access to the project's commercial loading area and parking. These users, automobile and truck drivers as well as bicyclists and pedestrians, converge at the Valley Street intersection with 22nd Street.

The total sidewalk width at the parking garage driveways on 21st and 22nd Streets would be about 20 feet. The driveway and sidewalk design shown would provide adequate sight lines between motorists exiting the garage and pedestrians only if pedestrians walked at least 10 feet away from the face of the building where cars cross sidewalks.

The following recommendation would improve access for pedestrians.

**Recommendation TRANS-4:** While not required to address a CEQA impact, as part of the project, consider installing high-visibility crosswalks crossing 22nd Street at Valley Street.

- Provide high visibility crosswalks on both sides of Valley Street with directional curb ramps.
- Provide red curb for 20 feet on either side of each crosswalk.

The environmental consequences of Recommendation TRANS-4 have been considered, and would not result in any significant CEQA impacts.

**Recommendation TRANS-5:** While not required to address a CEQA impact, as part of the project, consider installing a traffic signal at the West Grand Avenue/Valley Street intersection.

- Prior to installing a traffic signal conduct an engineering study that includes the full set of warrants for signalization, and use this engineering study as the basis for designing the traffic signal.



- Incorporate the traffic signal into the existing intersection, provide ADA accessible directional ramps, and include two stage left-turn bike boxes for bicyclists turning onto Valley Street if bike lanes are installed on West Grand Avenue.
- Provide red curb for 20 feet on either side of each crosswalk.

The environmental consequences of Recommendation TRANS-5 have been considered. The recommended traffic signal can be accommodated within the existing right-of-way, and would not result in any significant CEQA impacts.

**Recommendation TRANS-6:** While not required to address a CEQA impact, as part of the project, consider installing pedestrian features to enhance safety at the garage and commercial loading driveways.

- Use street furniture, landscaping, and other features to establish desire lines for pedestrian such that pedestrians cross the parking garage and commercial loading dock driveways at least 10 feet from the building façade at the driveway.

The environmental consequences of Recommendation TRANS-6 have been evaluated. The recommended features can be accommodated within the proposed sidewalk width, potentially requiring some minor landscape modifications at the parking garage exits. Implementation of Recommendation TRANS-6 would not result in any significant CEQA impacts.

## BICYCLE IMPACTS

Table 7 shows that the project would generate almost 510 daily bicycle trips, 60 of the project's bicycle trips would occur during the PM peak hour. As mentioned previously, the project would eliminate all driveways along the project's Telegraph Avenue frontage and this benefits bicyclists riding through the area on the Telegraph Avenue Class 4 Protected Bicycle Lanes.

The project site plan identifies secure bicycle parking adjacent to the truck delivery area on 22nd Street. Access to the bike parking would be through a service door on 22nd Street or through the office lobbies via the commercial loading docks. The site plan does not identify the amount or type (short-term or long-term) of bicycle parking. Nor does the site plan identify convenient short term parking adjacent to building entrances such as bike racks adjacent to plaza space or on-street bike corrals. The project would need to provide bike parking consistent with Municipal Code Section 17.117.090, .100, and .110.

After completion of the project, the majority of bicyclists would access the project site via the Telegraph Avenue corridor which has Class 4 Protected Bicycle Lanes. These riders would be



expected to access the site via 21st Street and then navigate through the office lobbies, walking their bikes, to access the bicycle parking behind the commercial loading docks on 22nd Street. This circuitous route to access bike parking may result in wrong-way riding on 22nd Street which is one-way westbound. Or, riders may choose to use less comfortable bicycle routes to access the project site via West Grand Avenue, using Valley Street, or via Broadway, using 22nd Street, and riding through the commercial loading area to access the secure bike parking behind it.

Bike lanes were considered and discarded for 21st Street and 22nd Street. After completion of the project and with Recommendation TRANS-2, these streets would operate with speeds at about 25 mph and single vehicle lane on 22nd Street and a vehicle lane each way on 21st Street, reflecting a Level of Traffic Stress (LTS) of 2. Both streets would be used for on-street commercial loading, Paramount Theater would use 21st Street and the project would use 22nd Street. On-street loading activities would frequently block bike lanes resulting in a LTS of 3.

There is a gap in the bike lane network on West Grand Avenue/Grand Avenue between Telegraph Avenue and Webster. The project would not preclude the installation of bike lanes by others.

Providing bike lanes on West Grand Avenue between Telegraph Avenue and Broadway would remove 30 parking spaces, one commercial loading zone, and one bike parking corral. Adding bike lanes on this segment of West Grand Avenue would increase the demand for bicyclists to use West Grand Avenue via Valley Street to access the project site and the secure bike parking facilities adjacent to the loading docks on 22nd Street. The increased turning activities to/from Valley Street at West Grand Avenue would necessitate a traffic signal with two stage left turn boxes (See Recommendation TRANS-5) if bike lanes are installed on West Broadway at Valley Street.

There is also a gap in the Grand Avenue bike lanes east of Broadway to Webster Street. Providing bike lanes on Grand Avenue east of Broadway would require removal of 13 parking spaces, 2 commercial loading zones, 1 parklet, and 1 bus stop.

The following recommendation would improve access, comfort, and safety for bicyclists.

**Recommendation TRANS-7:** While not required to address a CEQA impact, as part of the project, consider installing secure bicycle parking easily accessible from 21st Street, and short-term bicycle parking conveniently located throughout the site in the vicinity of building entrances, and conveniently located in on-street bike corrals.



The environmental consequences of Recommendation TRANS-7 have been considered. The recommended features can be accommodated within the project site. Implementation of Recommendation TRANS-7 would not result in any significant CEQA impacts.

**Recommendation TRANS-8:** While not required to address a CEQA impact, as part of the project, consider installing Class IV Bike Lanes on West Grand Avenue between Telegraph Avenue and Broadway, and install a traffic signal with two stage left-turn boxes (if bike lanes are provided) to facilitate bike access to/from Valley Street (see Recommendation TRANS-5).

- Replace the 8-foot-wide on-street parking with 6-foot bike lanes with a 2-foot striped buffer between Telegraph Avenue and Broadway.
- Remove 30 on-street meter parking spaces. The change in parking would remove 3.7 percent of the parking meters within ¼-mile of the project, increasing on-street parking occupancy from 89 percent to 91 percent during the midday and from 91 to 93 percent during the weekday evening, exceeding optimal parking occupancy which is 85 percent.
- One commercial loading zone would be in conflict with the eastbound bike lane. The loading zone is used by an adjacent restaurant and there are no other loading alternatives.
- Relocate one bike parking corral from West Grand Avenue to Broadway, incorporating it into the bus island design (Recommendation TRANS-9) for Broadway bus stops at 22nd Street.
- Implement Recommendation TRANS-5.

The environmental consequences of Recommendation TRANS-8 have been considered, and would not result in any significant CEQA impacts.

## BUS RIDER IMPACTS

Bus riders would use pedestrian facilities to travel between the bus stops and the project site. The nearest bus stops to the project site are on Broadway at 22nd Street and all buses can be accessed by walking one block from the project site to the Uptown Transit Center. Bus shelters are not provided at the bus stops located near 22nd Street. The Broadway and Telegraph Avenue sidewalks between the project site and the Uptown Transit Center meet or exceed the design guidance in City of Oakland's PMP, providing at least 8-foot-wide through pedestrian zones (i.e., the paved part of the sidewalk usable by pedestrians). With the installation of a traffic signal at the Telegraph Avenue intersection with 21st Street (Recommendation TRANS-1) pedestrians would have signal controlled crossings, with crosswalks and pedestrian signal heads, between the site and the Uptown Transit Center.



**Recommendation TRANS-9:** While not required to address a CEQA impact, as part of the project, consider installing bus shelters along with bus islands at the Broadway bus stops at 22nd Street to facilitate passenger loading. To further improve bus rider comfort and bus speeds consider installing additional bus boarding islands along Telegraph Avenue (4 total) and Broadway (4 total) between 20th and 27th Streets to off-set the project's impact on transit speeds.

The environmental consequences of Recommendation TRANS-9 have been considered, and would not result in any significant CEQA impacts.

**Recommendation TRANS-10:** While not required to address a CEQA impact, as part of the project, consider installing real-time transit information displays in the buildings to inform transit riders when the next BART train or transit bus at the Uptown Transit Center will arrive.

The environmental consequences of Recommendation TRANS-10 have been considered, and would not result in any significant CEQA impacts.

## COMMERCIAL LOADING IMPACTS

After completion of the project, 22nd Street will become the primary commercial delivery corridor for the project site. 22nd Street is currently the primary commercial delivery corridor to the existing building across the street from the project site. 22nd Street is one-way westbound, and between 26 and 32 feet wide, accommodating on-street parking along the project's frontage, except west of Valley Street where parking is on both sides of the street. All delivery vehicles would access the project site via Broadway, and with on-street parking removal, tractor-trailer trucks can negotiate the right turn from Broadway onto 22nd Street and back into the commercial loading docks as long as the commercial loading docks are angled to facilitate backing maneuvers into the dock space.

The following recommendation would improve access, comfort, and safety for commercial loading.

**Recommendation TRANS-11:** While not required to address a CEQA impact, as part of the project, consider prohibiting all on-street parking (about 24 spaces) on 22nd Street between Broadway and Telegraph Avenue, and provide a 100-foot loading zone for the existing office building on the north side of the street.

- Angle loading docks to the street such that tractor-trailer trucks can back into each loading dock space while minimizing multiple backing maneuvers.
- Provide loading dock access so docks are accessible even if adjacent docks are occupied.





The environmental consequences of Recommendation TRANS-11 have been considered, and would not result in any significant CEQA impacts.

## CONSTRUCTION IMPACTS

During the construction period for the project, temporary and intermittent transportation impacts may result from truck movements as well as construction worker vehicles to and from the project site. The construction-related traffic may temporarily reduce capacities of roadways in the project vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles.

Considering the proximity of freeway ramps on 17th and 18th Streets to I-980, as well as the freeway ramps at 27th Street to I-80/I-580 and SR 24, it is expected that construction trucks on local roadways would be limited to 17th Street, 18th/19th Street, Telegraph Avenue, West Grand Avenue, and Northgate Avenue. Truck traffic that occurs during the peak commute hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) may result in worse operations and higher delays at intersections during the construction period, both of which are non-CEQA issues.

Parking for construction workers' vehicles would need to be accommodated while maintaining adequate parking supply for downtown workers. Since nearby parking facilities operate at or near capacity on typical weekdays, it is expected that parking for most construction workers would exacerbate parking conditions. If parking cannot be accommodated within the project site, it would temporarily increase parking occupancy levels in the area.

Potential construction activity along the Telegraph Avenue and Broadway frontages, especially in the public right-of-way, could result in temporary closure of sidewalks, prohibition of on-street parking, impede bicycle operations in the Class 4 Protected bicycle Lanes, and/or may impact the operations of AC Transit buses along Broadway and Telegraph Avenue.

The City of Oakland SCA-TRANS-1: Construction Activities in the Public Right-Of-Way (#68), as listed above, requires that a Traffic Control Plan be developed as part of a larger Construction Management Plan to address potentially significant impacts during the project's construction.

The following recommendation would improve access, comfort, and safety during construction.

**Recommendation TRANS-12:** While not required to address a CEQA impact, as part of the project, consider further enhancements to SCA-UTL-2, Construction Management Plan (#13).



- Incorporate Supplemental Design Guidance: Accommodating Pedestrians, Bicyclists, And Bus Facilities In Construction Zones into a set of comprehensive traffic control measures for motor vehicles, transit, bicycle, and pedestrian access and circulation during each phase of construction.
- A construction period parking management plan to ensure that parking demands for construction workers and downtown businesses are accommodated during each phase of construction.
- A set of comprehensive traffic control measures, including scheduling of major truck trips and deliveries to avoid peak traffic hours, detour signs if required, lane closure procedures, signs, cones for drivers, and designated construction access routes.
- Limit construction truck traffic to the following corridors: 17th Street, 18th/19th Street, Telegraph Avenue, West Grand Avenue, and Northgate Avenue as part of the contract for project construction.
- Notification procedures for adjacent property owners and public safety personnel regarding when major deliveries, detours, and lane closures will occur.
- Location of construction staging areas for materials, equipment, and vehicles at an approved location.
- A process for responding to, and tracking, complaints pertaining to construction activity, including identification of an onsite complaint manager. The manager shall determine the cause of the complaints and shall take prompt action to correct the problem. Planning and Zoning shall be informed who the Manager is prior to the issuance of the first permit issued by Building Services.
- Any damage to the street caused by heavy equipment, or as a result of this construction, shall be repaired, at the project applicant's expense, within one week of the occurrence of the damage (or excessive wear), unless further damage/excessive wear may continue; in such case, repair shall occur prior to issuance of a final inspection of the building permit. All damage that is a threat to public health or safety shall be repaired immediately. The street shall be restored to its condition prior to the new construction as established by the City Building Inspector and/or photo documentation, at the project sponsor's expense, before the issuance of a Certificate of Occupancy.
- Any heavy equipment brought to the construction site shall be transported by truck, where feasible.
- No materials or equipment shall be stored on the traveled roadway at any time.
- Prior to construction, a portable toilet facility and a debris box shall be installed on the site, and properly maintained through project completion.
- All equipment shall be equipped with mufflers.



- Prior to the end of each work day during construction, the contractor or contractors shall pick up and properly dispose of all litter resulting from or related to the project, whether located on the property, within the public rights-of-way, or properties of adjacent or nearby neighbors.

The environmental consequences of Recommendation TRANS-12 have been considered. The project would not result in any substantial adverse effect on the circulation system during construction of the project. Implementation of Recommendation TRANS-12 would not result in any significant CEQA impacts.

## CMP AND MTS ROADWAY SEGMENTS

Alameda CTC conducts periodic monitoring of the major roadways on the Congestion Management Program (CMP) and Metropolitan Transportation System (MTS) in Alameda County. The most recent Level of Service Monitoring on the Congestion Management Program Roadway Network was released in November 2016. The ACTC monitoring report assesses existing freeway operations through commercial speed data or “floating car” travel time surveys, which are conducted on all freeway segments and major arterials during the evening peak hours (4:00 PM to 6:00 PM). Based on the results of these surveys, ACTC assigns a LOS grade to each segment according to the method described in the 1985 HCM with the exception that Tier 2 arterial segments which are reported using HCM 2000. Any freeway segment with an average speed less than 30 miles per hour is assigned LOS F. Freeway ramps and special freeway segments with speeds below 50% of free flow speed are assigned LOS F. The travel time surveys concluded that 40 freeway segments, five freeway ramps and special freeway segments, and 16 arterial segments within Alameda County operate at LOS F during the PM peak hours, including the following 14 freeway segments and six freeway ramp and special freeway segments in the project vicinity:

- Freeway Segments
  - I-80 eastbound: Toll Plaza to I-580 (grandfathered)<sup>1</sup>
  - I-580 eastbound: I-80 to I-980 (grandfathered segment)
  - I-580 eastbound: I-980 to Harrison Street

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<sup>1</sup> Grandfathered segments operated at LOS F during the initial ACTC data collection effort in 1991, and are therefore “grandfathered,” meaning that they are exempt from LOS standards. The other segments are not exempt meaning that they operate at unacceptable conditions based on ACTC standards. ACTC requires preparation of a deficiency plan for non-grandfathered segments that fail to meet the established standards.



- I-580 eastbound: Harrison Street to Lakeshore Avenue
- I-580 eastbound: Coolidge Avenue to SR 13
- I-580 westbound: SR 24 to I-80/580 Split (grandfathered segment)
- I-880 northbound: between I-80 Ramps
- I-880 southbound: between I-80 merge to Jct. 980
- I-880 southbound: between I-980 to 23rd Avenue
- SR 13 northbound: Moraga Avenue to Hiller Drive
- SR 13 southbound: Redwood Road to I 580
- SR 24 eastbound: I-580 to Broadway/SR 13 (grandfathered segment)
- SR 24 eastbound: Broadway/SR 13 to Caldecott Tunnel (grandfathered segment)
- SR 24 eastbound: Caldecott Tunnel to Fish Ranch Road (grandfathered segment)
- Freeway Ramps
  - I-80/I 580 Interchange: I-580 westbound to I-80 northbound
  - I-580/SR 24 Interchange: I-580 westbound to SR 24 eastbound
  - I-580/SR 24 Interchange: SR 24 westbound to I-580 eastbound
  - SR 13/SR 24 Interchange: SR 13 northbound to SR 24 eastbound (grandfathered segment)
  - I-880/SR 260 Connection: SR 260 eastbound to I 880 northbound
  - I-880 northbound off-ramp to 5th Street/Broadway intersection

In addition, the travel time surveys concluded that 28 freeway segments, three freeway ramps and special freeway segments, and six arterial segments within Alameda County operate at LOS F during the AM peak hours, including the following eight freeway segments and one freeway ramp in the project vicinity:

- Freeway Segments
  - I-80 westbound: I 580 to Toll Plaza
  - I-80 westbound: Toll Plaza to San Francisco County
  - I-580 westbound: Foothill Boulevard to MacArthur Blvd/SR 13
  - I-580 westbound: SR 13 to Fruitvale Avenue
  - I-580 westbound: SR 24 to I 880/580
  - I-880 northbound: SR 112 to Hegenberger Road



- I-880 northbound: Hegenberger Road to High Street/42nd Avenue
- I-880 northbound: High Street/42nd Avenue to 23rd Avenue
- Freeway Ramps
  - I-880/SR 260 Connection: SR 260 eastbound to I 880 northbound

Based on the LOS Monitoring Report, all non-freeway CMP and MTS roadway segments in the project vicinity operate at LOS E or better during both AM and PM peak hours.

## CONGESTION MANAGEMENT PROGRAM (CMP) ANALYSIS

Since the proposed Plan, as defined in the Project description, will generate more than 100 peak-hour trips, assessment of the impacts of the Project on the regional transportation system requires the use of the Alameda County Transportation Commission (Alameda CTC) Countywide Travel Demand Model for year 2020 and 2040 conditions. The impact analysis for roadways includes MTS<sup>1</sup> roadways and CMP-designated roadways, plus several local MTS streets in the vicinity of the Project. The scope of the MTS and CMP facility analysis conforms with the guidelines in the 2015 Alameda County Congestion Management Program. The year 2020 and 2040 traffic forecasts are derived from the version of the countywide model that was current at the time the Notice of Preparation (NOP) was issued December 2016.

The Alameda CTC Model used in this study is a regional travel demand model that uses socio-economic data and roadway and transit network assumptions to forecast traffic volumes and transit ridership using a four-step modeling process that includes trip generation, trip distribution, mode split, and trip assignment. This process accounts for changes in travel patterns due to future growth and balances trip productions and attractions. This version of the Countywide Model is based on Association of Bay Area Governments (ABAG) Projections 2013 land uses for 2020 and 2040. For the purposes of this CMP and MTS Analysis, the proposed 2100 Telegraph Avenue project is assumed not to be included in the Alameda CTC Model to present a more conservative analysis. The traffic forecasts for the 2020 and 2040 scenarios were extracted from the ACTC Model for the CMP and MTS roadway segments from that model and used as the "No Project" forecasts. Vehicle trips generated by the project were added to the "No Project" forecasts to estimate the "Plus Project" forecasts.

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<sup>1</sup> The Metropolitan Transportation System (MTS) is a network of highways (including highways identified as CMP facilities) and roadways that are part of a regional transit system.



The CMP and MTS segments were assessed using a v/c ratio methodology. For freeway segments, a per-lane capacity of 2,000 vehicles per hour (vph) was used, consistent with the latest CMP documents. For surface streets, a per-lane capacity of 800 vph was used. Roadway segments with a v/c ratio greater than 1.00 signify LOS F.

The "Plus Project" results were compared to the baseline results for the 2020 and 2040 horizon years. **Attachment D** provides the 2020 and 2040 peak hour volumes, v/c ratios and the corresponding levels of service for No Project and Plus Project conditions.

The project would contribute to 2020 and 2040 increases in traffic congestion on MTS roadways. However, the 2100 Telegraph Avenue project would not cause a roadway segment on the MTS to degrade from LOS E or better to LOS F. The project also would not increase the v/c ratio by more than 3 percent for roadway segments that would operate at LOS F without the project. The proposed project would not have a noticeable effect at the study roadways under Existing Plus Project conditions.

## ATTACHMENTS

Attachment A – AM and PM Peak Hour Multimodal Intersection Volumes and Geometries

Attachment B – Intersection Level of Service Calculations

Attachment C – TCQSM Model Inputs and Data Sources

Attachment D – CMP Volumes, V/C Ratios, and LOS

## **Attachment A**

Traffic Count Data Worksheets, Multimodal  
Intersection Volumes and Geometries

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-001 Northgate Ave/SR 24 Off Ramp & 27th St  
 Date : 5/26/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | Northgate Ave/SR 24 Off Ramp Southbound |             |             |          |             | 27th St Westbound |            |          |           |            | Northgate Ave/SR 24 Off Ramp Northbound |          |          |          |           | 27th St Eastbound |             |           |          |             | Total       | Uturns Total |
|--------------------|---|-------------|-------------|----------|-------------|-------------------|------------|----------|-----------|------------|---|----------|----------|----------|-----------|-------------------|-------------|-----------|----------|-------------|-------------|--------------|
|                    | LEFT                                    | THRU        | RIGHT       | UTURNS   | APP.TOTAL   | LEFT              | THRU       | RIGHT    | UTURNS    | APP.TOTAL  | LEFT                                    | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT              | THRU        | RIGHT     | UTURNS   | APP.TOTAL   |             |              |
| 7:00               | 100                                     | 178         | 45          | 0        | 323         | 3                 | 10         | 0        | 0         | 13         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 21          | 3         | 0        | 24          | 360         | 0            |
| 7:15               | 82                                      | 187         | 64          | 0        | 333         | 2                 | 13         | 0        | 0         | 15         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 28          | 3         | 0        | 31          | 379         | 0            |
| 7:30               | 123                                     | 209         | 69          | 0        | 401         | 1                 | 21         | 0        | 1         | 23         | 0                                       | 0        | 0        | 21       | 0         | 0                 | 54          | 2         | 0        | 56          | 480         | 1            |
| 7:45               | 122                                     | 221         | 86          | 0        | 429         | 1                 | 25         | 0        | 1         | 27         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 54          | 3         | 0        | 57          | 513         | 1            |
| <b>Total</b>       | <b>427</b>                              | <b>795</b>  | <b>264</b>  | <b>0</b> | <b>1486</b> | <b>7</b>          | <b>69</b>  | <b>0</b> | <b>2</b>  | <b>78</b>  | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>157</b>  | <b>11</b> | <b>0</b> | <b>168</b>  | <b>1732</b> | <b>2</b>     |
| 8:00               | 158                                     | 252         | 77          | 0        | 487         | 0                 | 38         | 0        | 2         | 40         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 64          | 3         | 0        | 67          | 594         | 2            |
| 8:15               | 175                                     | 243         | 104         | 0        | 522         | 3                 | 33         | 0        | 1         | 37         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 54          | 7         | 0        | 61          | 620         | 1            |
| 8:30               | 143                                     | 257         | 87          | 0        | 487         | 2                 | 36         | 0        | 3         | 41         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 56          | 2         | 0        | 58          | 586         | 3            |
| 8:45               | 166                                     | 268         | 95          | 0        | 529         | 2                 | 36         | 0        | 0         | 38         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 52          | 4         | 0        | 56          | 623         | 0            |
| <b>Total</b>       | <b>642</b>                              | <b>1020</b> | <b>363</b>  | <b>0</b> | <b>2025</b> | <b>7</b>          | <b>143</b> | <b>0</b> | <b>6</b>  | <b>156</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>226</b>  | <b>16</b> | <b>0</b> | <b>242</b>  | <b>2423</b> | <b>6</b>     |
| 16:00              | 81                                      | 92          | 48          | 0        | 221         | 4                 | 56         | 0        | 2         | 62         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 103         | 4         | 0        | 107         | 390         | 2            |
| 16:15              | 95                                      | 86          | 48          | 0        | 229         | 10                | 52         | 0        | 0         | 62         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 75          | 6         | 0        | 81          | 372         | 0            |
| 16:30              | 78                                      | 84          | 65          | 0        | 227         | 2                 | 53         | 0        | 3         | 58         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 100         | 12        | 0        | 112         | 397         | 3            |
| 16:45              | 107                                     | 99          | 58          | 0        | 264         | 5                 | 42         | 0        | 2         | 49         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 94          | 6         | 0        | 100         | 413         | 2            |
| <b>Total</b>       | <b>361</b>                              | <b>361</b>  | <b>219</b>  | <b>0</b> | <b>941</b>  | <b>21</b>         | <b>203</b> | <b>0</b> | <b>7</b>  | <b>231</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>372</b>  | <b>28</b> | <b>0</b> | <b>400</b>  | <b>1572</b> | <b>7</b>     |
| 17:00              | 106                                     | 86          | 55          | 0        | 247         | 6                 | 54         | 0        | 2         | 62         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 116         | 5         | 0        | 121         | 430         | 2            |
| 17:15              | 151                                     | 109         | 67          | 0        | 327         | 2                 | 74         | 0        | 0         | 76         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 108         | 10        | 0        | 118         | 521         | 0            |
| 17:30              | 148                                     | 116         | 78          | 0        | 342         | 5                 | 71         | 0        | 2         | 78         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 123         | 13        | 0        | 136         | 556         | 2            |
| 17:45              | 142                                     | 119         | 61          | 0        | 322         | 4                 | 59         | 0        | 3         | 66         | 0                                       | 0        | 0        | 0        | 0         | 0                 | 110         | 10        | 0        | 120         | 508         | 3            |
| <b>Total</b>       | <b>547</b>                              | <b>430</b>  | <b>261</b>  | <b>0</b> | <b>1238</b> | <b>17</b>         | <b>258</b> | <b>0</b> | <b>7</b>  | <b>282</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>457</b>  | <b>38</b> | <b>0</b> | <b>495</b>  | <b>2015</b> | <b>7</b>     |
| <b>Grand Total</b> | <b>1977</b>                             | <b>2606</b> | <b>1107</b> | <b>0</b> | <b>5690</b> | <b>52</b>         | <b>673</b> | <b>0</b> | <b>22</b> | <b>747</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>1212</b> | <b>93</b> | <b>0</b> | <b>1305</b> | <b>7742</b> | <b>22</b>    |
| Apprch %           | 34.7%                                   | 45.8%       | 19.5%       | 0.0%     |             | 7.0%              | 90.1%      | 0.0%     | 2.9%      |            | 0.0%                                    | 0.0%     | 0.0%     | 0.0%     |           | 0.0%              | 92.9%       | 7.1%      | 0.0%     |             |             |              |
| Total %            | 25.5%                                   | 33.7%       | 14.3%       | 0.0%     | 73.5%       | 0.7%              | 8.7%       | 0.0%     | 0.3%      | 9.6%       | 0.0%                                    | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%              | 15.7%       | 1.2%      | 0.0%     | 16.9%       | 100.0%      |              |

| AM PEAK HOUR                                      | Northgate Ave/SR 24 Off Ramp Southbound |       |       |        |           | 27th St Westbound |       |       |        |           | Northgate Ave/SR 24 Off Ramp Northbound |      |       |        |           | 27th St Eastbound |       |       |        |           | Total |
|---|---|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                                    | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                    | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |   |       |       |        |           |                   |       |       |        |           |   |      |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |   |       |       |        |           |                   |       |       |        |           |   |      |       |        |           |                   |       |       |        |           |       |
| 8:00  | 158                                     | 252   | 77    | 0      | 487       | 0                 | 38    | 0     | 2      | 40        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 64    | 3     | 0      | 67        | 594   |
| 8:15  | 175                                     | 243   | 104   | 0      | 522       | 3                 | 33    | 0     | 1      | 37        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 54    | 7     | 0      | 61        | 620   |
| 8:30  | 143                                     | 257   | 87    | 0      | 487       | 2                 | 36    | 0     | 3      | 41        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 56    | 2     | 0      | 58        | 586   |
| 8:45  | 166                                     | 268   | 95    | 0      | 529       | 2                 | 36    | 0     | 0      | 38        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 52    | 4     | 0      | 56        | 623   |
| Total Volume                                      | 642                                     | 1020  | 363   | 0      | 2025      | 7                 | 143   | 0     | 6      | 156       | 0                                       | 0    | 0     | 0      | 0         | 0                 | 226   | 16    | 0      | 242       | 2423  |
| % App Total                                       | 31.7%                                   | 50.4% | 17.9% | 0.0%   |           | 4.5%              | 91.7% | 0.0%  | 3.8%   |           | 0.0%                                    | 0.0% | 0.0%  | 0.0%   |           | 0.0%              | 93.4% | 6.6%  | 0.0%   |           |       |
| PHF   | .917                                    | .951  | .873  | .000   | .957      | .583              | .941  | .000  | .500   | .951      | .000                                    | .000 | .000  | .000   | .000      | .000              | .883  | .571  | .000   | .903      | .972  |

| PM PEAK HOUR                                      | Northgate Ave/SR 24 Off Ramp Southbound |       |       |        |           | 27th St Westbound |       |       |        |           | Northgate Ave/SR 24 Off Ramp Northbound |      |       |        |           | 27th St Eastbound |       |       |        |           | Total |
|---|---|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                                    | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                    | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |   |       |       |        |           |                   |       |       |        |           |   |      |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |   |       |       |        |           |                   |       |       |        |           |   |      |       |        |           |                   |       |       |        |           |       |
| 17:00   | 106                                     | 86    | 55    | 0      | 247       | 6                 | 54    | 0     | 2      | 62        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 116   | 5     | 0      | 121       | 430   |
| 17:15   | 151                                     | 109   | 67    | 0      | 327       | 2                 | 74    | 0     | 0      | 76        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 108   | 10    | 0      | 118       | 521   |
| 17:30   | 148                                     | 116   | 78    | 0      | 342       | 5                 | 71    | 0     | 2      | 78        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 123   | 13    | 0      | 136       | 556   |
| 17:45   | 142                                     | 119   | 61    | 0      | 322       | 4                 | 59    | 0     | 3      | 66        | 0                                       | 0    | 0     | 0      | 0         | 0                 | 110   | 10    | 0      | 120       | 508   |
| Total Volume                                      | 547                                     | 430   | 261   | 0      | 1238      | 17                | 258   | 0     | 7      | 282       | 0                                       | 0    | 0     | 0      | 0         | 0                 | 457   | 38    | 0      | 495       | 2015  |
| % App Total                                       | 44.2%                                   | 34.7% | 21.1% | 0.0%   |           | 6.0%              | 91.5% | 0.0%  | 2.5%   |           | 0.0%                                    | 0.0% | 0.0%  | 0.0%   |           | 0.0%              | 92.3% | 7.7%  | 0.0%   |           |       |
| PHF   | .906                                    | .903  | .837  | .000   | .905      | .708              | .872  | .000  | .583   | .904      | .000                                    | .000 | .000  | .000   | .000      | .000              | .929  | .731  | .000   | .910      | .906  |



# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-001 Northgate Ave/SR 24 Off Ramp & 27th St  
 Date : 5/26/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Northgate Ave/SR 24 Off Ramp Southbound |          |          |           |           | 27th St Westbound |           |          |          |           | Northgate Ave/SR 24 Off Ramp Northbound |          |          |           |           | 27th St Eastbound |           |          |          |           | Total      | Peds Total |
|--------------------|---|----------|----------|-----------|-----------|-------------------|-----------|----------|----------|-----------|---|----------|----------|-----------|-----------|-------------------|-----------|----------|----------|-----------|------------|------------|
|                    | LEFT                                    | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS     | APP.TOTAL | LEFT                                    | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS     | APP.TOTAL |            |            |
| 7:00               | 0                                       | 0        | 0        | 1         | 0         | 0                 | 1         | 0        | 0        | 1         | 0                                       | 0        | 0        | 1         | 0         | 0                 | 2         | 0        | 0        | 2         | 3          | 2          |
| 7:15               | 0                                       | 0        | 0        | 2         | 0         | 0                 | 1         | 0        | 0        | 1         | 0                                       | 0        | 0        | 2         | 0         | 0                 | 5         | 0        | 0        | 5         | 6          | 4          |
| 7:30               | 0                                       | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 4         | 0         | 0                 | 2         | 0        | 0        | 2         | 8          | 5          |
| 7:45               | 0                                       | 0        | 0        | 6         | 0         | 0                 | 4         | 0        | 0        | 4         | 0                                       | 0        | 0        | 2         | 0         | 0                 | 4         | 0        | 0        | 4         | 8          | 8          |
| <b>Total</b>       | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>10</b> | <b>0</b>  | <b>0</b>          | <b>12</b> | <b>0</b> | <b>0</b> | <b>12</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>9</b>  | <b>0</b>  | <b>0</b>          | <b>13</b> | <b>0</b> | <b>0</b> | <b>13</b> | <b>25</b>  | <b>19</b>  |
| 8:00               | 0                                       | 0        | 0        | 4         | 0         | 0                 | 4         | 0        | 0        | 4         | 0                                       | 0        | 0        | 2         | 0         | 0                 | 2         | 0        | 0        | 2         | 6          | 6          |
| 8:15               | 0                                       | 0        | 0        | 2         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 4         | 0         | 0                 | 7         | 0        | 0        | 7         | 13         | 6          |
| 8:30               | 0                                       | 0        | 0        | 2         | 0         | 0                 | 8         | 0        | 0        | 8         | 0                                       | 0        | 0        | 6         | 0         | 0                 | 3         | 0        | 0        | 3         | 11         | 8          |
| 8:45               | 0                                       | 0        | 0        | 0         | 0         | 0                 | 5         | 0        | 0        | 5         | 0                                       | 0        | 0        | 2         | 0         | 0                 | 4         | 0        | 0        | 4         | 9          | 2          |
| <b>Total</b>       | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>8</b>  | <b>0</b>  | <b>0</b>          | <b>23</b> | <b>0</b> | <b>0</b> | <b>23</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>14</b> | <b>0</b>  | <b>0</b>          | <b>16</b> | <b>0</b> | <b>0</b> | <b>16</b> | <b>39</b>  | <b>22</b>  |
| 16:00              | 0                                       | 0        | 0        | 3         | 0         | 0                 | 4         | 0        | 0        | 4         | 0                                       | 0        | 0        | 1         | 0         | 0                 | 0         | 0        | 0        | 0         | 4          | 4          |
| 16:15              | 0                                       | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 2         | 0         | 0                 | 4         | 0        | 0        | 4         | 10         | 3          |
| 16:30              | 0                                       | 0        | 0        | 0         | 0         | 0                 | 7         | 0        | 0        | 7         | 0                                       | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 13         | 1          |
| 16:45              | 0                                       | 0        | 0        | 3         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 4         | 0         | 0                 | 6         | 0        | 0        | 6         | 12         | 7          |
| <b>Total</b>       | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>7</b>  | <b>0</b>  | <b>0</b>          | <b>23</b> | <b>0</b> | <b>0</b> | <b>23</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>8</b>  | <b>0</b>  | <b>0</b>          | <b>16</b> | <b>0</b> | <b>0</b> | <b>16</b> | <b>39</b>  | <b>15</b>  |
| 17:00              | 0                                       | 0        | 0        | 0         | 0         | 0                 | 3         | 0        | 0        | 3         | 0                                       | 0        | 0        | 3         | 0         | 0                 | 7         | 0        | 0        | 7         | 10         | 3          |
| 17:15              | 0                                       | 0        | 0        | 3         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 7         | 0         | 0                 | 4         | 0        | 0        | 4         | 10         | 10         |
| 17:30              | 0                                       | 0        | 0        | 3         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                       | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 12         | 4          |
| 17:45              | 0                                       | 0        | 0        | 1         | 0         | 0                 | 5         | 0        | 0        | 5         | 0                                       | 0        | 0        | 7         | 0         | 0                 | 7         | 0        | 0        | 7         | 12         | 8          |
| <b>Total</b>       | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>7</b>  | <b>0</b>  | <b>0</b>          | <b>20</b> | <b>0</b> | <b>0</b> | <b>20</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>18</b> | <b>0</b>  | <b>0</b>          | <b>24</b> | <b>0</b> | <b>0</b> | <b>24</b> | <b>44</b>  | <b>25</b>  |
| <b>Grand Total</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>32</b> | <b>0</b>  | <b>0</b>          | <b>78</b> | <b>0</b> | <b>0</b> | <b>78</b> | <b>0</b>                                | <b>0</b> | <b>0</b> | <b>49</b> | <b>0</b>  | <b>0</b>          | <b>69</b> | <b>0</b> | <b>0</b> | <b>69</b> | <b>147</b> | <b>81</b>  |
| Apprch %           | 0.0%                                    | 0.0%     | 0.0%     |           |           | 0.0%              | 100.0%    | 0.0%     |          |           | 0.0%                                    | 0.0%     | 0.0%     |           |           | 0.0%              | 100.0%    | 0.0%     |          |           |            |            |
| Total %            | 0.0%                                    | 0.0%     | 0.0%     |           | 0.0%      | 0.0%              | 53.1%     | 0.0%     |          | 53.1%     | 0.0%                                    | 0.0%     | 0.0%     |           | 0.0%      | 0.0%              | 46.9%     | 0.0%     |          | 46.9%     | 100.0%     |            |

| AM PEAK HOUR                                      | Northgate Ave/SR 24 Off Ramp Southbound |      |       |      |           | 27th St Westbound |        |       |      |           | Northgate Ave/SR 24 Off Ramp Northbound |      |       |      |           | 27th St Eastbound |        |       |      |           | Total |
|---|---|------|-------|------|-----------|-------------------|--------|-------|------|-----------|---|------|-------|------|-----------|-------------------|--------|-------|------|-----------|-------|
| START TIME  | LEFT                                    | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                                    | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |   |      |       |      |           |                   |        |       |      |           |   |      |       |      |           |                   |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |   |      |       |      |           |                   |        |       |      |           |   |      |       |      |           |                   |        |       |      |           |       |
| 8:00  | 0                                       | 0    | 0     | 4    | 0         | 0                 | 4      | 0     | 0    | 4         | 0                                       | 0    | 0     | 2    | 0         | 0                 | 2      | 0     | 0    | 2         | 6     |
| 8:15  | 0                                       | 0    | 0     | 2    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                       | 0    | 0     | 4    | 0         | 0                 | 7      | 0     | 0    | 7         | 13    |
| 8:30  | 0                                       | 0    | 0     | 2    | 0         | 0                 | 8      | 0     | 0    | 8         | 0                                       | 0    | 0     | 6    | 0         | 0                 | 3      | 0     | 0    | 3         | 11    |
| 8:45  | 0                                       | 0    | 0     | 0    | 0         | 0                 | 5      | 0     | 0    | 5         | 0                                       | 0    | 0     | 2    | 0         | 0                 | 4      | 0     | 0    | 4         | 9     |
| Total Volume                                      | 0                                       | 0    | 0     | 8    | 0         | 0                 | 23     | 0     | 0    | 23        | 0                                       | 0    | 0     | 14   | 0         | 0                 | 16     | 0     | 0    | 16        | 39    |
| % App Total                                       | 0.0%                                    | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           | 0.0%                                    | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           |       |
| PHF   | .000                                    | .000 | .000  |      | .000      | .000              | .719   | .000  |      | .719      | .000                                    | .000 | .000  |      | .000      | .000              | .571   | .000  |      | .571      | .750  |

| PM PEAK HOUR                                      | Northgate Ave/SR 24 Off Ramp Southbound |      |       |      |           | 27th St Westbound |        |       |      |           | Northgate Ave/SR 24 Off Ramp Northbound |      |       |      |           | 27th St Eastbound |        |       |      |           | Total |
|---|---|------|-------|------|-----------|-------------------|--------|-------|------|-----------|---|------|-------|------|-----------|-------------------|--------|-------|------|-----------|-------|
| START TIME  | LEFT                                    | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                                    | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |   |      |       |      |           |                   |        |       |      |           |   |      |       |      |           |                   |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |   |      |       |      |           |                   |        |       |      |           |   |      |       |      |           |                   |        |       |      |           |       |
| 17:00   | 0                                       | 0    | 0     | 0    | 0         | 0                 | 3      | 0     | 0    | 3         | 0                                       | 0    | 0     | 3    | 0         | 0                 | 7      | 0     | 0    | 7         | 10    |
| 17:15   | 0                                       | 0    | 0     | 3    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                       | 0    | 0     | 7    | 0         | 0                 | 4      | 0     | 0    | 4         | 10    |
| 17:30   | 0                                       | 0    | 0     | 3    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                       | 0    | 0     | 1    | 0         | 0                 | 6      | 0     | 0    | 6         | 12    |
| 17:45   | 0                                       | 0    | 0     | 1    | 0         | 0                 | 5      | 0     | 0    | 5         | 0                                       | 0    | 0     | 7    | 0         | 0                 | 7      | 0     | 0    | 7         | 12    |
| Total Volume                                      | 0                                       | 0    | 0     | 7    | 0         | 0                 | 20     | 0     | 0    | 20        | 0                                       | 0    | 0     | 18   | 0         | 0                 | 24     | 0     | 0    | 24        | 44    |
| % App Total                                       | 0.0%                                    | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           | 0.0%                                    | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           |       |
| PHF   | .000                                    | .000 | .000  |      | .000      | .000              | .833   | .000  |      | .833      | .000                                    | .000 | .000  |      | .000      | .000              | .857   | .000  |      | .857      | .917  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-002 Northgate Ave/SR 24 On Ramp & 27th St  
 Date : 5/26/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | Northgate Ave/SR 24 On Ramp Southbound |          |          |          |           | 27th St Westbound |            |             |           |             | Northgate Ave/SR 24 On Ramp Northbound |             |            |          |             | 27th St Eastbound |             |          |          |             | Total       | Uturns Total |
|--------------------|--|----------|----------|----------|-----------|-------------------|------------|-------------|-----------|-------------|--|-------------|------------|----------|-------------|-------------------|-------------|----------|----------|-------------|-------------|--------------|
|                    | LEFT                                   | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT              | THRU       | RIGHT       | UTURNS    | APP.TOTAL   | LEFT                                   | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU        | RIGHT    | UTURNS   | APP.TOTAL   |             |              |
| 7:00               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 8          | 37          | 0         | 45          | 2                                      | 33          | 4          | 0        | 39          | 21                | 99          | 0        | 0        | 120         | 204         | 0            |
| 7:15               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 17         | 44          | 1         | 62          | 0                                      | 47          | 4          | 0        | 51          | 23                | 89          | 0        | 0        | 112         | 225         | 1            |
| 7:30               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 21         | 82          | 0         | 103         | 0                                      | 52          | 0          | 0        | 52          | 44                | 125         | 0        | 1        | 170         | 325         | 1            |
| 7:45               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 25         | 69          | 0         | 94          | 1                                      | 60          | 3          | 0        | 64          | 39                | 146         | 0        | 0        | 185         | 343         | 0            |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>71</b>  | <b>232</b>  | <b>1</b>  | <b>304</b>  | <b>3</b>                               | <b>192</b>  | <b>11</b>  | <b>0</b> | <b>206</b>  | <b>127</b>        | <b>459</b>  | <b>0</b> | <b>1</b> | <b>587</b>  | <b>1097</b> | <b>2</b>     |
| 8:00               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 36         | 75          | 0         | 111         | 7                                      | 92          | 2          | 0        | 101         | 50                | 173         | 0        | 0        | 223         | 435         | 0            |
| 8:15               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 32         | 71          | 0         | 103         | 2                                      | 82          | 2          | 0        | 86          | 40                | 184         | 0        | 1        | 225         | 414         | 1            |
| 8:30               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 42         | 84          | 0         | 126         | 1                                      | 56          | 4          | 0        | 61          | 37                | 169         | 0        | 0        | 206         | 393         | 0            |
| 8:45               | 0                                      | 0        | 0        | 0        | 0         | 0                 | 32         | 77          | 1         | 110         | 4                                      | 77          | 3          | 0        | 84          | 38                | 179         | 0        | 0        | 217         | 411         | 1            |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>142</b> | <b>307</b>  | <b>1</b>  | <b>450</b>  | <b>14</b>                              | <b>307</b>  | <b>11</b>  | <b>0</b> | <b>332</b>  | <b>165</b>        | <b>705</b>  | <b>0</b> | <b>1</b> | <b>871</b>  | <b>1653</b> | <b>2</b>     |
| 16:00              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 57         | 131         | 1         | 189         | 6                                      | 179         | 14         | 0        | 199         | 50                | 134         | 0        | 0        | 184         | 572         | 1            |
| 16:15              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 54         | 120         | 1         | 175         | 7                                      | 128         | 8          | 0        | 143         | 46                | 119         | 0        | 0        | 165         | 483         | 1            |
| 16:30              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 51         | 132         | 2         | 185         | 7                                      | 144         | 12         | 0        | 163         | 47                | 147         | 0        | 0        | 194         | 542         | 2            |
| 16:45              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 52         | 121         | 1         | 174         | 4                                      | 114         | 15         | 0        | 133         | 40                | 155         | 0        | 0        | 195         | 502         | 1            |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>214</b> | <b>504</b>  | <b>5</b>  | <b>723</b>  | <b>24</b>                              | <b>565</b>  | <b>49</b>  | <b>0</b> | <b>638</b>  | <b>183</b>        | <b>555</b>  | <b>0</b> | <b>0</b> | <b>738</b>  | <b>2099</b> | <b>5</b>     |
| 17:00              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 52         | 135         | 1         | 188         | 9                                      | 162         | 25         | 0        | 196         | 44                | 181         | 0        | 0        | 225         | 609         | 1            |
| 17:15              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 67         | 117         | 0         | 184         | 9                                      | 142         | 24         | 0        | 175         | 40                | 208         | 0        | 1        | 249         | 608         | 1            |
| 17:30              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 60         | 108         | 2         | 170         | 12                                     | 137         | 25         | 0        | 174         | 55                | 228         | 0        | 0        | 283         | 627         | 2            |
| 17:45              | 0                                      | 0        | 0        | 0        | 0         | 0                 | 59         | 88          | 0         | 147         | 7                                      | 103         | 17         | 0        | 127         | 33                | 219         | 0        | 2        | 254         | 528         | 2            |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>238</b> | <b>448</b>  | <b>3</b>  | <b>689</b>  | <b>37</b>                              | <b>544</b>  | <b>91</b>  | <b>0</b> | <b>672</b>  | <b>172</b>        | <b>836</b>  | <b>0</b> | <b>3</b> | <b>1011</b> | <b>2372</b> | <b>6</b>     |
| <b>Grand Total</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>665</b> | <b>1491</b> | <b>10</b> | <b>2166</b> | <b>78</b>                              | <b>1608</b> | <b>162</b> | <b>0</b> | <b>1848</b> | <b>647</b>        | <b>2555</b> | <b>0</b> | <b>5</b> | <b>3207</b> | <b>7221</b> | <b>15</b>    |
| Apprch %           | 0.0%                                   | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%              | 30.7%      | 68.8%       | 0.5%      | 30.0%       | 4.2%                                   | 87.0%       | 8.8%       | 0.0%     | 25.6%       | 20.2%             | 79.7%       | 0.0%     | 0.2%     | 44.4%       | 100.0%      |              |
| Total %            | 0.0%                                   | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%              | 9.2%       | 20.6%       | 0.1%      | 30.0%       | 1.1%                                   | 22.3%       | 2.2%       | 0.0%     | 25.6%       | 9.0%              | 35.4%       | 0.0%     | 0.1%     | 44.4%       | 100.0%      |              |

| AM PEAK HOUR                                      | Northgate Ave/SR 24 On Ramp Southbound |      |       |        |           | 27th St Westbound |       |       |        |           | Northgate Ave/SR 24 On Ramp Northbound |       |       |        |           | 27th St Eastbound |       |       |        |           | Total  |  |
|---|--|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                                   | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 08:00 to 09:00            |  |      |       |        |           |                   |       |       |        |           |  |       |       |        |           |                   |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 08:00 |  |      |       |        |           |                   |       |       |        |           |  |       |       |        |           |                   |       |       |        |           |        |  |
| 8:00  | 0                                      | 0    | 0     | 0      | 0         | 0                 | 36    | 75    | 0      | 111       | 7                                      | 92    | 2     | 0      | 101       | 50                | 173   | 0     | 0      | 223       | 435    |  |
| 8:15  | 0                                      | 0    | 0     | 0      | 0         | 0                 | 32    | 71    | 0      | 103       | 2                                      | 82    | 2     | 0      | 86        | 40                | 184   | 0     | 1      | 225       | 414    |  |
| 8:30  | 0                                      | 0    | 0     | 0      | 0         | 0                 | 42    | 84    | 0      | 126       | 1                                      | 56    | 4     | 0      | 61        | 37                | 169   | 0     | 0      | 206       | 393    |  |
| 8:45  | 0                                      | 0    | 0     | 0      | 0         | 0                 | 32    | 77    | 1      | 110       | 4                                      | 77    | 3     | 0      | 84        | 38                | 179   | 0     | 0      | 217       | 411    |  |
| Total Volume                                      | 0                                      | 0    | 0     | 0      | 0         | 0                 | 142   | 307   | 1      | 450       | 14                                     | 307   | 11    | 0      | 332       | 165               | 705   | 0     | 1      | 871       | 1653   |  |
| % App Total                                       | 0.0%                                   | 0.0% | 0.0%  | 0.0%   | 0.0%      | 0.0%              | 31.6% | 68.2% | 0.2%   | 30.0%     | 4.2%                                   | 92.5% | 3.3%  | 0.0%   | 25.6%     | 18.9%             | 80.9% | 0.0%  | 0.1%   | 44.4%     | 100.0% |  |
| PHF   | .000                                   | .000 | .000  | .000   | .000      | .000              | .845  | .914  | .250   | .893      | .500                                   | .834  | .688  | .000   | .822      | .825              | .958  | .000  | .250   | .968      | .950   |  |

| PM PEAK HOUR                                      | Northgate Ave/SR 24 On Ramp Southbound |      |       |        |           | 27th St Westbound |       |       |        |           | Northgate Ave/SR 24 On Ramp Northbound |       |       |        |           | 27th St Eastbound |       |       |        |           | Total  |  |
|---|--|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                                   | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 17:00 to 18:00            |  |      |       |        |           |                   |       |       |        |           |  |       |       |        |           |                   |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 17:00 |  |      |       |        |           |                   |       |       |        |           |  |       |       |        |           |                   |       |       |        |           |        |  |
| 17:00   | 0                                      | 0    | 0     | 0      | 0         | 0                 | 52    | 135   | 1      | 188       | 9                                      | 162   | 25    | 0      | 196       | 44                | 181   | 0     | 0      | 225       | 609    |  |
| 17:15   | 0                                      | 0    | 0     | 0      | 0         | 0                 | 67    | 117   | 0      | 184       | 9                                      | 142   | 24    | 0      | 175       | 40                | 208   | 0     | 1      | 249       | 608    |  |
| 17:30   | 0                                      | 0    | 0     | 0      | 0         | 0                 | 60    | 108   | 2      | 170       | 12                                     | 137   | 25    | 0      | 174       | 55                | 228   | 0     | 0      | 283       | 627    |  |
| 17:45   | 0                                      | 0    | 0     | 0      | 0         | 0                 | 59    | 88    | 0      | 147       | 7                                      | 103   | 17    | 0      | 127       | 33                | 219   | 0     | 2      | 254       | 528    |  |
| Total Volume                                      | 0                                      | 0    | 0     | 0      | 0         | 0                 | 238   | 448   | 3      | 689       | 37                                     | 544   | 91    | 0      | 672       | 172               | 836   | 0     | 3      | 1011      | 2372   |  |
| % App Total                                       | 0.0%                                   | 0.0% | 0.0%  | 0.0%   | 0.0%      | 0.0%              | 34.5% | 65.0% | 0.4%   | 30.0%     | 5.5%                                   | 81.0% | 13.5% | 0.0%   | 25.6%     | 17.0%             | 82.7% | 0.0%  | 0.3%   | 44.4%     | 100.0% |  |
| PHF   | .000                                   | .000 | .000  | .000   | .000      | .000              | .888  | .830  | .375   | .916      | .771                                   | .840  | .910  | .000   | .857      | .782              | .917  | .000  | .375   | .893      | .946   |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-002 Northgate Ave/SR 24 On Ramp & 27th St  
 Date : 5/26/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Northgate Ave/SR 24 On Ramp Southbound |          |          |           |           | 27th St Westbound |           |          |          |           | Northgate Ave/SR 24 On Ramp Northbound |          |          |           |           | 27th St Eastbound |           |          |          |           | Total      | Peds Total |
|--------------------|--|----------|----------|-----------|-----------|-------------------|-----------|----------|----------|-----------|--|----------|----------|-----------|-----------|-------------------|-----------|----------|----------|-----------|------------|------------|
|                    | LEFT                                   | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS     | APP.TOTAL | LEFT                                   | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS     | APP.TOTAL |            |            |
| 7:00               | 0                                      | 0        | 0        | 1         | 0         | 0                 | 1         | 0        | 0        | 1         | 0                                      | 0        | 0        | 1         | 0         | 0                 | 2         | 0        | 0        | 2         | 3          | 2          |
| 7:15               | 0                                      | 0        | 0        | 2         | 0         | 0                 | 2         | 0        | 0        | 2         | 0                                      | 0        | 0        | 3         | 0         | 0                 | 4         | 0        | 0        | 4         | 6          | 5          |
| 7:30               | 0                                      | 0        | 0        | 1         | 0         | 0                 | 5         | 0        | 0        | 5         | 0                                      | 0        | 0        | 2         | 0         | 0                 | 2         | 0        | 0        | 2         | 7          | 3          |
| 7:45               | 0                                      | 0        | 0        | 9         | 0         | 0                 | 4         | 0        | 1        | 4         | 0                                      | 0        | 0        | 3         | 0         | 0                 | 4         | 0        | 0        | 4         | 8          | 13         |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>13</b> | <b>0</b>  | <b>0</b>          | <b>12</b> | <b>0</b> | <b>1</b> | <b>12</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>9</b>  | <b>0</b>  | <b>0</b>          | <b>12</b> | <b>0</b> | <b>0</b> | <b>12</b> | <b>24</b>  | <b>23</b>  |
| 8:00               | 0                                      | 0        | 0        | 3         | 0         | 0                 | 5         | 0        | 1        | 5         | 0                                      | 0        | 0        | 7         | 0         | 0                 | 3         | 0        | 0        | 3         | 8          | 11         |
| 8:15               | 0                                      | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                      | 0        | 0        | 4         | 0         | 0                 | 8         | 0        | 0        | 8         | 14         | 5          |
| 8:30               | 0                                      | 0        | 0        | 2         | 0         | 0                 | 8         | 0        | 0        | 8         | 0                                      | 0        | 0        | 4         | 0         | 0                 | 3         | 0        | 0        | 3         | 11         | 6          |
| 8:45               | 0                                      | 0        | 0        | 0         | 0         | 0                 | 2         | 0        | 0        | 2         | 0                                      | 0        | 0        | 4         | 0         | 0                 | 4         | 0        | 0        | 4         | 6          | 4          |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>6</b>  | <b>0</b>  | <b>0</b>          | <b>21</b> | <b>0</b> | <b>1</b> | <b>21</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>19</b> | <b>0</b>  | <b>0</b>          | <b>18</b> | <b>0</b> | <b>0</b> | <b>18</b> | <b>39</b>  | <b>26</b>  |
| 16:00              | 0                                      | 0        | 0        | 2         | 0         | 0                 | 4         | 0        | 0        | 4         | 0                                      | 0        | 0        | 2         | 0         | 0                 | 0         | 0        | 0        | 0         | 4          | 4          |
| 16:15              | 0                                      | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                      | 0        | 0        | 2         | 0         | 0                 | 5         | 0        | 0        | 5         | 11         | 3          |
| 16:30              | 0                                      | 0        | 0        | 1         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                      | 0        | 0        | 0         | 0         | 0                 | 6         | 0        | 0        | 6         | 12         | 1          |
| 16:45              | 0                                      | 0        | 0        | 3         | 0         | 0                 | 5         | 0        | 2        | 5         | 0                                      | 0        | 0        | 3         | 0         | 0                 | 4         | 0        | 1        | 4         | 9          | 9          |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>7</b>  | <b>0</b>  | <b>0</b>          | <b>21</b> | <b>0</b> | <b>2</b> | <b>21</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>7</b>  | <b>0</b>  | <b>0</b>          | <b>15</b> | <b>0</b> | <b>1</b> | <b>15</b> | <b>36</b>  | <b>17</b>  |
| 17:00              | 0                                      | 0        | 0        | 1         | 0         | 0                 | 4         | 0        | 1        | 4         | 0                                      | 0        | 0        | 4         | 0         | 0                 | 7         | 0        | 0        | 7         | 11         | 6          |
| 17:15              | 0                                      | 0        | 0        | 1         | 0         | 0                 | 5         | 0        | 0        | 5         | 0                                      | 0        | 0        | 8         | 0         | 0                 | 3         | 0        | 0        | 3         | 8          | 9          |
| 17:30              | 0                                      | 0        | 0        | 4         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                      | 0        | 0        | 3         | 0         | 0                 | 7         | 0        | 0        | 7         | 13         | 7          |
| 17:45              | 0                                      | 0        | 0        | 2         | 0         | 0                 | 6         | 0        | 0        | 6         | 0                                      | 0        | 0        | 6         | 0         | 0                 | 8         | 0        | 0        | 8         | 14         | 8          |
| <b>Total</b>       | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>8</b>  | <b>0</b>  | <b>0</b>          | <b>21</b> | <b>0</b> | <b>1</b> | <b>21</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>21</b> | <b>0</b>  | <b>0</b>          | <b>25</b> | <b>0</b> | <b>0</b> | <b>25</b> | <b>46</b>  | <b>30</b>  |
| <b>Grand Total</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>34</b> | <b>0</b>  | <b>0</b>          | <b>75</b> | <b>0</b> | <b>5</b> | <b>75</b> | <b>0</b>                               | <b>0</b> | <b>0</b> | <b>56</b> | <b>0</b>  | <b>0</b>          | <b>70</b> | <b>0</b> | <b>1</b> | <b>70</b> | <b>145</b> | <b>96</b>  |
| Apprch %           | 0.0%                                   | 0.0%     | 0.0%     |           |           | 0.0%              | 100.0%    | 0.0%     |          |           | 0.0%                                   | 0.0%     | 0.0%     |           |           | 0.0%              | 100.0%    | 0.0%     |          |           |            |            |
| Total %            | 0.0%                                   | 0.0%     | 0.0%     |           | 0.0%      | 0.0%              | 51.7%     | 0.0%     |          | 51.7%     | 0.0%                                   | 0.0%     | 0.0%     |           | 0.0%      | 0.0%              | 48.3%     | 0.0%     |          | 48.3%     | 100.0%     |            |

| AM PEAK HOUR                                      | Northgate Ave/SR 24 On Ramp Southbound |      |       |      |           | 27th St Westbound |        |       |      |           | Northgate Ave/SR 24 On Ramp Northbound |      |       |      |           | 27th St Eastbound |        |       |      |           | Total |
|---|--|------|-------|------|-----------|-------------------|--------|-------|------|-----------|--|------|-------|------|-----------|-------------------|--------|-------|------|-----------|-------|
| START TIME  | LEFT                                   | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                                   | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |  |      |       |      |           |                   |        |       |      |           |  |      |       |      |           |                   |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |  |      |       |      |           |                   |        |       |      |           |  |      |       |      |           |                   |        |       |      |           |       |
| 8:00  | 0                                      | 0    | 0     | 3    | 0         | 0                 | 5      | 0     | 1    | 5         | 0                                      | 0    | 0     | 7    | 0         | 0                 | 3      | 0     | 0    | 3         | 8     |
| 8:15  | 0                                      | 0    | 0     | 1    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                      | 0    | 0     | 4    | 0         | 0                 | 8      | 0     | 0    | 8         | 14    |
| 8:30  | 0                                      | 0    | 0     | 2    | 0         | 0                 | 8      | 0     | 0    | 8         | 0                                      | 0    | 0     | 4    | 0         | 0                 | 3      | 0     | 0    | 3         | 11    |
| 8:45  | 0                                      | 0    | 0     | 0    | 0         | 0                 | 2      | 0     | 0    | 2         | 0                                      | 0    | 0     | 4    | 0         | 0                 | 4      | 0     | 0    | 4         | 6     |
| Total Volume                                      | 0                                      | 0    | 0     | 6    | 0         | 0                 | 21     | 0     | 1    | 21        | 0                                      | 0    | 0     | 19   | 0         | 0                 | 18     | 0     | 0    | 18        | 39    |
| % App Total                                       | 0.0%                                   | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           | 0.0%                                   | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           |       |
| PHF   | .000                                   | .000 | .000  |      | .000      | .000              | .656   | .000  |      | .656      | .000                                   | .000 | .000  |      | .000      | .563              | .000   |       | .563 | .696      |       |

| PM PEAK HOUR                                      | Northgate Ave/SR 24 On Ramp Southbound |      |       |      |           | 27th St Westbound |        |       |      |           | Northgate Ave/SR 24 On Ramp Northbound |      |       |      |           | 27th St Eastbound |        |       |      |           | Total |
|---|--|------|-------|------|-----------|-------------------|--------|-------|------|-----------|--|------|-------|------|-----------|-------------------|--------|-------|------|-----------|-------|
| START TIME  | LEFT                                   | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                                   | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |  |      |       |      |           |                   |        |       |      |           |  |      |       |      |           |                   |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |  |      |       |      |           |                   |        |       |      |           |  |      |       |      |           |                   |        |       |      |           |       |
| 17:00   | 0                                      | 0    | 0     | 1    | 0         | 0                 | 4      | 0     | 1    | 4         | 0                                      | 0    | 0     | 4    | 0         | 0                 | 7      | 0     | 0    | 7         | 11    |
| 17:15   | 0                                      | 0    | 0     | 1    | 0         | 0                 | 5      | 0     | 0    | 5         | 0                                      | 0    | 0     | 8    | 0         | 0                 | 3      | 0     | 0    | 3         | 8     |
| 17:30   | 0                                      | 0    | 0     | 4    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                      | 0    | 0     | 3    | 0         | 0                 | 7      | 0     | 0    | 7         | 13    |
| 17:45   | 0                                      | 0    | 0     | 2    | 0         | 0                 | 6      | 0     | 0    | 6         | 0                                      | 0    | 0     | 6    | 0         | 0                 | 8      | 0     | 0    | 8         | 14    |
| Total Volume                                      | 0                                      | 0    | 0     | 8    | 0         | 0                 | 21     | 0     | 1    | 21        | 0                                      | 0    | 0     | 21   | 0         | 0                 | 25     | 0     | 0    | 25        | 46    |
| % App Total                                       | 0.0%                                   | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           | 0.0%                                   | 0.0% | 0.0%  |      |           | 0.0%              | 100.0% | 0.0%  |      |           |       |
| PHF   | .000                                   | .000 | .000  |      | .000      | .000              | .875   | .000  |      | .875      | .000                                   | .000 | .000  |      | .000      | .781              | .000   |       | .781 | .821      |       |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-005 Telegraph Ave & 27th St

Date : 9/29/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Telegraph Ave Southbound |             |            |          |             | 27th St Westbound |             |            |           |             | Telegraph Ave Northbound |             |            |          |             | 27th St Eastbound |             |            |           |             | Total       | Utturns Total |
|--------------------|--------------------------|-------------|------------|----------|-------------|-------------------|-------------|------------|-----------|-------------|--------------------------|-------------|------------|----------|-------------|-------------------|-------------|------------|-----------|-------------|-------------|---------------|
|                    | LEFT                     | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU        | RIGHT      | UTURNS    | APP.TOTAL   | LEFT                     | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU        | RIGHT      | UTURNS    | APP.TOTAL   |             |               |
| 7:30               | 8                        | 35          | 30         | 0        | 73          | 3                 | 25          | 8          | 0         | 36          | 7                        | 50          | 2          | 0        | 59          | 55                | 58          | 11         | 1         | 125         | 293         | 1             |
| 7:45               | 6                        | 44          | 28         | 0        | 78          | 5                 | 34          | 19         | 3         | 61          | 12                       | 67          | 10         | 0        | 89          | 58                | 70          | 23         | 1         | 152         | 380         | 4             |
| 8:00               | 11                       | 57          | 33         | 0        | 101         | 9                 | 70          | 15         | 3         | 97          | 13                       | 63          | 5          | 0        | 81          | 63                | 86          | 18         | 1         | 168         | 447         | 4             |
| 8:15               | 7                        | 45          | 28         | 0        | 80          | 3                 | 64          | 27         | 3         | 97          | 16                       | 65          | 5          | 0        | 86          | 54                | 79          | 18         | 2         | 153         | 416         | 5             |
| <b>Total</b>       | <b>32</b>                | <b>181</b>  | <b>119</b> | <b>0</b> | <b>332</b>  | <b>20</b>         | <b>193</b>  | <b>69</b>  | <b>9</b>  | <b>291</b>  | <b>48</b>                | <b>245</b>  | <b>22</b>  | <b>0</b> | <b>315</b>  | <b>230</b>        | <b>293</b>  | <b>70</b>  | <b>5</b>  | <b>598</b>  | <b>1536</b> | <b>14</b>     |
| 8:30               | 14                       | 64          | 26         | 0        | 104         | 7                 | 53          | 30         | 1         | 91          | 16                       | 64          | 5          | 0        | 85          | 65                | 117         | 20         | 2         | 204         | 484         | 3             |
| 8:45               | 12                       | 63          | 41         | 0        | 116         | 8                 | 54          | 25         | 5         | 92          | 14                       | 77          | 7          | 0        | 98          | 72                | 93          | 28         | 1         | 194         | 500         | 6             |
| 9:00               | 12                       | 66          | 32         | 0        | 110         | 5                 | 59          | 23         | 4         | 91          | 15                       | 59          | 14         | 0        | 88          | 55                | 91          | 20         | 0         | 166         | 455         | 4             |
| 9:15               | 9                        | 56          | 26         | 0        | 91          | 14                | 66          | 15         | 5         | 100         | 13                       | 62          | 6          | 0        | 81          | 53                | 84          | 29         | 2         | 168         | 440         | 7             |
| <b>Total</b>       | <b>47</b>                | <b>249</b>  | <b>125</b> | <b>0</b> | <b>421</b>  | <b>34</b>         | <b>232</b>  | <b>93</b>  | <b>15</b> | <b>374</b>  | <b>58</b>                | <b>262</b>  | <b>32</b>  | <b>0</b> | <b>352</b>  | <b>245</b>        | <b>385</b>  | <b>97</b>  | <b>5</b>  | <b>732</b>  | <b>1879</b> | <b>20</b>     |
| 16:00              | 21                       | 84          | 74         | 0        | 179         | 4                 | 106         | 20         | 4         | 134         | 33                       | 72          | 12         | 0        | 117         | 39                | 89          | 23         | 3         | 154         | 584         | 7             |
| 16:15              | 27                       | 83          | 60         | 0        | 170         | 15                | 79          | 22         | 7         | 123         | 22                       | 87          | 10         | 0        | 119         | 30                | 87          | 20         | 1         | 138         | 550         | 8             |
| 16:30              | 21                       | 102         | 71         | 0        | 194         | 9                 | 103         | 30         | 4         | 146         | 27                       | 94          | 14         | 0        | 135         | 29                | 79          | 26         | 1         | 135         | 610         | 5             |
| 16:45              | 20                       | 73          | 69         | 0        | 162         | 7                 | 94          | 23         | 5         | 129         | 13                       | 78          | 16         | 0        | 107         | 44                | 111         | 29         | 2         | 186         | 584         | 7             |
| <b>Total</b>       | <b>89</b>                | <b>342</b>  | <b>274</b> | <b>0</b> | <b>705</b>  | <b>35</b>         | <b>382</b>  | <b>95</b>  | <b>20</b> | <b>532</b>  | <b>95</b>                | <b>331</b>  | <b>52</b>  | <b>0</b> | <b>478</b>  | <b>142</b>        | <b>366</b>  | <b>98</b>  | <b>7</b>  | <b>613</b>  | <b>2328</b> | <b>27</b>     |
| 17:00              | 27                       | 87          | 87         | 0        | 201         | 13                | 100         | 17         | 4         | 134         | 25                       | 86          | 11         | 1        | 123         | 26                | 95          | 27         | 1         | 149         | 607         | 6             |
| 17:15              | 11                       | 86          | 62         | 0        | 159         | 9                 | 107         | 19         | 3         | 138         | 30                       | 88          | 8          | 0        | 126         | 33                | 144         | 32         | 2         | 211         | 634         | 5             |
| 17:30              | 29                       | 84          | 51         | 0        | 164         | 4                 | 79          | 31         | 2         | 116         | 20                       | 77          | 19         | 0        | 116         | 34                | 164         | 22         | 0         | 220         | 616         | 2             |
| 17:45              | 23                       | 88          | 46         | 0        | 157         | 16                | 62          | 21         | 0         | 99          | 31                       | 92          | 11         | 0        | 134         | 30                | 126         | 18         | 2         | 176         | 566         | 2             |
| <b>Total</b>       | <b>90</b>                | <b>345</b>  | <b>246</b> | <b>0</b> | <b>681</b>  | <b>42</b>         | <b>348</b>  | <b>88</b>  | <b>9</b>  | <b>487</b>  | <b>106</b>               | <b>343</b>  | <b>49</b>  | <b>1</b> | <b>499</b>  | <b>123</b>        | <b>529</b>  | <b>98</b>  | <b>5</b>  | <b>756</b>  | <b>2423</b> | <b>15</b>     |
| <b>Grand Total</b> | <b>258</b>               | <b>1117</b> | <b>764</b> | <b>0</b> | <b>2139</b> | <b>131</b>        | <b>1155</b> | <b>345</b> | <b>53</b> | <b>1684</b> | <b>307</b>               | <b>1181</b> | <b>155</b> | <b>1</b> | <b>1644</b> | <b>740</b>        | <b>1573</b> | <b>364</b> | <b>22</b> | <b>2699</b> | <b>8166</b> | <b>76</b>     |
| Apprch %           | 12.1%                    | 52.2%       | 35.7%      | 0.0%     |             | 7.8%              | 68.6%       | 20.5%      | 3.1%      |             | 18.7%                    | 71.8%       | 9.4%       | 0.1%     |             | 27.4%             | 58.3%       | 13.5%      | 0.8%      |             |             |               |
| Total %            | 3.2%                     | 13.7%       | 9.4%       | 0.0%     | 26.2%       | 1.6%              | 14.1%       | 4.2%       | 0.6%      | 20.6%       | 3.8%                     | 14.5%       | 1.9%       | 0.0%     | 20.1%       | 9.1%              | 19.3%       | 4.5%       | 0.3%      | 33.1%       | 100.0%      |               |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 27th St Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | 27th St Eastbound |       |       |        |           | Total |  |
|---|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:30 to 09:30            |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |  |
| 8:30  | 14                       | 64    | 26    | 0      | 104       | 7                 | 53    | 30    | 1      | 91        | 16                       | 64    | 5     | 0      | 85        | 65                | 117   | 20    | 2      | 204       | 484   |  |
| 8:45  | 12                       | 63    | 41    | 0      | 116       | 8                 | 54    | 25    | 5      | 92        | 14                       | 77    | 7     | 0      | 98        | 72                | 93    | 28    | 1      | 194       | 500   |  |
| 9:00  | 12                       | 66    | 32    | 0      | 110       | 5                 | 59    | 23    | 4      | 91        | 15                       | 59    | 14    | 0      | 88        | 55                | 91    | 20    | 0      | 166       | 455   |  |
| 9:15  | 9                        | 56    | 26    | 0      | 91        | 14                | 66    | 15    | 5      | 100       | 13                       | 62    | 6     | 0      | 81        | 53                | 84    | 29    | 2      | 168       | 440   |  |
| Total Volume                                      | 47                       | 249   | 125   | 0      | 421       | 34                | 232   | 93    | 15     | 374       | 58                       | 262   | 32    | 0      | 352       | 245               | 385   | 97    | 5      | 732       | 1879  |  |
| % App Total                                       | 11.2%                    | 59.1% | 29.7% | 0.0%   |           | 9.1%              | 62.0% | 24.9% | 4.0%   |           | 16.5%                    | 74.4% | 9.1%  | 0.0%   |           | 33.5%             | 52.6% | 13.3% | 0.7%   |           |       |  |
| PHF   | .839                     | .943  | .762  | .000   | .907      | .607              | .879  | .775  | .750   | .935      | .906                     | .851  | .571  | .000   | .898      | .851              | .823  | .836  | .625   | .897      | .940  |  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 27th St Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | 27th St Eastbound |       |       |        |           | Total |  |
|---|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 16:45 to 17:45            |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 16:45 |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |  |
| 16:45   | 20                       | 73    | 69    | 0      | 162       | 7                 | 94    | 23    | 5      | 129       | 13                       | 78    | 16    | 0      | 107       | 44                | 111   | 29    | 2      | 186       | 584   |  |
| 17:00   | 27                       | 87    | 87    | 0      | 201       | 13                | 100   | 17    | 4      | 134       | 25                       | 86    | 11    | 1      | 123       | 26                | 95    | 27    | 1      | 149       | 607   |  |
| 17:15   | 11                       | 86    | 62    | 0      | 159       | 9                 | 107   | 19    | 3      | 138       | 30                       | 88    | 8     | 0      | 126       | 33                | 144   | 32    | 2      | 211       | 634   |  |
| 17:30   | 29                       | 84    | 51    | 0      | 164       | 4                 | 79    | 31    | 2      | 116       | 20                       | 77    | 19    | 0      | 116       | 34                | 164   | 22    | 0      | 220       | 616   |  |
| Total Volume                                      | 87                       | 330   | 269   | 0      | 686       | 33                | 380   | 90    | 14     | 517       | 88                       | 329   | 54    | 1      | 472       | 137               | 514   | 110   | 5      | 766       | 2441  |  |
| % App Total                                       | 12.7%                    | 48.1% | 39.2% | 0.0%   |           | 6.4%              | 73.5% | 17.4% | 2.7%   |           | 18.6%                    | 69.7% | 11.4% | 0.2%   |           | 17.9%             | 67.1% | 14.4% | 0.7%   |           |       |  |
| PHF   | .750                     | .948  | .773  | .000   | .853      | .635              | .888  | .726  | .700   | .937      | .733                     | .935  | .711  | .250   | .937      | .778              | .784  | .859  | .625   | .870      | .963  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-005 Telegraph Ave & 27th St

Date : 9/29/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |           |            | 27th St Westbound |           |           |            |           | Telegraph Ave Northbound |            |          |           |            | 27th St Eastbound |           |           |            |           | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|-----------|------------|-------------------|-----------|-----------|------------|-----------|--------------------------|------------|----------|-----------|------------|-------------------|-----------|-----------|------------|-----------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU      | RIGHT     | PEDS       | APP.TOTAL |            |            |
| 7:30               | 0                        | 13         | 0        | 1         | 13         | 0                 | 6         | 4         | 9          | 10        | 0                        | 1          | 0        | 2         | 1          | 0                 | 0         | 1         | 1          | 1         | 25         | 13         |
| 7:45               | 1                        | 14         | 0        | 6         | 15         | 0                 | 5         | 3         | 1          | 8         | 1                        | 3          | 1        | 3         | 5          | 1                 | 1         | 0         | 10         | 2         | 30         | 20         |
| 8:00               | 0                        | 14         | 0        | 5         | 14         | 2                 | 4         | 2         | 7          | 8         | 0                        | 6          | 0        | 4         | 6          | 0                 | 2         | 1         | 6          | 3         | 31         | 22         |
| 8:15               | 0                        | 24         | 0        | 0         | 24         | 0                 | 5         | 3         | 11         | 8         | 0                        | 6          | 0        | 5         | 6          | 0                 | 1         | 1         | 9          | 2         | 40         | 25         |
| <b>Total</b>       | <b>1</b>                 | <b>65</b>  | <b>0</b> | <b>12</b> | <b>66</b>  | <b>2</b>          | <b>20</b> | <b>12</b> | <b>28</b>  | <b>34</b> | <b>1</b>                 | <b>16</b>  | <b>1</b> | <b>14</b> | <b>18</b>  | <b>1</b>          | <b>4</b>  | <b>3</b>  | <b>26</b>  | <b>8</b>  | <b>126</b> | <b>80</b>  |
|                    |                          |            |          |           |            |                   |           |           |            |           |                          |            |          |           |            |                   |           |           |            |           |            |            |
| 8:30               | 0                        | 25         | 1        | 2         | 26         | 0                 | 2         | 1         | 9          | 3         | 1                        | 1          | 1        | 2         | 3          | 0                 | 0         | 1         | 6          | 1         | 33         | 19         |
| 8:45               | 3                        | 35         | 0        | 5         | 38         | 2                 | 2         | 1         | 7          | 5         | 1                        | 5          | 1        | 4         | 7          | 0                 | 3         | 1         | 6          | 4         | 54         | 22         |
| 9:00               | 0                        | 20         | 0        | 6         | 20         | 0                 | 2         | 0         | 13         | 2         | 0                        | 6          | 0        | 3         | 6          | 0                 | 0         | 2         | 8          | 2         | 30         | 30         |
| 9:15               | 1                        | 20         | 1        | 3         | 22         | 0                 | 4         | 2         | 4          | 6         | 0                        | 3          | 0        | 2         | 3          | 0                 | 2         | 0         | 9          | 2         | 33         | 18         |
| <b>Total</b>       | <b>4</b>                 | <b>100</b> | <b>2</b> | <b>16</b> | <b>106</b> | <b>2</b>          | <b>10</b> | <b>4</b>  | <b>33</b>  | <b>16</b> | <b>2</b>                 | <b>15</b>  | <b>2</b> | <b>11</b> | <b>19</b>  | <b>0</b>          | <b>5</b>  | <b>4</b>  | <b>29</b>  | <b>9</b>  | <b>150</b> | <b>89</b>  |
|                    |                          |            |          |           |            |                   |           |           |            |           |                          |            |          |           |            |                   |           |           |            |           |            |            |
| 16:00              | 1                        | 4          | 0        | 7         | 5          | 1                 | 0         | 0         | 13         | 1         | 2                        | 11         | 0        | 9         | 13         | 0                 | 0         | 0         | 15         | 0         | 19         | 44         |
| 16:15              | 3                        | 5          | 0        | 1         | 8          | 1                 | 4         | 1         | 3          | 6         | 2                        | 12         | 1        | 2         | 15         | 2                 | 3         | 1         | 6          | 6         | 35         | 12         |
| 16:30              | 0                        | 8          | 0        | 2         | 8          | 0                 | 3         | 3         | 2          | 6         | 3                        | 11         | 0        | 8         | 14         | 0                 | 1         | 1         | 12         | 2         | 30         | 24         |
| 16:45              | 0                        | 4          | 0        | 3         | 4          | 0                 | 3         | 6         | 10         | 9         | 0                        | 15         | 0        | 3         | 15         | 0                 | 1         | 0         | 10         | 1         | 29         | 26         |
| <b>Total</b>       | <b>4</b>                 | <b>21</b>  | <b>0</b> | <b>13</b> | <b>25</b>  | <b>2</b>          | <b>10</b> | <b>10</b> | <b>28</b>  | <b>22</b> | <b>7</b>                 | <b>49</b>  | <b>1</b> | <b>22</b> | <b>57</b>  | <b>2</b>          | <b>5</b>  | <b>2</b>  | <b>43</b>  | <b>9</b>  | <b>113</b> | <b>106</b> |
|                    |                          |            |          |           |            |                   |           |           |            |           |                          |            |          |           |            |                   |           |           |            |           |            |            |
| 17:00              | 2                        | 8          | 0        | 3         | 10         | 0                 | 3         | 1         | 9          | 4         | 2                        | 22         | 0        | 5         | 24         | 1                 | 2         | 1         | 7          | 4         | 42         | 24         |
| 17:15              | 4                        | 9          | 0        | 4         | 13         | 0                 | 4         | 1         | 22         | 5         | 2                        | 21         | 2        | 5         | 25         | 0                 | 4         | 1         | 16         | 5         | 48         | 47         |
| 17:30              | 1                        | 7          | 0        | 4         | 8          | 1                 | 7         | 2         | 10         | 10        | 0                        | 25         | 0        | 11        | 25         | 0                 | 2         | 2         | 20         | 4         | 47         | 45         |
| 17:45              | 3                        | 13         | 0        | 5         | 16         | 1                 | 5         | 2         | 7          | 8         | 2                        | 21         | 1        | 5         | 24         | 0                 | 7         | 0         | 16         | 7         | 55         | 33         |
| <b>Total</b>       | <b>10</b>                | <b>37</b>  | <b>0</b> | <b>16</b> | <b>47</b>  | <b>2</b>          | <b>19</b> | <b>6</b>  | <b>48</b>  | <b>27</b> | <b>6</b>                 | <b>89</b>  | <b>3</b> | <b>26</b> | <b>98</b>  | <b>1</b>          | <b>15</b> | <b>4</b>  | <b>59</b>  | <b>20</b> | <b>192</b> | <b>149</b> |
|                    |                          |            |          |           |            |                   |           |           |            |           |                          |            |          |           |            |                   |           |           |            |           |            |            |
| <b>Grand Total</b> | <b>19</b>                | <b>223</b> | <b>2</b> | <b>57</b> | <b>244</b> | <b>8</b>          | <b>59</b> | <b>32</b> | <b>137</b> | <b>99</b> | <b>16</b>                | <b>169</b> | <b>7</b> | <b>73</b> | <b>192</b> | <b>4</b>          | <b>29</b> | <b>13</b> | <b>157</b> | <b>46</b> | <b>581</b> | <b>424</b> |
| Apprch %           | 7.8%                     | 91.4%      | 0.8%     |           |            | 8.1%              | 59.6%     | 32.3%     |            |           | 8.3%                     | 88.0%      | 3.6%     |           |            | 8.7%              | 63.0%     | 28.3%     |            |           |            |            |
| Total %            | 3.3%                     | 38.4%      | 0.3%     |           | 42.0%      | 1.4%              | 10.2%     | 5.5%      |            | 17.0%     | 2.8%                     | 29.1%      | 1.2%     |           | 33.0%      | 0.7%              | 5.0%      | 2.2%      |            | 7.9%      |            | 100.0%     |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |              |             |           |             | 27th St Westbound |              |              |           |             | Telegraph Ave Northbound |              |              |           |             | 27th St Eastbound |              |              |           |             | Total       |  |
|---|--------------------------|--------------|-------------|-----------|-------------|-------------------|--------------|--------------|-----------|-------------|--------------------------|--------------|--------------|-----------|-------------|-------------------|--------------|--------------|-----------|-------------|-------------|--|
|   | LEFT                     | THRU         | RIGHT       | PEDS      | APP.TOTAL   | LEFT              | THRU         | RIGHT        | PEDS      | APP.TOTAL   | LEFT                     | THRU         | RIGHT        | PEDS      | APP.TOTAL   | LEFT              | THRU         | RIGHT        | PEDS      | APP.TOTAL   |             |  |
| Peak Hour Analysis From 08:30 to 09:30            |                          |              |             |           |             |                   |              |              |           |             |                          |              |              |           |             |                   |              |              |           |             |             |  |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |              |             |           |             |                   |              |              |           |             |                          |              |              |           |             |                   |              |              |           |             |             |  |
| 8:30  | 0                        | 25           | 1           | 2         | 26          | 0                 | 2            | 1            | 9         | 3           | 1                        | 1            | 1            | 2         | 3           | 0                 | 0            | 1            | 6         | 1           | 33          |  |
| 8:45  | 3                        | 35           | 0           | 5         | 38          | 2                 | 2            | 1            | 7         | 5           | 1                        | 5            | 1            | 4         | 7           | 0                 | 3            | 1            | 6         | 4           | 54          |  |
| 9:00  | 0                        | 20           | 0           | 6         | 20          | 0                 | 2            | 0            | 13        | 2           | 0                        | 6            | 0            | 3         | 6           | 0                 | 0            | 2            | 8         | 2           | 30          |  |
| 9:15  | 1                        | 20           | 1           | 3         | 22          | 0                 | 4            | 2            | 4         | 6           | 0                        | 3            | 0            | 2         | 3           | 0                 | 2            | 0            | 9         | 2           | 33          |  |
| <b>Total Volume</b>                               | <b>4</b>                 | <b>100</b>   | <b>2</b>    | <b>16</b> | <b>106</b>  | <b>2</b>          | <b>10</b>    | <b>4</b>     | <b>33</b> | <b>16</b>   | <b>2</b>                 | <b>15</b>    | <b>2</b>     | <b>11</b> | <b>19</b>   | <b>0</b>          | <b>5</b>     | <b>4</b>     | <b>29</b> | <b>9</b>    | <b>150</b>  |  |
| <b>% App Total</b>                                | <b>3.8%</b>              | <b>94.3%</b> | <b>1.9%</b> |           |             | <b>12.5%</b>      | <b>62.5%</b> | <b>25.0%</b> |           |             | <b>10.5%</b>             | <b>78.9%</b> | <b>10.5%</b> |           |             | <b>0.0%</b>       | <b>55.6%</b> | <b>44.4%</b> |           |             |             |  |
| <b>PHF</b>  | <b>.333</b>              | <b>.714</b>  | <b>.500</b> |           | <b>.697</b> | <b>.250</b>       | <b>.625</b>  | <b>.500</b>  |           | <b>.667</b> | <b>.500</b>              | <b>.625</b>  | <b>.500</b>  |           | <b>.679</b> | <b>.000</b>       | <b>.417</b>  | <b>.500</b>  |           | <b>.563</b> | <b>.694</b> |  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |              |             |           |             | 27th St Westbound |              |              |           |             | Telegraph Ave Northbound |              |             |           |             | 27th St Eastbound |              |              |           |             | Total       |  |
|---|--------------------------|--------------|-------------|-----------|-------------|-------------------|--------------|--------------|-----------|-------------|--------------------------|--------------|-------------|-----------|-------------|-------------------|--------------|--------------|-----------|-------------|-------------|--|
|   | LEFT                     | THRU         | RIGHT       | PEDS      | APP.TOTAL   | LEFT              | THRU         | RIGHT        | PEDS      | APP.TOTAL   | LEFT                     | THRU         | RIGHT       | PEDS      | APP.TOTAL   | LEFT              | THRU         | RIGHT        | PEDS      | APP.TOTAL   |             |  |
| Peak Hour Analysis From 16:45 to 17:45            |                          |              |             |           |             |                   |              |              |           |             |                          |              |             |           |             |                   |              |              |           |             |             |  |
| Peak Hour For Entire Intersection Begins at 16:45 |                          |              |             |           |             |                   |              |              |           |             |                          |              |             |           |             |                   |              |              |           |             |             |  |
| 16:45   | 0                        | 4            | 0           | 3         | 4           | 0                 | 3            | 6            | 10        | 9           | 0                        | 15           | 0           | 3         | 15          | 0                 | 1            | 0            | 10        | 1           | 29          |  |
| 17:00   | 2                        | 8            | 0           | 3         | 10          | 0                 | 3            | 1            | 9         | 4           | 2                        | 22           | 0           | 5         | 24          | 1                 | 2            | 1            | 7         | 4           | 42          |  |
| 17:15   | 4                        | 9            | 0           | 4         | 13          | 0                 | 4            | 1            | 22        | 5           | 2                        | 21           | 2           | 5         | 25          | 0                 | 4            | 1            | 16        | 5           | 48          |  |
| 17:30   | 1                        | 7            | 0           | 4         | 8           | 1                 | 7            | 2            | 10        | 10          | 0                        | 25           | 0           | 11        | 25          | 0                 | 2            | 2            | 20        | 4           | 47          |  |
| <b>Total Volume</b>                               | <b>7</b>                 | <b>28</b>    | <b>0</b>    | <b>14</b> | <b>35</b>   | <b>1</b>          | <b>17</b>    | <b>10</b>    | <b>51</b> | <b>28</b>   | <b>4</b>                 | <b>83</b>    | <b>2</b>    | <b>24</b> | <b>89</b>   | <b>1</b>          | <b>9</b>     | <b>4</b>     | <b>53</b> | <b>14</b>   | <b>166</b>  |  |
| <b>% App Total</b>                                | <b>20.0%</b>             | <b>80.0%</b> | <b>0.0%</b> |           |             | <b>3.6%</b>       | <b>60.7%</b> | <b>35.7%</b> |           |             | <b>4.5%</b>              | <b>93.3%</b> | <b>2.2%</b> |           |             | <b>7.1%</b>       | <b>64.3%</b> | <b>28.6%</b> |           |             |             |  |
| <b>PHF</b>  | <b>.438</b>              | <b>.778</b>  | <b>.000</b> |           | <b>.673</b> | <b>.250</b>       | <b>.607</b>  | <b>.417</b>  |           | <b>.700</b> | <b>.500</b>              | <b>.830</b>  | <b>.250</b> |           | <b>.890</b> | <b>.250</b>       | <b>.563</b>  | <b>.500</b>  |           | <b>.700</b> | <b>.865</b> |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-001 Broadway & 27th S  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Broadway Southbound |             |            |          |             | 27th S Westbound |            |            |          |             | Broadway Northbound |             |           |           |             | 27th S Eastbound |            |            |           |             | Total       | Utturns Total |
|--------------------|---------------------|-------------|------------|----------|-------------|------------------|------------|------------|----------|-------------|---------------------|-------------|-----------|-----------|-------------|------------------|------------|------------|-----------|-------------|-------------|---------------|
|                    | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT             | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT             | THRU       | RIGHT      | UTURNS    | APP.TOTAL   |             |               |
| 7:00               | 4                   | 48          | 11         | 0        | 63          | 4                | 15         | 22         | 0        | 41          | 4                   | 45          | 4         | 0         | 53          | 12               | 18         | 13         | 1         | 44          | 201         | 1             |
| 7:15               | 6                   | 47          | 8          | 0        | 61          | 4                | 20         | 23         | 0        | 47          | 6                   | 49          | 4         | 0         | 59          | 15               | 9          | 26         | 1         | 51          | 218         | 1             |
| 7:30               | 16                  | 76          | 10         | 0        | 102         | 9                | 37         | 34         | 0        | 80          | 7                   | 55          | 1         | 1         | 64          | 22               | 19         | 30         | 1         | 72          | 318         | 2             |
| 7:45               | 9                   | 106         | 11         | 2        | 128         | 10               | 38         | 43         | 1        | 92          | 8                   | 104         | 3         | 1         | 116         | 28               | 27         | 35         | 3         | 93          | 429         | 7             |
| <b>Total</b>       | <b>35</b>           | <b>277</b>  | <b>40</b>  | <b>2</b> | <b>354</b>  | <b>27</b>        | <b>110</b> | <b>122</b> | <b>1</b> | <b>260</b>  | <b>25</b>           | <b>253</b>  | <b>12</b> | <b>2</b>  | <b>292</b>  | <b>77</b>        | <b>73</b>  | <b>104</b> | <b>6</b>  | <b>260</b>  | <b>1166</b> | <b>11</b>     |
| 8:00               | 24                  | 109         | 23         | 0        | 156         | 8                | 49         | 35         | 0        | 92          | 18                  | 109         | 10        | 2         | 139         | 31               | 40         | 33         | 7         | 111         | 498         | 9             |
| 8:15               | 25                  | 99          | 27         | 0        | 151         | 16               | 67         | 68         | 0        | 151         | 12                  | 87          | 6         | 0         | 105         | 30               | 42         | 51         | 5         | 128         | 535         | 5             |
| 8:30               | 21                  | 116         | 23         | 1        | 161         | 20               | 54         | 58         | 0        | 132         | 21                  | 141         | 7         | 1         | 170         | 22               | 34         | 55         | 4         | 115         | 578         | 6             |
| 8:45               | 22                  | 145         | 27         | 0        | 194         | 10               | 62         | 54         | 0        | 126         | 19                  | 105         | 6         | 1         | 131         | 31               | 55         | 48         | 13        | 147         | 598         | 14            |
| <b>Total</b>       | <b>92</b>           | <b>469</b>  | <b>100</b> | <b>1</b> | <b>662</b>  | <b>54</b>        | <b>232</b> | <b>215</b> | <b>0</b> | <b>501</b>  | <b>70</b>           | <b>442</b>  | <b>29</b> | <b>4</b>  | <b>545</b>  | <b>114</b>       | <b>171</b> | <b>187</b> | <b>29</b> | <b>501</b>  | <b>2209</b> | <b>34</b>     |
| 16:00              | 38                  | 119         | 28         | 1        | 186         | 8                | 51         | 64         | 1        | 124         | 26                  | 148         | 6         | 0         | 180         | 29               | 59         | 34         | 3         | 125         | 615         | 5             |
| 16:15              | 32                  | 140         | 39         | 1        | 212         | 9                | 62         | 46         | 1        | 118         | 27                  | 148         | 7         | 0         | 182         | 33               | 53         | 37         | 6         | 129         | 641         | 8             |
| 16:30              | 39                  | 162         | 41         | 0        | 242         | 8                | 62         | 49         | 0        | 119         | 40                  | 145         | 4         | 0         | 189         | 27               | 60         | 34         | 8         | 129         | 679         | 8             |
| 16:45              | 37                  | 154         | 36         | 1        | 228         | 6                | 61         | 48         | 0        | 115         | 24                  | 131         | 5         | 1         | 161         | 39               | 61         | 33         | 3         | 136         | 640         | 5             |
| <b>Total</b>       | <b>146</b>          | <b>575</b>  | <b>144</b> | <b>3</b> | <b>868</b>  | <b>31</b>        | <b>236</b> | <b>207</b> | <b>2</b> | <b>476</b>  | <b>117</b>          | <b>572</b>  | <b>22</b> | <b>1</b>  | <b>712</b>  | <b>128</b>       | <b>233</b> | <b>138</b> | <b>20</b> | <b>519</b>  | <b>2575</b> | <b>26</b>     |
| 17:00              | 47                  | 158         | 34         | 0        | 239         | 11               | 71         | 43         | 3        | 128         | 25                  | 153         | 5         | 0         | 183         | 41               | 73         | 39         | 6         | 159         | 709         | 9             |
| 17:15              | 32                  | 152         | 34         | 0        | 218         | 12               | 53         | 62         | 0        | 127         | 40                  | 156         | 8         | 2         | 206         | 44               | 80         | 36         | 3         | 163         | 714         | 5             |
| 17:30              | 35                  | 123         | 19         | 0        | 177         | 10               | 64         | 46         | 1        | 121         | 39                  | 168         | 7         | 2         | 216         | 51               | 78         | 49         | 4         | 182         | 696         | 7             |
| 17:45              | 35                  | 147         | 22         | 0        | 204         | 11               | 48         | 54         | 1        | 114         | 25                  | 159         | 6         | 1         | 191         | 26               | 84         | 29         | 3         | 142         | 651         | 5             |
| <b>Total</b>       | <b>149</b>          | <b>580</b>  | <b>109</b> | <b>0</b> | <b>838</b>  | <b>44</b>        | <b>236</b> | <b>205</b> | <b>5</b> | <b>490</b>  | <b>129</b>          | <b>636</b>  | <b>26</b> | <b>5</b>  | <b>796</b>  | <b>162</b>       | <b>315</b> | <b>153</b> | <b>16</b> | <b>646</b>  | <b>2770</b> | <b>26</b>     |
| <b>Grand Total</b> | <b>422</b>          | <b>1901</b> | <b>393</b> | <b>6</b> | <b>2722</b> | <b>156</b>       | <b>814</b> | <b>749</b> | <b>8</b> | <b>1727</b> | <b>341</b>          | <b>1903</b> | <b>89</b> | <b>12</b> | <b>2345</b> | <b>481</b>       | <b>792</b> | <b>582</b> | <b>71</b> | <b>1926</b> | <b>8720</b> | <b>97</b>     |
| Apprch %           | 15.5%               | 69.8%       | 14.4%      | 0.2%     |             | 9.0%             | 47.1%      | 43.4%      | 0.5%     |             | 14.5%               | 81.2%       | 3.8%      | 0.5%      |             | 25.0%            | 41.1%      | 30.2%      | 3.7%      |             |             |               |
| Total %            | 4.8%                | 21.8%       | 4.5%       | 0.1%     | 31.2%       | 1.8%             | 9.3%       | 8.6%       | 0.1%     | 19.8%       | 3.9%                | 21.8%       | 1.0%      | 0.1%      | 26.9%       | 5.5%             | 9.1%       | 6.7%       | 0.8%      | 22.1%       | 100.0%      |               |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 27th S Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 27th S Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT             | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT             | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                  |       |       |        |           |                     |       |       |        |           |                  |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                  |       |       |        |           |                     |       |       |        |           |                  |       |       |        |           |       |  |
| 8:00  | 24                  | 109   | 23    | 0      | 156       | 8                | 49    | 35    | 0      | 92        | 18                  | 109   | 10    | 2      | 139       | 31               | 40    | 33    | 7      | 111       | 498   |  |
| 8:15  | 25                  | 99    | 27    | 0      | 151       | 16               | 67    | 68    | 0      | 151       | 12                  | 87    | 6     | 0      | 105       | 30               | 42    | 51    | 5      | 128       | 535   |  |
| 8:30  | 21                  | 116   | 23    | 1      | 161       | 20               | 54    | 58    | 0      | 132       | 21                  | 141   | 7     | 1      | 170       | 22               | 34    | 55    | 4      | 115       | 578   |  |
| 8:45  | 22                  | 145   | 27    | 0      | 194       | 10               | 62    | 54    | 0      | 126       | 19                  | 105   | 6     | 1      | 131       | 31               | 55    | 48    | 13     | 147       | 598   |  |
| Total Volume                                      | 92                  | 469   | 100   | 1      | 662       | 54               | 232   | 215   | 0      | 501       | 70                  | 442   | 29    | 4      | 545       | 114              | 171   | 187   | 29     | 501       | 2209  |  |
| % App Total                                       | 13.9%               | 70.8% | 15.1% | 0.2%   |           | 10.8%            | 46.3% | 42.9% | 0.0%   |           | 12.8%               | 81.1% | 5.3%  | 0.7%   |           | 22.8%            | 34.1% | 37.3% | 5.8%   |           |       |  |
| PHF   | .920                | .809  | .926  | .250   | .853      | .675             | .866  | .790  | .000   | .829      | .833                | .784  | .725  | .500   | .801      | .919             | .777  | .850  | .558   | .852      | .923  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 27th S Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 27th S Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT             | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT             | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                  |       |       |        |           |                     |       |       |        |           |                  |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                  |       |       |        |           |                     |       |       |        |           |                  |       |       |        |           |       |  |
| 17:00   | 47                  | 158   | 34    | 0      | 239       | 11               | 71    | 43    | 3      | 128       | 25                  | 153   | 5     | 0      | 183       | 41               | 73    | 39    | 6      | 159       | 709   |  |
| 17:15   | 32                  | 152   | 34    | 0      | 218       | 12               | 53    | 62    | 0      | 127       | 40                  | 156   | 8     | 2      | 206       | 44               | 80    | 36    | 3      | 163       | 714   |  |
| 17:30   | 35                  | 123   | 19    | 0      | 177       | 10               | 64    | 46    | 1      | 121       | 39                  | 168   | 7     | 2      | 216       | 51               | 78    | 49    | 4      | 182       | 696   |  |
| 17:45   | 35                  | 147   | 22    | 0      | 204       | 11               | 48    | 54    | 1      | 114       | 25                  | 159   | 6     | 1      | 191       | 26               | 84    | 29    | 3      | 142       | 651   |  |
| Total Volume                                      | 149                 | 580   | 109   | 0      | 838       | 44               | 236   | 205   | 5      | 490       | 129                 | 636   | 26    | 5      | 796       | 162              | 315   | 153   | 16     | 646       | 2770  |  |
| % App Total                                       | 17.8%               | 69.2% | 13.0% | 0.0%   |           | 9.0%             | 48.2% | 41.8% | 1.0%   |           | 16.2%               | 79.9% | 3.3%  | 0.6%   |           | 25.1%            | 48.8% | 23.7% | 2.5%   |           |       |  |
| PHF   | .793                | .918  | .801  | .000   | .877      | .917             | .831  | .827  | .417   | .957      | .806                | .946  | .813  | .625   | .921      | .794             | .938  | .781  | .667   | .887      | .970  |  |

# National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-001 Broadway & 27th S  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |            |            | 27th S Westbound |           |           |            |           | Broadway Northbound |            |          |           |            | 27th S Eastbound |           |          |            |           | Total      | Peds Total |
|--------------------|---------------------|------------|----------|------------|------------|------------------|-----------|-----------|------------|-----------|---------------------|------------|----------|-----------|------------|------------------|-----------|----------|------------|-----------|------------|------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT             | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT             | THRU      | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:00               | 1                   | 7          | 0        | 1          | 8          | 0                | 2         | 0         | 2          | 2         | 0                   | 2          | 0        | 0         | 2          | 1                | 1         | 0        | 10         | 2         | 14         | 13         |
| 7:15               | 1                   | 12         | 1        | 5          | 14         | 0                | 1         | 3         | 7          | 4         | 0                   | 1          | 0        | 1         | 1          | 0                | 3         | 0        | 10         | 3         | 22         | 23         |
| 7:30               | 1                   | 8          | 0        | 7          | 9          | 0                | 1         | 2         | 18         | 3         | 0                   | 2          | 0        | 2         | 2          | 0                | 2         | 0        | 16         | 2         | 16         | 43         |
| 7:45               | 1                   | 15         | 0        | 15         | 16         | 0                | 3         | 1         | 25         | 4         | 0                   | 3          | 0        | 4         | 3          | 0                | 1         | 1        | 23         | 2         | 25         | 67         |
| <b>Total</b>       | <b>4</b>            | <b>42</b>  | <b>1</b> | <b>28</b>  | <b>47</b>  | <b>0</b>         | <b>7</b>  | <b>6</b>  | <b>52</b>  | <b>13</b> | <b>0</b>            | <b>8</b>   | <b>0</b> | <b>7</b>  | <b>8</b>   | <b>1</b>         | <b>7</b>  | <b>1</b> | <b>59</b>  | <b>9</b>  | <b>77</b>  | <b>146</b> |
|                    |                     |            |          |            |            |                  |           |           |            |           |                     |            |          |           |            |                  |           |          |            |           |            |            |
| 8:00               | 1                   | 24         | 0        | 21         | 25         | 1                | 8         | 2         | 16         | 11        | 0                   | 3          | 0        | 2         | 3          | 1                | 2         | 0        | 25         | 3         | 42         | 64         |
| 8:15               | 2                   | 22         | 0        | 11         | 24         | 0                | 2         | 1         | 20         | 3         | 0                   | 3          | 0        | 0         | 3          | 0                | 1         | 1        | 18         | 2         | 32         | 49         |
| 8:30               | 1                   | 24         | 0        | 7          | 25         | 0                | 5         | 1         | 21         | 6         | 0                   | 1          | 1        | 1         | 2          | 0                | 3         | 0        | 17         | 3         | 36         | 46         |
| 8:45               | 0                   | 29         | 0        | 11         | 29         | 0                | 2         | 2         | 24         | 4         | 0                   | 4          | 0        | 2         | 4          | 0                | 6         | 1        | 26         | 7         | 44         | 63         |
| <b>Total</b>       | <b>4</b>            | <b>99</b>  | <b>0</b> | <b>50</b>  | <b>103</b> | <b>1</b>         | <b>17</b> | <b>6</b>  | <b>81</b>  | <b>24</b> | <b>0</b>            | <b>11</b>  | <b>1</b> | <b>5</b>  | <b>12</b>  | <b>1</b>         | <b>12</b> | <b>2</b> | <b>86</b>  | <b>15</b> | <b>154</b> | <b>222</b> |
|                    |                     |            |          |            |            |                  |           |           |            |           |                     |            |          |           |            |                  |           |          |            |           |            |            |
| 16:00              | 2                   | 5          | 0        | 2          | 7          | 0                | 0         | 0         | 20         | 0         | 0                   | 8          | 0        | 2         | 8          | 0                | 1         | 0        | 27         | 1         | 16         | 51         |
| 16:15              | 3                   | 3          | 0        | 10         | 6          | 0                | 3         | 1         | 9          | 4         | 0                   | 6          | 0        | 0         | 6          | 0                | 1         | 0        | 23         | 1         | 17         | 42         |
| 16:30              | 4                   | 1          | 1        | 7          | 6          | 0                | 3         | 1         | 22         | 4         | 2                   | 15         | 0        | 0         | 17         | 1                | 2         | 0        | 13         | 3         | 30         | 42         |
| 16:45              | 5                   | 7          | 0        | 10         | 12         | 0                | 3         | 1         | 23         | 4         | 3                   | 21         | 0        | 0         | 24         | 0                | 1         | 0        | 18         | 1         | 41         | 51         |
| <b>Total</b>       | <b>14</b>           | <b>16</b>  | <b>1</b> | <b>29</b>  | <b>31</b>  | <b>0</b>         | <b>9</b>  | <b>3</b>  | <b>74</b>  | <b>12</b> | <b>5</b>            | <b>50</b>  | <b>0</b> | <b>2</b>  | <b>55</b>  | <b>1</b>         | <b>5</b>  | <b>0</b> | <b>81</b>  | <b>6</b>  | <b>104</b> | <b>186</b> |
|                    |                     |            |          |            |            |                  |           |           |            |           |                     |            |          |           |            |                  |           |          |            |           |            |            |
| 17:00              | 4                   | 8          | 1        | 9          | 13         | 0                | 0         | 0         | 24         | 0         | 1                   | 23         | 0        | 2         | 24         | 0                | 1         | 0        | 24         | 1         | 38         | 59         |
| 17:15              | 3                   | 7          | 0        | 5          | 10         | 0                | 4         | 1         | 17         | 5         | 0                   | 26         | 0        | 0         | 26         | 0                | 3         | 0        | 17         | 3         | 44         | 39         |
| 17:30              | 1                   | 4          | 1        | 10         | 6          | 1                | 0         | 3         | 19         | 4         | 1                   | 24         | 0        | 2         | 25         | 1                | 4         | 0        | 17         | 5         | 40         | 48         |
| 17:45              | 1                   | 10         | 0        | 4          | 11         | 0                | 1         | 4         | 18         | 5         | 1                   | 20         | 1        | 0         | 22         | 1                | 1         | 0        | 16         | 2         | 40         | 38         |
| <b>Total</b>       | <b>9</b>            | <b>29</b>  | <b>2</b> | <b>28</b>  | <b>40</b>  | <b>1</b>         | <b>5</b>  | <b>8</b>  | <b>78</b>  | <b>14</b> | <b>3</b>            | <b>93</b>  | <b>1</b> | <b>4</b>  | <b>97</b>  | <b>2</b>         | <b>9</b>  | <b>0</b> | <b>74</b>  | <b>11</b> | <b>162</b> | <b>184</b> |
|                    |                     |            |          |            |            |                  |           |           |            |           |                     |            |          |           |            |                  |           |          |            |           |            |            |
| <b>Grand Total</b> | <b>31</b>           | <b>186</b> | <b>4</b> | <b>135</b> | <b>221</b> | <b>2</b>         | <b>38</b> | <b>23</b> | <b>285</b> | <b>63</b> | <b>8</b>            | <b>162</b> | <b>2</b> | <b>18</b> | <b>172</b> | <b>5</b>         | <b>33</b> | <b>3</b> | <b>300</b> | <b>41</b> | <b>497</b> | <b>738</b> |
| Apprch %           | 14.0%               | 84.2%      | 1.8%     |            |            | 3.2%             | 60.3%     | 36.5%     |            |           | 4.7%                | 94.2%      | 1.2%     |           |            | 12.2%            | 80.5%     | 7.3%     |            |           |            |            |
| Total %            | 6.2%                | 37.4%      | 0.8%     |            | 44.5%      | 0.4%             | 7.6%      | 4.6%      |            | 12.7%     | 1.6%                | 32.6%      | 0.4%     |           | 34.6%      | 1.0%             | 6.6%      | 0.6%     |            | 8.2%      | 100.0%     |            |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 27th S Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 27th S Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT             | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT             | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                  |       |       |      |           |                     |       |       |      |           |                  |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                  |       |       |      |           |                     |       |       |      |           |                  |       |       |      |           |       |  |
| 8:00  | 1                   | 24    | 0     | 21   | 25        | 1                | 8     | 2     | 16   | 11        | 0                   | 3     | 0     | 2    | 3         | 1                | 2     | 0     | 25   | 3         | 42    |  |
| 8:15  | 2                   | 22    | 0     | 11   | 24        | 0                | 2     | 1     | 20   | 3         | 0                   | 3     | 0     | 0    | 3         | 0                | 1     | 1     | 18   | 2         | 32    |  |
| 8:30  | 1                   | 24    | 0     | 7    | 25        | 0                | 5     | 1     | 21   | 6         | 0                   | 1     | 1     | 1    | 2         | 0                | 3     | 0     | 17   | 3         | 36    |  |
| 8:45  | 0                   | 29    | 0     | 11   | 29        | 0                | 2     | 2     | 24   | 4         | 0                   | 4     | 0     | 2    | 4         | 0                | 6     | 1     | 26   | 7         | 44    |  |
| Total Volume                                      | 4                   | 99    | 0     | 50   | 103       | 1                | 17    | 6     | 81   | 24        | 0                   | 11    | 1     | 5    | 12        | 1                | 12    | 2     | 86   | 15        | 154   |  |
| % App Total                                       | 3.9%                | 96.1% | 0.0%  |      |           | 4.2%             | 70.8% | 25.0% |      |           | 0.0%                | 91.7% | 8.3%  |      |           | 6.7%             | 80.0% | 13.3% |      |           |       |  |
| PHF   | .500                | .853  | .000  |      | .888      | .250             | .531  | .750  |      | .545      | .000                | .688  | .250  |      | .750      | .250             | .500  | .500  |      | .536      | .875  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 27th S Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 27th S Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT             | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT             | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |      |           |                  |       |       |      |           |                     |       |       |      |           |                  |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |      |           |                  |       |       |      |           |                     |       |       |      |           |                  |       |       |      |           |       |  |
| 17:00   | 4                   | 8     | 1     | 9    | 13        | 0                | 0     | 0     | 24   | 0         | 1                   | 23    | 0     | 2    | 24        | 0                | 1     | 0     | 24   | 1         | 38    |  |
| 17:15   | 3                   | 7     | 0     | 5    | 10        | 0                | 4     | 1     | 17   | 5         | 0                   | 26    | 0     | 0    | 26        | 0                | 3     | 0     | 17   | 3         | 44    |  |
| 17:30   | 1                   | 4     | 1     | 10   | 6         | 1                | 0     | 3     | 19   | 4         | 1                   | 24    | 0     | 2    | 25        | 1                | 4     | 0     | 17   | 5         | 40    |  |
| 17:45   | 1                   | 10    | 0     | 4    | 11        | 0                | 1     | 4     | 18   | 5         | 1                   | 20    | 1     | 0    | 22        | 1                | 1     | 0     | 16   | 2         | 40    |  |
| Total Volume                                      | 9                   | 29    | 2     | 28   | 40        | 1                | 5     | 8     | 78   | 14        | 3                   | 93    | 1     | 4    | 97        | 2                | 9     | 0     | 74   | 11        | 162   |  |
| % App Total                                       | 22.5%               | 72.5% | 5.0%  |      |           | 7.1%             | 35.7% | 57.1% |      |           | 3.1%                | 95.9% | 1.0%  |      |           | 18.2%            | 81.8% | 0.0%  |      |           |       |  |
| PHF   | .563                | .725  | .500  |      | .769      | .250             | .313  | .500  |      | .700      | .750                | .894  | .250  |      | .933      | .500             | .563  | .000  |      | .550      | .920  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-004 Telegraph Ave & 26th St

Date : 9/29/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Telegraph Ave Southbound |             |          |          |             | 26th St Westbound |          |           |          |            | Telegraph Ave Northbound |             |           |          |             | 26th St Eastbound |          |          |          |           | Total       | Utturns Total |
|--------------------|--------------------------|-------------|----------|----------|-------------|-------------------|----------|-----------|----------|------------|--------------------------|-------------|-----------|----------|-------------|-------------------|----------|----------|----------|-----------|-------------|---------------|
|                    | LEFT                     | THRU        | RIGHT    | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                     | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL |             |               |
| 7:30               | 0                        | 47          | 0        | 0        | 47          | 2                 | 0        | 5         | 0        | 7          | 0                        | 58          | 7         | 0        | 65          | 0                 | 0        | 0        | 0        | 0         | 119         | 0             |
| 7:45               | 6                        | 63          | 0        | 0        | 69          | 1                 | 0        | 7         | 0        | 8          | 0                        | 78          | 2         | 1        | 81          | 0                 | 0        | 0        | 0        | 0         | 158         | 1             |
| 8:00               | 7                        | 84          | 0        | 0        | 91          | 3                 | 0        | 3         | 0        | 6          | 0                        | 81          | 3         | 0        | 84          | 0                 | 0        | 0        | 0        | 0         | 181         | 0             |
| 8:15               | 4                        | 59          | 0        | 0        | 63          | 4                 | 0        | 2         | 0        | 6          | 0                        | 81          | 11        | 0        | 92          | 0                 | 0        | 0        | 0        | 0         | 161         | 0             |
| <b>Total</b>       | <b>17</b>                | <b>253</b>  | <b>0</b> | <b>0</b> | <b>270</b>  | <b>10</b>         | <b>0</b> | <b>17</b> | <b>0</b> | <b>27</b>  | <b>0</b>                 | <b>298</b>  | <b>23</b> | <b>1</b> | <b>322</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>619</b>  | <b>1</b>      |
| 8:30               | 4                        | 89          | 0        | 0        | 93          | 1                 | 0        | 3         | 0        | 4          | 0                        | 84          | 5         | 1        | 90          | 0                 | 0        | 0        | 0        | 0         | 187         | 1             |
| 8:45               | 5                        | 94          | 0        | 0        | 99          | 0                 | 0        | 5         | 0        | 5          | 0                        | 89          | 2         | 1        | 92          | 0                 | 0        | 0        | 0        | 0         | 196         | 1             |
| 9:00               | 3                        | 87          | 0        | 0        | 90          | 2                 | 0        | 0         | 0        | 2          | 0                        | 88          | 5         | 0        | 93          | 0                 | 0        | 0        | 0        | 0         | 185         | 0             |
| 9:15               | 4                        | 91          | 0        | 0        | 95          | 1                 | 0        | 5         | 0        | 6          | 0                        | 80          | 1         | 0        | 81          | 0                 | 0        | 0        | 0        | 0         | 182         | 0             |
| <b>Total</b>       | <b>16</b>                | <b>361</b>  | <b>0</b> | <b>0</b> | <b>377</b>  | <b>4</b>          | <b>0</b> | <b>13</b> | <b>0</b> | <b>17</b>  | <b>0</b>                 | <b>341</b>  | <b>13</b> | <b>2</b> | <b>356</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>750</b>  | <b>2</b>      |
| 16:00              | 7                        | 109         | 0        | 2        | 118         | 1                 | 0        | 9         | 0        | 10         | 0                        | 109         | 2         | 2        | 113         | 0                 | 0        | 0        | 0        | 0         | 241         | 4             |
| 16:15              | 6                        | 112         | 0        | 0        | 118         | 1                 | 0        | 8         | 0        | 9          | 0                        | 114         | 4         | 1        | 119         | 0                 | 0        | 0        | 0        | 0         | 246         | 1             |
| 16:30              | 6                        | 120         | 0        | 0        | 126         | 1                 | 0        | 5         | 0        | 6          | 0                        | 124         | 8         | 0        | 132         | 0                 | 0        | 0        | 0        | 0         | 264         | 0             |
| 16:45              | 4                        | 110         | 0        | 0        | 114         | 3                 | 0        | 8         | 0        | 11         | 0                        | 104         | 7         | 1        | 112         | 0                 | 0        | 0        | 0        | 0         | 237         | 1             |
| <b>Total</b>       | <b>23</b>                | <b>451</b>  | <b>0</b> | <b>2</b> | <b>476</b>  | <b>6</b>          | <b>0</b> | <b>30</b> | <b>0</b> | <b>36</b>  | <b>0</b>                 | <b>451</b>  | <b>21</b> | <b>4</b> | <b>476</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>988</b>  | <b>6</b>      |
| 17:00              | 6                        | 118         | 0        | 0        | 124         | 2                 | 0        | 8         | 0        | 10         | 0                        | 112         | 5         | 0        | 117         | 0                 | 0        | 0        | 0        | 0         | 251         | 0             |
| 17:15              | 4                        | 121         | 0        | 0        | 125         | 5                 | 0        | 9         | 0        | 14         | 0                        | 118         | 4         | 0        | 122         | 0                 | 0        | 0        | 0        | 0         | 261         | 0             |
| 17:30              | 4                        | 112         | 0        | 0        | 116         | 3                 | 0        | 5         | 0        | 8          | 0                        | 115         | 8         | 0        | 123         | 0                 | 0        | 0        | 0        | 0         | 247         | 0             |
| 17:45              | 4                        | 115         | 0        | 0        | 119         | 2                 | 0        | 9         | 0        | 11         | 0                        | 120         | 9         | 0        | 129         | 0                 | 0        | 0        | 0        | 0         | 259         | 0             |
| <b>Total</b>       | <b>18</b>                | <b>466</b>  | <b>0</b> | <b>0</b> | <b>484</b>  | <b>12</b>         | <b>0</b> | <b>31</b> | <b>0</b> | <b>43</b>  | <b>0</b>                 | <b>465</b>  | <b>26</b> | <b>0</b> | <b>491</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1018</b> | <b>0</b>      |
| <b>Grand Total</b> | <b>74</b>                | <b>1531</b> | <b>0</b> | <b>2</b> | <b>1607</b> | <b>32</b>         | <b>0</b> | <b>91</b> | <b>0</b> | <b>123</b> | <b>0</b>                 | <b>1555</b> | <b>83</b> | <b>7</b> | <b>1645</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>3375</b> | <b>9</b>      |
| Apprch %           | 4.6%                     | 95.3%       | 0.0%     | 0.1%     |             | 26.0%             | 0.0%     | 74.0%     | 0.0%     |            | 0.0%                     | 94.5%       | 5.0%      | 0.4%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      |             |               |
| Total %            | 2.2%                     | 45.4%       | 0.0%     | 0.1%     | 47.6%       | 0.9%              | 0.0%     | 2.7%      | 0.0%     | 3.6%       | 0.0%                     | 46.1%       | 2.5%      | 0.2%     | 48.7%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 100.0%      |               |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 26th St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 26th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:30 to 09:30            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 8:30  | 4                        | 89    | 0     | 0      | 93        | 1                 | 0    | 3     | 0      | 4         | 0                        | 84    | 5     | 1      | 90        | 0                 | 0    | 0     | 0      | 0         | 187   |
| 8:45  | 5                        | 94    | 0     | 0      | 99        | 0                 | 0    | 5     | 0      | 5         | 0                        | 89    | 2     | 1      | 92        | 0                 | 0    | 0     | 0      | 0         | 196   |
| 9:00  | 3                        | 87    | 0     | 0      | 90        | 2                 | 0    | 0     | 0      | 2         | 0                        | 88    | 5     | 0      | 93        | 0                 | 0    | 0     | 0      | 0         | 185   |
| 9:15  | 4                        | 91    | 0     | 0      | 95        | 1                 | 0    | 5     | 0      | 6         | 0                        | 80    | 1     | 0      | 81        | 0                 | 0    | 0     | 0      | 0         | 182   |
| Total Volume                                      | 16                       | 361   | 0     | 0      | 377       | 4                 | 0    | 13    | 0      | 17        | 0                        | 341   | 13    | 2      | 356       | 0                 | 0    | 0     | 0      | 0         | 750   |
| % App Total                                       | 4.2%                     | 95.8% | 0.0%  | 0.0%   |           | 23.5%             | 0.0% | 76.5% | 0.0%   |           | 0.0%                     | 95.8% | 3.7%  | 0.6%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .800                     | .960  | .000  | .000   | .952      | .500              | .000 | .650  | .000   | .708      | .000                     | .958  | .650  | .500   | .957      | .000              | .000 | .000  | .000   | .000      | .957  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 26th St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 26th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 17:00   | 6                        | 118   | 0     | 0      | 124       | 2                 | 0    | 8     | 0      | 10        | 0                        | 112   | 5     | 0      | 117       | 0                 | 0    | 0     | 0      | 0         | 251   |
| 17:15   | 4                        | 121   | 0     | 0      | 125       | 5                 | 0    | 9     | 0      | 14        | 0                        | 118   | 4     | 0      | 122       | 0                 | 0    | 0     | 0      | 0         | 261   |
| 17:30   | 4                        | 112   | 0     | 0      | 116       | 3                 | 0    | 5     | 0      | 8         | 0                        | 115   | 8     | 0      | 123       | 0                 | 0    | 0     | 0      | 0         | 247   |
| 17:45   | 4                        | 115   | 0     | 0      | 119       | 2                 | 0    | 9     | 0      | 11        | 0                        | 120   | 9     | 0      | 129       | 0                 | 0    | 0     | 0      | 0         | 259   |
| Total Volume                                      | 18                       | 466   | 0     | 0      | 484       | 12                | 0    | 31    | 0      | 43        | 0                        | 465   | 26    | 0      | 491       | 0                 | 0    | 0     | 0      | 0         | 1018  |
| % App Total                                       | 3.7%                     | 96.3% | 0.0%  | 0.0%   |           | 27.9%             | 0.0% | 72.1% | 0.0%   |           | 0.0%                     | 94.7% | 5.3%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .750                     | .963  | .000  | .000   | .968      | .600              | .000 | .861  | .000   | .768      | .000                     | .969  | .722  | .000   | .952      | .000              | .000 | .000  | .000   | .000      | .975  |



# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-004 Telegraph Ave & 26th St

Date : 9/29/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |           |            | 26th St Westbound |          |          |            |           | Telegraph Ave Northbound |            |          |           |            | 26th St Eastbound |          |          |          |           | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|----------|-----------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL |            |            |
| 7:30               | 0                        | 15         | 0        | 0         | 15         | 2                 | 0        | 0        | 8          | 2         | 0                        | 1          | 0        | 0         | 1          | 0                 | 0        | 0        | 0        | 0         | 18         | 8          |
| 7:45               | 0                        | 13         | 0        | 2         | 13         | 0                 | 0        | 0        | 6          | 0         | 0                        | 4          | 0        | 5         | 4          | 0                 | 0        | 0        | 0        | 0         | 17         | 13         |
| 8:00               | 0                        | 16         | 0        | 0         | 16         | 0                 | 0        | 0        | 10         | 0         | 0                        | 5          | 0        | 5         | 5          | 0                 | 0        | 0        | 0        | 0         | 21         | 15         |
| 8:15               | 2                        | 21         | 0        | 3         | 23         | 0                 | 0        | 0        | 11         | 0         | 0                        | 3          | 0        | 1         | 3          | 0                 | 0        | 0        | 0        | 0         | 26         | 15         |
| <b>Total</b>       | <b>2</b>                 | <b>65</b>  | <b>0</b> | <b>5</b>  | <b>67</b>  | <b>2</b>          | <b>0</b> | <b>0</b> | <b>35</b>  | <b>2</b>  | <b>0</b>                 | <b>13</b>  | <b>0</b> | <b>11</b> | <b>13</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>82</b>  | <b>51</b>  |
| 8:30               | 0                        | 28         | 0        | 3         | 28         | 0                 | 0        | 1        | 8          | 1         | 0                        | 2          | 0        | 1         | 2          | 0                 | 0        | 0        | 0        | 0         | 31         | 12         |
| 8:45               | 1                        | 37         | 0        | 0         | 38         | 1                 | 0        | 0        | 7          | 1         | 0                        | 5          | 1        | 0         | 6          | 0                 | 0        | 0        | 0        | 0         | 45         | 7          |
| 9:00               | 0                        | 23         | 0        | 0         | 23         | 2                 | 0        | 0        | 9          | 2         | 0                        | 5          | 0        | 1         | 5          | 0                 | 0        | 0        | 0        | 0         | 30         | 10         |
| 9:15               | 0                        | 20         | 0        | 0         | 20         | 1                 | 0        | 0        | 6          | 1         | 0                        | 3          | 0        | 0         | 3          | 0                 | 0        | 0        | 0        | 0         | 24         | 6          |
| <b>Total</b>       | <b>1</b>                 | <b>108</b> | <b>0</b> | <b>3</b>  | <b>109</b> | <b>4</b>          | <b>0</b> | <b>1</b> | <b>30</b>  | <b>5</b>  | <b>0</b>                 | <b>15</b>  | <b>1</b> | <b>2</b>  | <b>16</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>130</b> | <b>35</b>  |
| 16:00              | 0                        | 19         | 0        | 4         | 19         | 0                 | 0        | 0        | 16         | 0         | 0                        | 9          | 0        | 6         | 9          | 0                 | 0        | 0        | 0        | 0         | 28         | 26         |
| 16:15              | 0                        | 2          | 0        | 3         | 2          | 1                 | 0        | 1        | 8          | 2         | 0                        | 15         | 1        | 3         | 16         | 0                 | 0        | 0        | 0        | 0         | 20         | 14         |
| 16:30              | 0                        | 8          | 0        | 4         | 8          | 1                 | 0        | 1        | 10         | 2         | 0                        | 13         | 1        | 9         | 14         | 0                 | 0        | 0        | 0        | 0         | 24         | 23         |
| 16:45              | 1                        | 5          | 0        | 1         | 6          | 0                 | 0        | 0        | 20         | 0         | 0                        | 18         | 0        | 3         | 18         | 0                 | 0        | 0        | 0        | 0         | 24         | 24         |
| <b>Total</b>       | <b>1</b>                 | <b>34</b>  | <b>0</b> | <b>12</b> | <b>35</b>  | <b>2</b>          | <b>0</b> | <b>2</b> | <b>54</b>  | <b>4</b>  | <b>0</b>                 | <b>55</b>  | <b>2</b> | <b>21</b> | <b>57</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>96</b>  | <b>87</b>  |
| 17:00              | 0                        | 9          | 0        | 2         | 9          | 0                 | 0        | 1        | 6          | 1         | 0                        | 24         | 2        | 3         | 26         | 0                 | 0        | 0        | 0        | 0         | 36         | 11         |
| 17:15              | 0                        | 11         | 0        | 4         | 11         | 0                 | 0        | 1        | 20         | 1         | 0                        | 23         | 0        | 5         | 23         | 0                 | 0        | 0        | 0        | 0         | 35         | 29         |
| 17:30              | 0                        | 7          | 0        | 9         | 7          | 0                 | 0        | 0        | 25         | 0         | 0                        | 29         | 1        | 2         | 30         | 0                 | 0        | 0        | 0        | 0         | 37         | 36         |
| 17:45              | 0                        | 13         | 0        | 4         | 13         | 0                 | 0        | 0        | 12         | 0         | 0                        | 19         | 1        | 3         | 20         | 0                 | 0        | 0        | 0        | 0         | 33         | 19         |
| <b>Total</b>       | <b>0</b>                 | <b>40</b>  | <b>0</b> | <b>19</b> | <b>40</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>63</b>  | <b>2</b>  | <b>0</b>                 | <b>95</b>  | <b>4</b> | <b>13</b> | <b>99</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>141</b> | <b>95</b>  |
| <b>Grand Total</b> | <b>4</b>                 | <b>247</b> | <b>0</b> | <b>39</b> | <b>251</b> | <b>8</b>          | <b>0</b> | <b>5</b> | <b>182</b> | <b>13</b> | <b>0</b>                 | <b>178</b> | <b>7</b> | <b>47</b> | <b>185</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>449</b> | <b>268</b> |
| Apprch %           | 1.6%                     | 98.4%      | 0.0%     |           |            | 61.5%             | 0.0%     | 38.5%    |            |           | 0.0%                     | 96.2%      | 3.8%     |           |            | 0.0%              | 0.0%     | 0.0%     |          |           |            |            |
| Total %            | 0.9%                     | 55.0%      | 0.0%     |           | 55.9%      | 1.8%              | 0.0%     | 1.1%     |            | 2.9%      | 0.0%                     | 39.6%      | 1.6%     |           | 41.2%      | 0.0%              | 0.0%     | 0.0%     |          | 0.0%      | 100.0%     |            |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | 26th St Westbound |      |       |      |           | Telegraph Ave Northbound |       |       |      |           | 26th St Eastbound |      |       |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:30 to 09:30            |                          |       |       |      |           |                   |      |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |       |       |      |           |                   |      |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| 8:30  | 0                        | 28    | 0     | 3    | 28        | 0                 | 0    | 1     | 8    | 1         | 0                        | 2     | 0     | 1    | 2         | 0                 | 0    | 0     | 0    | 0         | 31    |
| 8:45  | 1                        | 37    | 0     | 0    | 38        | 1                 | 0    | 0     | 7    | 1         | 0                        | 5     | 1     | 0    | 6         | 0                 | 0    | 0     | 0    | 0         | 45    |
| 9:00  | 0                        | 23    | 0     | 0    | 23        | 2                 | 0    | 0     | 9    | 2         | 0                        | 5     | 0     | 1    | 5         | 0                 | 0    | 0     | 0    | 0         | 30    |
| 9:15  | 0                        | 20    | 0     | 0    | 20        | 1                 | 0    | 0     | 6    | 1         | 0                        | 3     | 0     | 0    | 3         | 0                 | 0    | 0     | 0    | 0         | 24    |
| Total Volume                                      | 1                        | 108   | 0     | 3    | 109       | 4                 | 0    | 1     | 30   | 5         | 0                        | 15    | 1     | 2    | 16        | 0                 | 0    | 0     | 0    | 0         | 130   |
| % App Total                                       | 0.9%                     | 99.1% | 0.0%  |      |           | 80.0%             | 0.0% | 20.0% |      |           | 0.0%                     | 93.8% | 6.3%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           |       |
| PHF   | .250                     | .730  | .000  |      | .717      | .500              | .000 | .250  |      | .625      | .000                     | .750  | .250  |      | .667      | .000              | .000 | .000  |      | .000      | .722  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |        |       |      |           | 26th St Westbound |      |        |      |           | Telegraph Ave Northbound |       |       |      |           | 26th St Eastbound |      |       |      |           | Total |
|---|--------------------------|--------|-------|------|-----------|-------------------|------|--------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|-------|
|   | LEFT                     | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                          |        |       |      |           |                   |      |        |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |        |       |      |           |                   |      |        |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| 17:00   | 0                        | 9      | 0     | 2    | 9         | 0                 | 0    | 1      | 6    | 1         | 0                        | 24    | 2     | 3    | 26        | 0                 | 0    | 0     | 0    | 0         | 36    |
| 17:15   | 0                        | 11     | 0     | 4    | 11        | 0                 | 0    | 1      | 20   | 1         | 0                        | 23    | 0     | 5    | 23        | 0                 | 0    | 0     | 0    | 0         | 35    |
| 17:30   | 0                        | 7      | 0     | 9    | 7         | 0                 | 0    | 0      | 25   | 0         | 0                        | 29    | 1     | 2    | 30        | 0                 | 0    | 0     | 0    | 0         | 37    |
| 17:45   | 0                        | 13     | 0     | 4    | 13        | 0                 | 0    | 0      | 12   | 0         | 0                        | 19    | 1     | 3    | 20        | 0                 | 0    | 0     | 0    | 0         | 33    |
| Total Volume                                      | 0                        | 40     | 0     | 19   | 40        | 0                 | 0    | 2      | 63   | 2         | 0                        | 95    | 4     | 13   | 99        | 0                 | 0    | 0     | 0    | 0         | 141   |
| % App Total                                       | 0.0%                     | 100.0% | 0.0%  |      |           | 0.0%              | 0.0% | 100.0% |      |           | 0.0%                     | 96.0% | 4.0%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           |       |
| PHF   | .000                     | .769   | .000  |      | .769      | .000              | .000 | .500   |      | .500      | .000                     | .819  | .500  |      | .825      | .000              | .000 | .000  |      | .000      | .953  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-002 Broadway & 26th St  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Broadway Southbound |             |           |          |             | 26th St Westbound |          |          |          |           | Broadway Northbound |             |           |           |             | 26th St Eastbound |           |           |          |           | Total       | Utturns Total |
|--------------------|---------------------|-------------|-----------|----------|-------------|-------------------|----------|----------|----------|-----------|---------------------|-------------|-----------|-----------|-------------|-------------------|-----------|-----------|----------|-----------|-------------|---------------|
|                    | LEFT                | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT              | THRU      | RIGHT     | UTURNS   | APP.TOTAL |             |               |
| 7:00               | 2                   | 62          | 0         | 1        | 65          | 0                 | 0        | 0        | 0        | 0         | 1                   | 58          | 1         | 0         | 60          | 0                 | 0         | 1         | 0        | 1         | 126         | 1             |
| 7:15               | 1                   | 72          | 3         | 1        | 77          | 0                 | 0        | 0        | 0        | 0         | 1                   | 66          | 2         | 1         | 70          | 1                 | 0         | 2         | 0        | 3         | 150         | 2             |
| 7:30               | 9                   | 99          | 0         | 0        | 108         | 0                 | 0        | 0        | 0        | 0         | 2                   | 84          | 4         | 1         | 91          | 0                 | 2         | 1         | 0        | 3         | 202         | 1             |
| 7:45               | 5                   | 152         | 3         | 0        | 160         | 0                 | 0        | 0        | 0        | 0         | 3                   | 100         | 8         | 1         | 112         | 2                 | 1         | 1         | 0        | 4         | 276         | 1             |
| <b>Total</b>       | <b>17</b>           | <b>385</b>  | <b>6</b>  | <b>2</b> | <b>410</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>7</b>            | <b>308</b>  | <b>15</b> | <b>3</b>  | <b>333</b>  | <b>3</b>          | <b>3</b>  | <b>5</b>  | <b>0</b> | <b>11</b> | <b>754</b>  | <b>5</b>      |
| 8:00               | 7                   | 136         | 5         | 0        | 148         | 0                 | 0        | 0        | 0        | 0         | 1                   | 128         | 3         | 2         | 134         | 0                 | 1         | 1         | 0        | 2         | 284         | 2             |
| 8:15               | 3                   | 164         | 3         | 0        | 170         | 0                 | 0        | 0        | 0        | 0         | 6                   | 114         | 7         | 0         | 127         | 0                 | 1         | 2         | 0        | 3         | 300         | 0             |
| 8:30               | 2                   | 180         | 6         | 0        | 188         | 0                 | 0        | 0        | 0        | 0         | 2                   | 149         | 7         | 3         | 161         | 0                 | 0         | 4         | 0        | 4         | 353         | 3             |
| 8:45               | 7                   | 199         | 3         | 0        | 209         | 0                 | 0        | 0        | 0        | 0         | 2                   | 130         | 6         | 0         | 138         | 1                 | 0         | 3         | 0        | 4         | 351         | 0             |
| <b>Total</b>       | <b>19</b>           | <b>679</b>  | <b>17</b> | <b>0</b> | <b>715</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>11</b>           | <b>521</b>  | <b>23</b> | <b>5</b>  | <b>560</b>  | <b>1</b>          | <b>2</b>  | <b>10</b> | <b>0</b> | <b>13</b> | <b>1288</b> | <b>5</b>      |
| 16:00              | 5                   | 160         | 2         | 0        | 167         | 0                 | 0        | 0        | 0        | 0         | 5                   | 178         | 8         | 4         | 195         | 0                 | 2         | 6         | 0        | 8         | 370         | 4             |
| 16:15              | 4                   | 173         | 3         | 1        | 181         | 0                 | 0        | 0        | 0        | 0         | 1                   | 183         | 5         | 3         | 192         | 1                 | 1         | 2         | 0        | 4         | 377         | 4             |
| 16:30              | 4                   | 196         | 6         | 1        | 207         | 0                 | 0        | 0        | 0        | 0         | 2                   | 188         | 5         | 0         | 195         | 4                 | 2         | 5         | 0        | 11        | 413         | 1             |
| 16:45              | 5                   | 168         | 8         | 1        | 182         | 0                 | 0        | 0        | 0        | 0         | 2                   | 151         | 1         | 1         | 155         | 4                 | 4         | 5         | 0        | 13        | 350         | 2             |
| <b>Total</b>       | <b>18</b>           | <b>697</b>  | <b>19</b> | <b>3</b> | <b>737</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>10</b>           | <b>700</b>  | <b>19</b> | <b>8</b>  | <b>737</b>  | <b>9</b>          | <b>9</b>  | <b>18</b> | <b>0</b> | <b>36</b> | <b>1510</b> | <b>11</b>     |
| 17:00              | 3                   | 205         | 9         | 1        | 218         | 0                 | 0        | 0        | 0        | 0         | 3                   | 188         | 1         | 5         | 197         | 0                 | 0         | 6         | 0        | 6         | 421         | 6             |
| 17:15              | 10                  | 188         | 4         | 0        | 202         | 0                 | 0        | 0        | 0        | 0         | 3                   | 199         | 7         | 3         | 212         | 4                 | 1         | 6         | 0        | 11        | 425         | 3             |
| 17:30              | 12                  | 160         | 7         | 0        | 179         | 0                 | 0        | 0        | 0        | 0         | 5                   | 217         | 6         | 4         | 232         | 1                 | 5         | 5         | 0        | 11        | 422         | 4             |
| 17:45              | 4                   | 184         | 4         | 0        | 192         | 0                 | 0        | 0        | 0        | 0         | 6                   | 182         | 6         | 4         | 198         | 1                 | 4         | 4         | 0        | 9         | 399         | 4             |
| <b>Total</b>       | <b>29</b>           | <b>737</b>  | <b>24</b> | <b>1</b> | <b>791</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>17</b>           | <b>786</b>  | <b>20</b> | <b>16</b> | <b>839</b>  | <b>6</b>          | <b>10</b> | <b>21</b> | <b>0</b> | <b>37</b> | <b>1667</b> | <b>17</b>     |
| <b>Grand Total</b> | <b>83</b>           | <b>2498</b> | <b>66</b> | <b>6</b> | <b>2653</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>45</b>           | <b>2315</b> | <b>77</b> | <b>32</b> | <b>2469</b> | <b>19</b>         | <b>24</b> | <b>54</b> | <b>0</b> | <b>97</b> | <b>5219</b> | <b>38</b>     |
| Apprch %           | 3.1%                | 94.2%       | 2.5%      | 0.2%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     |           | 1.8%                | 93.8%       | 3.1%      | 1.3%      |             | 19.6%             | 24.7%     | 55.7%     | 0.0%     |           |             |               |
| Total %            | 1.6%                | 47.9%       | 1.3%      | 0.1%     | 50.8%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.9%                | 44.4%       | 1.5%      | 0.6%      | 47.3%       | 0.4%              | 0.5%      | 1.0%      | 0.0%     | 1.9%      | 100.0%      |               |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 26th St Westbound |      |       |        |           | Broadway Northbound |       |       |        |           | 26th St Eastbound |       |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |
| 8:00  | 7                   | 136   | 5     | 0      | 148       | 0                 | 0    | 0     | 0      | 0         | 1                   | 128   | 3     | 2      | 134       | 0                 | 1     | 1     | 0      | 2         | 284   |
| 8:15  | 3                   | 164   | 3     | 0      | 170       | 0                 | 0    | 0     | 0      | 0         | 6                   | 114   | 7     | 0      | 127       | 0                 | 1     | 2     | 0      | 3         | 300   |
| 8:30  | 2                   | 180   | 6     | 0      | 188       | 0                 | 0    | 0     | 0      | 0         | 2                   | 149   | 7     | 3      | 161       | 0                 | 0     | 4     | 0      | 4         | 353   |
| 8:45  | 7                   | 199   | 3     | 0      | 209       | 0                 | 0    | 0     | 0      | 0         | 2                   | 130   | 6     | 0      | 138       | 1                 | 0     | 3     | 0      | 4         | 351   |
| Total Volume                                      | 19                  | 679   | 17    | 0      | 715       | 0                 | 0    | 0     | 0      | 0         | 11                  | 521   | 23    | 5      | 560       | 1                 | 2     | 10    | 0      | 13        | 1288  |
| % App Total                                       | 2.7%                | 95.0% | 2.4%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   |           | 2.0%                | 93.0% | 4.1%  | 0.9%   |           | 7.7%              | 15.4% | 76.9% | 0.0%   |           |       |
| PHF   | .679                | .853  | .708  | .000   | .855      | .000              | .000 | .000  | .000   | .000      | .458                | .874  | .821  | .417   | .870      | .250              | .500  | .625  | .000   | .813      | .912  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 26th St Westbound |      |       |        |           | Broadway Northbound |       |       |        |           | 26th St Eastbound |       |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |
| 17:00   | 3                   | 205   | 9     | 1      | 218       | 0                 | 0    | 0     | 0      | 0         | 3                   | 188   | 1     | 5      | 197       | 0                 | 0     | 6     | 0      | 6         | 421   |
| 17:15   | 10                  | 188   | 4     | 0      | 202       | 0                 | 0    | 0     | 0      | 0         | 3                   | 199   | 7     | 3      | 212       | 4                 | 1     | 6     | 0      | 11        | 425   |
| 17:30   | 12                  | 160   | 7     | 0      | 179       | 0                 | 0    | 0     | 0      | 0         | 5                   | 217   | 6     | 4      | 232       | 1                 | 5     | 5     | 0      | 11        | 422   |
| 17:45   | 4                   | 184   | 4     | 0      | 192       | 0                 | 0    | 0     | 0      | 0         | 6                   | 182   | 6     | 4      | 198       | 1                 | 4     | 4     | 0      | 9         | 399   |
| Total Volume                                      | 29                  | 737   | 24    | 1      | 791       | 0                 | 0    | 0     | 0      | 0         | 17                  | 786   | 20    | 16     | 839       | 6                 | 10    | 21    | 0      | 37        | 1667  |
| % App Total                                       | 3.7%                | 93.2% | 3.0%  | 0.1%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   |           | 2.0%                | 93.7% | 2.4%  | 1.9%   |           | 16.2%             | 27.0% | 56.8% | 0.0%   |           |       |
| PHF   | .604                | .899  | .667  | .250   | .907      | .000              | .000 | .000  | .000   | .000      | .708                | .906  | .714  | .800   | .904      | .375              | .500  | .875  | .000   | .841      | .981  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-002 Broadway & 26th St  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |           |            | 26th St Westbound |          |          |            |           | Broadway Northbound |            |          |           |            | 26th St Eastbound |          |          |            |           | Total      | Peds Total |
|--------------------|---------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|---------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|------------|------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:00               | 0                   | 6          | 0        | 0         | 6          | 0                 | 0        | 0        | 2          | 0         | 0                   | 2          | 0        | 5         | 2          | 0                 | 0        | 1        | 8          | 1         | 9          | 15         |
| 7:15               | 0                   | 12         | 0        | 1         | 12         | 0                 | 0        | 0        | 8          | 0         | 0                   | 1          | 0        | 4         | 1          | 0                 | 0        | 1        | 12         | 1         | 14         | 25         |
| 7:30               | 0                   | 7          | 0        | 0         | 7          | 0                 | 0        | 0        | 13         | 0         | 0                   | 2          | 0        | 6         | 2          | 0                 | 0        | 0        | 15         | 0         | 9          | 34         |
| 7:45               | 0                   | 17         | 0        | 1         | 17         | 0                 | 0        | 0        | 22         | 0         | 0                   | 4          | 0        | 10        | 4          | 0                 | 0        | 0        | 26         | 0         | 21         | 59         |
| <b>Total</b>       | <b>0</b>            | <b>42</b>  | <b>0</b> | <b>2</b>  | <b>42</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>45</b>  | <b>0</b>  | <b>0</b>            | <b>9</b>   | <b>0</b> | <b>25</b> | <b>9</b>   | <b>0</b>          | <b>0</b> | <b>2</b> | <b>61</b>  | <b>2</b>  | <b>53</b>  | <b>133</b> |
| 8:00               | 0                   | 23         | 0        | 0         | 23         | 0                 | 0        | 1        | 14         | 1         | 0                   | 1          | 1        | 6         | 2          | 0                 | 0        | 0        | 27         | 0         | 26         | 47         |
| 8:15               | 0                   | 24         | 0        | 0         | 24         | 0                 | 0        | 0        | 14         | 0         | 0                   | 1          | 0        | 8         | 1          | 0                 | 0        | 0        | 16         | 0         | 25         | 38         |
| 8:30               | 0                   | 24         | 1        | 0         | 25         | 0                 | 0        | 0        | 22         | 0         | 0                   | 4          | 1        | 12        | 5          | 0                 | 0        | 0        | 29         | 0         | 30         | 63         |
| 8:45               | 0                   | 27         | 1        | 0         | 28         | 0                 | 0        | 0        | 21         | 0         | 0                   | 6          | 0        | 4         | 6          | 0                 | 0        | 1        | 24         | 1         | 35         | 49         |
| <b>Total</b>       | <b>0</b>            | <b>98</b>  | <b>2</b> | <b>0</b>  | <b>100</b> | <b>0</b>          | <b>0</b> | <b>1</b> | <b>71</b>  | <b>1</b>  | <b>0</b>            | <b>12</b>  | <b>2</b> | <b>30</b> | <b>14</b>  | <b>0</b>          | <b>0</b> | <b>1</b> | <b>96</b>  | <b>1</b>  | <b>116</b> | <b>197</b> |
| 16:00              | 0                   | 5          | 0        | 2         | 5          | 0                 | 0        | 0        | 22         | 0         | 1                   | 7          | 0        | 6         | 8          | 0                 | 2        | 0        | 21         | 2         | 15         | 51         |
| 16:15              | 0                   | 3          | 0        | 0         | 3          | 0                 | 0        | 0        | 10         | 0         | 1                   | 8          | 0        | 8         | 9          | 0                 | 0        | 0        | 17         | 0         | 12         | 35         |
| 16:30              | 0                   | 4          | 0        | 4         | 4          | 0                 | 0        | 0        | 28         | 0         | 0                   | 15         | 0        | 4         | 15         | 1                 | 1        | 0        | 12         | 2         | 21         | 48         |
| 16:45              | 0                   | 6          | 0        | 2         | 6          | 0                 | 0        | 0        | 22         | 0         | 2                   | 25         | 0        | 10        | 27         | 0                 | 0        | 0        | 13         | 0         | 33         | 47         |
| <b>Total</b>       | <b>0</b>            | <b>18</b>  | <b>0</b> | <b>8</b>  | <b>18</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>82</b>  | <b>0</b>  | <b>4</b>            | <b>55</b>  | <b>0</b> | <b>28</b> | <b>59</b>  | <b>1</b>          | <b>3</b> | <b>0</b> | <b>63</b>  | <b>4</b>  | <b>81</b>  | <b>181</b> |
| 17:00              | 0                   | 7          | 0        | 0         | 7          | 0                 | 0        | 0        | 24         | 0         | 1                   | 26         | 0        | 8         | 27         | 0                 | 0        | 0        | 29         | 0         | 34         | 61         |
| 17:15              | 0                   | 5          | 0        | 1         | 5          | 0                 | 0        | 0        | 20         | 0         | 0                   | 27         | 0        | 2         | 27         | 0                 | 1        | 0        | 21         | 1         | 33         | 44         |
| 17:30              | 0                   | 6          | 0        | 2         | 6          | 0                 | 0        | 0        | 21         | 0         | 0                   | 20         | 0        | 3         | 20         | 1                 | 0        | 0        | 13         | 1         | 27         | 39         |
| 17:45              | 0                   | 11         | 0        | 0         | 11         | 0                 | 0        | 0        | 17         | 0         | 0                   | 25         | 0        | 2         | 25         | 0                 | 0        | 0        | 17         | 0         | 36         | 36         |
| <b>Total</b>       | <b>0</b>            | <b>29</b>  | <b>0</b> | <b>3</b>  | <b>29</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>82</b>  | <b>0</b>  | <b>1</b>            | <b>98</b>  | <b>0</b> | <b>15</b> | <b>99</b>  | <b>1</b>          | <b>1</b> | <b>0</b> | <b>80</b>  | <b>2</b>  | <b>130</b> | <b>180</b> |
| <b>Grand Total</b> | <b>0</b>            | <b>187</b> | <b>2</b> | <b>13</b> | <b>189</b> | <b>0</b>          | <b>0</b> | <b>1</b> | <b>280</b> | <b>1</b>  | <b>5</b>            | <b>174</b> | <b>2</b> | <b>98</b> | <b>181</b> | <b>2</b>          | <b>4</b> | <b>3</b> | <b>300</b> | <b>9</b>  | <b>380</b> | <b>691</b> |
| Apprch %           | 0.0%                | 98.9%      | 1.1%     |           |            | 0.0%              | 0.0%     | 100.0%   |            |           | 2.8%                | 96.1%      | 1.1%     |           |            | 22.2%             | 44.4%    | 33.3%    |            |           |            |            |
| Total %            | 0.0%                | 49.2%      | 0.5%     |           | 49.7%      | 0.0%              | 0.0%     | 0.3%     |            | 0.3%      | 1.3%                | 45.8%      | 0.5%     |           | 47.6%      | 0.5%              | 1.1%     | 0.8%     |            | 2.4%      | 100.0%     |            |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 26th St Westbound |      |        |      |           | Broadway Northbound |       |       |      |           | 26th St Eastbound |      |        |      |           | Total |
|---|---------------------|-------|-------|------|-----------|-------------------|------|--------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|------|--------|------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                   |      |        |      |           |                     |       |       |      |           |                   |      |        |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                   |      |        |      |           |                     |       |       |      |           |                   |      |        |      |           |       |
| 8:00  | 0                   | 23    | 0     | 0    | 23        | 0                 | 0    | 1      | 14   | 1         | 0                   | 1     | 1     | 6    | 2         | 0                 | 0    | 0      | 27   | 0         | 26    |
| 8:15  | 0                   | 24    | 0     | 0    | 24        | 0                 | 0    | 0      | 14   | 0         | 0                   | 1     | 0     | 8    | 1         | 0                 | 0    | 0      | 16   | 0         | 25    |
| 8:30  | 0                   | 24    | 1     | 0    | 25        | 0                 | 0    | 0      | 22   | 0         | 0                   | 4     | 1     | 12   | 5         | 0                 | 0    | 0      | 29   | 0         | 30    |
| 8:45  | 0                   | 27    | 1     | 0    | 28        | 0                 | 0    | 0      | 21   | 0         | 0                   | 6     | 0     | 4    | 6         | 0                 | 0    | 1      | 24   | 1         | 35    |
| Total Volume                                      | 0                   | 98    | 2     | 0    | 100       | 0                 | 0    | 1      | 71   | 1         | 0                   | 12    | 2     | 30   | 14        | 0                 | 0    | 1      | 96   | 1         | 116   |
| % App Total                                       | 0.0%                | 98.0% | 2.0%  |      |           | 0.0%              | 0.0% | 100.0% |      |           | 0.0%                | 85.7% | 14.3% |      |           | 0.0%              | 0.0% | 100.0% |      |           |       |
| PHF   | .000                | .907  | .500  |      | .893      | .000              | .000 | .250   |      | .250      | .000                | .500  | .500  |      | .583      | .000              | .000 | .250   |      | .250      | .829  |

| PM PEAK HOUR                                      | Broadway Southbound |        |       |      |           | 26th St Westbound |      |       |      |           | Broadway Northbound |       |       |      |           | 26th St Eastbound |       |       |      |           | Total |
|---|---------------------|--------|-------|------|-----------|-------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                     |        |       |      |           |                   |      |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |        |       |      |           |                   |      |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| 17:00   | 0                   | 7      | 0     | 0    | 7         | 0                 | 0    | 0     | 24   | 0         | 1                   | 26    | 0     | 8    | 27        | 0                 | 0     | 0     | 29   | 0         | 34    |
| 17:15   | 0                   | 5      | 0     | 1    | 5         | 0                 | 0    | 0     | 20   | 0         | 0                   | 27    | 0     | 2    | 27        | 0                 | 1     | 0     | 21   | 1         | 33    |
| 17:30   | 0                   | 6      | 0     | 2    | 6         | 0                 | 0    | 0     | 21   | 0         | 0                   | 20    | 0     | 3    | 20        | 1                 | 0     | 0     | 13   | 1         | 27    |
| 17:45   | 0                   | 11     | 0     | 0    | 11        | 0                 | 0    | 0     | 17   | 0         | 0                   | 25    | 0     | 2    | 25        | 0                 | 0     | 0     | 17   | 0         | 36    |
| Total Volume                                      | 0                   | 29     | 0     | 3    | 29        | 0                 | 0    | 0     | 82   | 0         | 1                   | 98    | 0     | 15   | 99        | 1                 | 1     | 0     | 80   | 2         | 130   |
| % App Total                                       | 0.0%                | 100.0% | 0.0%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           | 1.0%                | 99.0% | 0.0%  |      |           | 50.0%             | 50.0% | 0.0%  |      |           |       |
| PHF   | .000                | .659   | .000  |      | .659      | .000              | .000 | .000  |      | .000      | .250                | .907  | .000  |      | .917      | .250              | .250  | .000  |      | .500      | .903  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-003 Broadway & 25th St  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Broadway Southbound |             |           |           |             | 25th St Westbound |          |            |          |            | Broadway Northbound |             |           |           |             | 25th St Eastbound |           |           |          |            | Total       | Utturns Total |
|--------------------|---------------------|-------------|-----------|-----------|-------------|-------------------|----------|------------|----------|------------|---------------------|-------------|-----------|-----------|-------------|-------------------|-----------|-----------|----------|------------|-------------|---------------|
|                    | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT              | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT              | THRU      | RIGHT     | UTURNS   | APP.TOTAL  |             |               |
| 7:00               | 18                  | 44          | 4         | 0         | 66          | 0                 | 0        | 6          | 0        | 6          | 0                   | 60          | 0         | 1         | 61          | 0                 | 1         | 2         | 0        | 3          | 136         | 1             |
| 7:15               | 25                  | 43          | 0         | 0         | 68          | 0                 | 0        | 13         | 0        | 13         | 1                   | 71          | 1         | 1         | 74          | 0                 | 1         | 4         | 0        | 5          | 160         | 1             |
| 7:30               | 26                  | 85          | 2         | 1         | 114         | 0                 | 0        | 9          | 0        | 9          | 3                   | 97          | 1         | 1         | 102         | 0                 | 2         | 4         | 0        | 6          | 231         | 2             |
| 7:45               | 42                  | 92          | 8         | 3         | 145         | 0                 | 0        | 6          | 0        | 6          | 0                   | 92          | 1         | 0         | 93          | 0                 | 2         | 1         | 0        | 3          | 247         | 3             |
| <b>Total</b>       | <b>111</b>          | <b>264</b>  | <b>14</b> | <b>4</b>  | <b>393</b>  | <b>0</b>          | <b>0</b> | <b>34</b>  | <b>0</b> | <b>34</b>  | <b>4</b>            | <b>320</b>  | <b>3</b>  | <b>3</b>  | <b>330</b>  | <b>0</b>          | <b>6</b>  | <b>11</b> | <b>0</b> | <b>17</b>  | <b>774</b>  | <b>7</b>      |
| 8:00               | 59                  | 88          | 3         | 2         | 152         | 0                 | 0        | 16         | 0        | 16         | 2                   | 102         | 2         | 0         | 106         | 0                 | 2         | 2         | 0        | 4          | 278         | 2             |
| 8:15               | 57                  | 98          | 4         | 1         | 160         | 0                 | 0        | 8          | 0        | 8          | 3                   | 121         | 1         | 1         | 126         | 0                 | 4         | 7         | 0        | 11         | 305         | 2             |
| 8:30               | 64                  | 120         | 6         | 1         | 191         | 0                 | 0        | 19         | 0        | 19         | 1                   | 122         | 1         | 2         | 126         | 0                 | 2         | 6         | 0        | 8          | 344         | 3             |
| 8:45               | 64                  | 121         | 3         | 0         | 188         | 0                 | 0        | 10         | 0        | 10         | 2                   | 128         | 1         | 0         | 131         | 0                 | 1         | 8         | 0        | 9          | 338         | 0             |
| <b>Total</b>       | <b>244</b>          | <b>427</b>  | <b>16</b> | <b>4</b>  | <b>691</b>  | <b>0</b>          | <b>0</b> | <b>53</b>  | <b>0</b> | <b>53</b>  | <b>8</b>            | <b>473</b>  | <b>5</b>  | <b>3</b>  | <b>489</b>  | <b>0</b>          | <b>9</b>  | <b>23</b> | <b>0</b> | <b>32</b>  | <b>1265</b> | <b>7</b>      |
| 16:00              | 59                  | 116         | 2         | 2         | 179         | 0                 | 0        | 38         | 0        | 38         | 1                   | 142         | 2         | 1         | 146         | 0                 | 3         | 3         | 0        | 6          | 369         | 3             |
| 16:15              | 53                  | 114         | 4         | 1         | 172         | 0                 | 0        | 19         | 0        | 19         | 3                   | 178         | 5         | 2         | 188         | 0                 | 1         | 5         | 0        | 6          | 385         | 3             |
| 16:30              | 59                  | 138         | 10        | 2         | 209         | 0                 | 0        | 21         | 0        | 21         | 3                   | 164         | 5         | 1         | 173         | 0                 | 4         | 11        | 0        | 15         | 418         | 3             |
| 16:45              | 49                  | 117         | 5         | 2         | 173         | 0                 | 0        | 28         | 0        | 28         | 3                   | 135         | 5         | 1         | 144         | 0                 | 1         | 7         | 0        | 8          | 353         | 3             |
| <b>Total</b>       | <b>220</b>          | <b>485</b>  | <b>21</b> | <b>7</b>  | <b>733</b>  | <b>0</b>          | <b>0</b> | <b>106</b> | <b>0</b> | <b>106</b> | <b>10</b>           | <b>619</b>  | <b>17</b> | <b>5</b>  | <b>651</b>  | <b>0</b>          | <b>9</b>  | <b>26</b> | <b>0</b> | <b>35</b>  | <b>1525</b> | <b>12</b>     |
| 17:00              | 57                  | 161         | 4         | 0         | 222         | 0                 | 0        | 37         | 0        | 37         | 5                   | 148         | 4         | 1         | 158         | 1                 | 6         | 2         | 0        | 9          | 426         | 1             |
| 17:15              | 59                  | 127         | 5         | 1         | 192         | 0                 | 0        | 38         | 0        | 38         | 3                   | 182         | 2         | 1         | 188         | 2                 | 4         | 7         | 0        | 13         | 431         | 2             |
| 17:30              | 63                  | 102         | 6         | 5         | 176         | 0                 | 0        | 33         | 0        | 33         | 5                   | 183         | 5         | 0         | 193         | 0                 | 4         | 5         | 0        | 9          | 411         | 5             |
| 17:45              | 49                  | 123         | 12        | 1         | 185         | 0                 | 0        | 43         | 0        | 43         | 5                   | 162         | 6         | 1         | 174         | 1                 | 3         | 7         | 0        | 11         | 413         | 2             |
| <b>Total</b>       | <b>228</b>          | <b>513</b>  | <b>27</b> | <b>7</b>  | <b>775</b>  | <b>0</b>          | <b>0</b> | <b>151</b> | <b>0</b> | <b>151</b> | <b>18</b>           | <b>675</b>  | <b>17</b> | <b>3</b>  | <b>713</b>  | <b>4</b>          | <b>17</b> | <b>21</b> | <b>0</b> | <b>42</b>  | <b>1681</b> | <b>10</b>     |
| <b>Grand Total</b> | <b>803</b>          | <b>1689</b> | <b>78</b> | <b>22</b> | <b>2592</b> | <b>0</b>          | <b>0</b> | <b>344</b> | <b>0</b> | <b>344</b> | <b>40</b>           | <b>2087</b> | <b>42</b> | <b>14</b> | <b>2183</b> | <b>4</b>          | <b>41</b> | <b>81</b> | <b>0</b> | <b>126</b> | <b>5245</b> | <b>36</b>     |
| Apprch %           | 31.0%               | 65.2%       | 3.0%      | 0.8%      |             | 0.0%              | 0.0%     | 100.0%     | 0.0%     |            | 1.8%                | 95.6%       | 1.9%      | 0.6%      |             | 3.2%              | 32.5%     | 64.3%     | 0.0%     |            |             |               |
| Total %            | 15.3%               | 32.2%       | 1.5%      | 0.4%      | 49.4%       | 0.0%              | 0.0%     | 6.6%       | 0.0%     | 6.6%       | 0.8%                | 39.8%       | 0.8%      | 0.3%      | 41.6%       | 0.1%              | 0.8%      | 1.5%      | 0.0%     | 2.4%       | 100.0%      |               |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 25th St Westbound |      |        |        |           | Broadway Northbound |       |       |        |           | 25th St Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|-------------------|------|--------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT  | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                   |      |        |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                   |      |        |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| 8:00  | 59                  | 88    | 3     | 2      | 152       | 0                 | 0    | 16     | 0      | 16        | 2                   | 102   | 2     | 0      | 106       | 0                 | 2     | 2     | 0      | 4         | 278   |  |
| 8:15  | 57                  | 98    | 4     | 1      | 160       | 0                 | 0    | 8      | 0      | 8         | 3                   | 121   | 1     | 1      | 126       | 0                 | 4     | 7     | 0      | 11        | 305   |  |
| 8:30  | 64                  | 120   | 6     | 1      | 191       | 0                 | 0    | 19     | 0      | 19        | 1                   | 122   | 1     | 2      | 126       | 0                 | 2     | 6     | 0      | 8         | 344   |  |
| 8:45  | 64                  | 121   | 3     | 0      | 188       | 0                 | 0    | 10     | 0      | 10        | 2                   | 128   | 1     | 0      | 131       | 0                 | 1     | 8     | 0      | 9         | 338   |  |
| Total Volume                                      | 244                 | 427   | 16    | 4      | 691       | 0                 | 0    | 53     | 0      | 53        | 8                   | 473   | 5     | 3      | 489       | 0                 | 9     | 23    | 0      | 32        | 1265  |  |
| % App Total                                       | 35.3%               | 61.8% | 2.3%  | 0.6%   |           | 0.0%              | 0.0% | 100.0% | 0.0%   |           | 1.6%                | 96.7% | 1.0%  | 0.6%   |           | 0.0%              | 28.1% | 71.9% | 0.0%   |           |       |  |
| PHF   | .953                | .882  | .667  | .500   | .904      | .000              | .000 | .697   | .000   | .697      | .667                | .924  | .625  | .375   | .933      | .000              | .563  | .719  | .000   | .727      | .919  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 25th St Westbound |      |        |        |           | Broadway Northbound |       |       |        |           | 25th St Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|-------------------|------|--------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT  | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                   |      |        |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                   |      |        |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| 17:00   | 57                  | 161   | 4     | 0      | 222       | 0                 | 0    | 37     | 0      | 37        | 5                   | 148   | 4     | 1      | 158       | 1                 | 6     | 2     | 0      | 9         | 426   |  |
| 17:15   | 59                  | 127   | 5     | 1      | 192       | 0                 | 0    | 38     | 0      | 38        | 3                   | 182   | 2     | 1      | 188       | 2                 | 4     | 7     | 0      | 13        | 431   |  |
| 17:30   | 63                  | 102   | 6     | 5      | 176       | 0                 | 0    | 33     | 0      | 33        | 5                   | 183   | 5     | 0      | 193       | 0                 | 4     | 5     | 0      | 9         | 411   |  |
| 17:45   | 49                  | 123   | 12    | 1      | 185       | 0                 | 0    | 43     | 0      | 43        | 5                   | 162   | 6     | 1      | 174       | 1                 | 3     | 7     | 0      | 11        | 413   |  |
| Total Volume                                      | 228                 | 513   | 27    | 7      | 775       | 0                 | 0    | 151    | 0      | 151       | 18                  | 675   | 17    | 3      | 713       | 4                 | 17    | 21    | 0      | 42        | 1681  |  |
| % App Total                                       | 29.4%               | 66.2% | 3.5%  | 0.9%   |           | 0.0%              | 0.0% | 100.0% | 0.0%   |           | 2.5%                | 94.7% | 2.4%  | 0.4%   |           | 9.5%              | 40.5% | 50.0% | 0.0%   |           |       |  |
| PHF   | .905                | .797  | .563  | .350   | .873      | .000              | .000 | .878   | .000   | .878      | .900                | .922  | .708  | .750   | .924      | .500              | .708  | .750  | .000   | .808      | .975  |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-003 Broadway & 25th St  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |          |            | 25th St Westbound |          |           |            |           | Broadway Northbound |            |          |           |            | 25th St Eastbound |          |          |            |           | Total      | Peds Total |
|--------------------|---------------------|------------|----------|----------|------------|-------------------|----------|-----------|------------|-----------|---------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|------------|------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS     | APP.TOTAL  | LEFT              | THRU     | RIGHT     | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:00               | 5                   | 4          | 0        | 1        | 9          | 0                 | 0        | 0         | 10         | 0         | 0                   | 0          | 1        | 0         | 0          | 0                 | 2        | 11       | 2          | 11        | 23         |            |
| 7:15               | 4                   | 9          | 0        | 0        | 13         | 0                 | 0        | 1         | 10         | 1         | 0                   | 2          | 0        | 4         | 2          | 0                 | 0        | 0        | 16         | 0         | 16         | 30         |
| 7:30               | 2                   | 8          | 0        | 0        | 10         | 0                 | 0        | 0         | 15         | 0         | 0                   | 1          | 0        | 1         | 0          | 0                 | 0        | 7        | 0          | 11        | 23         |            |
| 7:45               | 4                   | 10         | 0        | 0        | 14         | 0                 | 0        | 0         | 21         | 0         | 0                   | 6          | 0        | 4         | 6          | 0                 | 1        | 0        | 17         | 1         | 21         | 42         |
| <b>Total</b>       | <b>15</b>           | <b>31</b>  | <b>0</b> | <b>1</b> | <b>46</b>  | <b>0</b>          | <b>0</b> | <b>1</b>  | <b>56</b>  | <b>1</b>  | <b>0</b>            | <b>9</b>   | <b>0</b> | <b>10</b> | <b>9</b>   | <b>0</b>          | <b>1</b> | <b>2</b> | <b>51</b>  | <b>3</b>  | <b>59</b>  | <b>118</b> |
| 8:00               | 5                   | 11         | 0        | 0        | 16         | 0                 | 0        | 1         | 21         | 1         | 0                   | 2          | 0        | 3         | 2          | 0                 | 0        | 0        | 24         | 0         | 19         | 48         |
| 8:15               | 13                  | 16         | 0        | 0        | 29         | 0                 | 0        | 0         | 18         | 0         | 0                   | 1          | 0        | 7         | 1          | 1                 | 0        | 0        | 36         | 1         | 31         | 61         |
| 8:30               | 10                  | 18         | 0        | 0        | 28         | 0                 | 0        | 1         | 18         | 1         | 1                   | 1          | 0        | 3         | 2          | 0                 | 0        | 0        | 29         | 0         | 31         | 50         |
| 8:45               | 10                  | 16         | 0        | 0        | 26         | 0                 | 0        | 0         | 25         | 0         | 0                   | 4          | 0        | 3         | 4          | 0                 | 0        | 0        | 32         | 0         | 30         | 60         |
| <b>Total</b>       | <b>38</b>           | <b>61</b>  | <b>0</b> | <b>0</b> | <b>99</b>  | <b>0</b>          | <b>0</b> | <b>2</b>  | <b>82</b>  | <b>2</b>  | <b>1</b>            | <b>8</b>   | <b>0</b> | <b>16</b> | <b>9</b>   | <b>1</b>          | <b>0</b> | <b>0</b> | <b>121</b> | <b>1</b>  | <b>111</b> | <b>219</b> |
| 16:00              | 1                   | 8          | 1        | 0        | 10         | 0                 | 0        | 3         | 14         | 3         | 0                   | 9          | 0        | 1         | 9          | 0                 | 0        | 0        | 18         | 0         | 22         | 33         |
| 16:15              | 1                   | 5          | 0        | 0        | 6          | 0                 | 0        | 4         | 12         | 4         | 0                   | 10         | 0        | 5         | 10         | 0                 | 0        | 0        | 26         | 0         | 20         | 43         |
| 16:30              | 2                   | 5          | 0        | 1        | 7          | 0                 | 0        | 4         | 12         | 4         | 0                   | 16         | 0        | 8         | 16         | 0                 | 0        | 0        | 19         | 0         | 27         | 40         |
| 16:45              | 0                   | 1          | 0        | 0        | 1          | 0                 | 0        | 2         | 21         | 2         | 0                   | 16         | 0        | 7         | 16         | 0                 | 1        | 0        | 27         | 1         | 20         | 55         |
| <b>Total</b>       | <b>4</b>            | <b>19</b>  | <b>1</b> | <b>1</b> | <b>24</b>  | <b>0</b>          | <b>0</b> | <b>13</b> | <b>59</b>  | <b>13</b> | <b>0</b>            | <b>51</b>  | <b>0</b> | <b>21</b> | <b>51</b>  | <b>0</b>          | <b>1</b> | <b>0</b> | <b>90</b>  | <b>1</b>  | <b>89</b>  | <b>171</b> |
| 17:00              | 1                   | 0          | 0        | 0        | 1          | 0                 | 0        | 3         | 18         | 3         | 0                   | 17         | 1        | 6         | 18         | 0                 | 2        | 1        | 35         | 3         | 25         | 59         |
| 17:15              | 0                   | 7          | 0        | 0        | 7          | 0                 | 0        | 4         | 24         | 4         | 0                   | 24         | 0        | 4         | 24         | 0                 | 0        | 0        | 27         | 0         | 35         | 55         |
| 17:30              | 2                   | 6          | 0        | 0        | 8          | 0                 | 0        | 2         | 23         | 2         | 1                   | 19         | 0        | 21        | 20         | 0                 | 0        | 1        | 21         | 1         | 31         | 65         |
| 17:45              | 0                   | 7          | 1        | 1        | 8          | 0                 | 0        | 6         | 27         | 6         | 0                   | 21         | 0        | 3         | 21         | 0                 | 0        | 0        | 19         | 0         | 35         | 50         |
| <b>Total</b>       | <b>3</b>            | <b>20</b>  | <b>1</b> | <b>1</b> | <b>24</b>  | <b>0</b>          | <b>0</b> | <b>15</b> | <b>92</b>  | <b>15</b> | <b>1</b>            | <b>81</b>  | <b>1</b> | <b>34</b> | <b>83</b>  | <b>0</b>          | <b>2</b> | <b>2</b> | <b>102</b> | <b>4</b>  | <b>126</b> | <b>229</b> |
| <b>Grand Total</b> | <b>60</b>           | <b>131</b> | <b>2</b> | <b>3</b> | <b>193</b> | <b>0</b>          | <b>0</b> | <b>31</b> | <b>289</b> | <b>31</b> | <b>2</b>            | <b>149</b> | <b>1</b> | <b>81</b> | <b>152</b> | <b>1</b>          | <b>4</b> | <b>4</b> | <b>364</b> | <b>9</b>  | <b>385</b> | <b>737</b> |
| Apprch %           | 31.1%               | 67.9%      | 1.0%     |          |            | 0.0%              | 0.0%     | 100.0%    |            |           | 1.3%                | 98.0%      | 0.7%     |           |            | 11.1%             | 44.4%    | 44.4%    |            |           |            |            |
| Total %            | 15.6%               | 34.0%      | 0.5%     |          | 50.1%      | 0.0%              | 0.0%     | 8.1%      |            | 8.1%      | 0.5%                | 38.7%      | 0.3%     |           | 39.5%      | 0.3%              | 1.0%     | 1.0%     |            | 2.3%      | 100.0%     |            |

| AM PEAK HOUR                                      | Broadway Southbound |           |          |          |           | 25th St Westbound |          |          |           |           | Broadway Northbound |          |          |           |           | 25th St Eastbound |          |          |            |           | Total      |
|---|---------------------|-----------|----------|----------|-----------|-------------------|----------|----------|-----------|-----------|---------------------|----------|----------|-----------|-----------|-------------------|----------|----------|------------|-----------|------------|
|   | LEFT                | THRU      | RIGHT    | PEDS     | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT                | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |
| Peak Hour Analysis From 08:00 to 09:00            |                     |           |          |          |           |                   |          |          |           |           |                     |          |          |           |           |                   |          |          |            |           |            |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |           |          |          |           |                   |          |          |           |           |                     |          |          |           |           |                   |          |          |            |           |            |
| 8:00  | 5                   | 11        | 0        | 0        | 16        | 0                 | 0        | 1        | 21        | 1         | 0                   | 2        | 0        | 3         | 2         | 0                 | 0        | 0        | 24         | 0         | 19         |
| 8:15  | 13                  | 16        | 0        | 0        | 29        | 0                 | 0        | 0        | 18        | 0         | 0                   | 1        | 0        | 7         | 1         | 1                 | 0        | 0        | 36         | 1         | 31         |
| 8:30  | 10                  | 18        | 0        | 0        | 28        | 0                 | 0        | 1        | 18        | 1         | 1                   | 1        | 0        | 3         | 2         | 0                 | 0        | 0        | 29         | 0         | 31         |
| 8:45  | 10                  | 16        | 0        | 0        | 26        | 0                 | 0        | 0        | 25        | 0         | 0                   | 4        | 0        | 3         | 4         | 0                 | 0        | 0        | 32         | 0         | 30         |
| <b>Total Volume</b>                               | <b>38</b>           | <b>61</b> | <b>0</b> | <b>0</b> | <b>99</b> | <b>0</b>          | <b>0</b> | <b>2</b> | <b>82</b> | <b>2</b>  | <b>1</b>            | <b>8</b> | <b>0</b> | <b>16</b> | <b>9</b>  | <b>1</b>          | <b>0</b> | <b>0</b> | <b>121</b> | <b>1</b>  | <b>111</b> |
| % App Total                                       | 38.4%               | 61.6%     | 0.0%     |          |           | 0.0%              | 0.0%     | 100.0%   |           |           | 11.1%               | 88.9%    | 0.0%     |           |           | 100.0%            | 0.0%     | 0.0%     |            |           |            |
| PHF   | .731                | .847      | .000     |          | .853      | .000              | .000     | .500     |           | .500      | .250                | .500     | .000     |           | .563      | .250              | .000     | .000     |            | .250      | .895       |

| PM PEAK HOUR                                      | Broadway Southbound |           |          |          |           | 25th St Westbound |          |           |           |           | Broadway Northbound |           |          |           |           | 25th St Eastbound |          |          |            |           | Total      |
|---|---------------------|-----------|----------|----------|-----------|-------------------|----------|-----------|-----------|-----------|---------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|------------|-----------|------------|
|   | LEFT                | THRU      | RIGHT    | PEDS     | APP.TOTAL | LEFT              | THRU     | RIGHT     | PEDS      | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |
| Peak Hour Analysis From 17:00 to 18:00            |                     |           |          |          |           |                   |          |           |           |           |                     |           |          |           |           |                   |          |          |            |           |            |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |           |          |          |           |                   |          |           |           |           |                     |           |          |           |           |                   |          |          |            |           |            |
| 17:00   | 1                   | 0         | 0        | 0        | 1         | 0                 | 0        | 3         | 18        | 3         | 0                   | 17        | 1        | 6         | 18        | 0                 | 2        | 1        | 35         | 3         | 25         |
| 17:15   | 0                   | 7         | 0        | 0        | 7         | 0                 | 0        | 4         | 24        | 4         | 0                   | 24        | 0        | 4         | 24        | 0                 | 0        | 0        | 27         | 0         | 35         |
| 17:30   | 2                   | 6         | 0        | 0        | 8         | 0                 | 0        | 2         | 23        | 2         | 1                   | 19        | 0        | 21        | 20        | 0                 | 0        | 1        | 21         | 1         | 31         |
| 17:45   | 0                   | 7         | 1        | 1        | 8         | 0                 | 0        | 6         | 27        | 6         | 0                   | 21        | 0        | 3         | 21        | 0                 | 0        | 0        | 19         | 0         | 35         |
| <b>Total Volume</b>                               | <b>3</b>            | <b>20</b> | <b>1</b> | <b>1</b> | <b>24</b> | <b>0</b>          | <b>0</b> | <b>15</b> | <b>92</b> | <b>15</b> | <b>1</b>            | <b>81</b> | <b>1</b> | <b>34</b> | <b>83</b> | <b>0</b>          | <b>2</b> | <b>2</b> | <b>102</b> | <b>4</b>  | <b>126</b> |
| % App Total                                       | 12.5%               | 83.3%     | 4.2%     |          |           | 0.0%              | 0.0%     | 100.0%    |           |           | 1.2%                | 97.6%     | 1.2%     |           |           | 0.0%              | 50.0%    | 50.0%    |            |           |            |
| PHF   | .375                | .714      | .250     |          | .750      | .000              | .000     | .625      |           | .625      | .250                | .844      | .250     |           | .865      | .000              | .250     | .500     |            | .333      | .900       |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-003 Telegraph Ave & 24th St

Date : 9/29/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | Telegraph Ave Southbound |             |           |          |             | 24th St Westbound |          |          |          |           | Telegraph Ave Northbound |             |          |          |             | 24th St Eastbound |          |            |          |            | Total       | Uturns Total |
|--------------------|--------------------------|-------------|-----------|----------|-------------|-------------------|----------|----------|----------|-----------|--------------------------|-------------|----------|----------|-------------|-------------------|----------|------------|----------|------------|-------------|--------------|
|                    | LEFT                     | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                     | THRU        | RIGHT    | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT      | UTURNS   | APP.TOTAL  |             |              |
| 7:30               | 0                        | 55          | 0         | 0        | 55          | 0                 | 0        | 0        | 0        | 0         | 1                        | 62          | 0        | 0        | 63          | 1                 | 0        | 7          | 0        | 8          | 126         | 0            |
| 7:45               | 0                        | 65          | 5         | 0        | 70          | 0                 | 0        | 0        | 0        | 0         | 1                        | 78          | 0        | 0        | 79          | 4                 | 0        | 6          | 0        | 10         | 159         | 0            |
| 8:00               | 0                        | 78          | 6         | 0        | 84          | 0                 | 0        | 0        | 0        | 0         | 5                        | 81          | 0        | 0        | 86          | 8                 | 0        | 19         | 0        | 27         | 197         | 0            |
| 8:15               | 0                        | 66          | 3         | 0        | 69          | 0                 | 0        | 0        | 0        | 0         | 1                        | 91          | 0        | 0        | 92          | 6                 | 0        | 7          | 0        | 13         | 174         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>264</b>  | <b>14</b> | <b>0</b> | <b>278</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>8</b>                 | <b>312</b>  | <b>0</b> | <b>0</b> | <b>320</b>  | <b>19</b>         | <b>0</b> | <b>39</b>  | <b>0</b> | <b>58</b>  | <b>656</b>  | <b>0</b>     |
| 8:30               | 0                        | 78          | 5         | 0        | 83          | 0                 | 0        | 0        | 0        | 0         | 4                        | 90          | 0        | 0        | 94          | 5                 | 0        | 18         | 0        | 23         | 200         | 0            |
| 8:45               | 0                        | 88          | 10        | 0        | 98          | 0                 | 0        | 0        | 0        | 0         | 8                        | 86          | 0        | 0        | 94          | 3                 | 0        | 18         | 0        | 21         | 213         | 0            |
| 9:00               | 0                        | 75          | 5         | 0        | 80          | 0                 | 0        | 0        | 0        | 0         | 2                        | 83          | 0        | 0        | 85          | 6                 | 0        | 8          | 0        | 14         | 179         | 0            |
| 9:15               | 0                        | 86          | 10        | 0        | 96          | 0                 | 0        | 0        | 0        | 0         | 6                        | 78          | 0        | 0        | 84          | 2                 | 0        | 9          | 0        | 11         | 191         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>327</b>  | <b>30</b> | <b>0</b> | <b>357</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>20</b>                | <b>337</b>  | <b>0</b> | <b>0</b> | <b>357</b>  | <b>16</b>         | <b>0</b> | <b>53</b>  | <b>0</b> | <b>69</b>  | <b>783</b>  | <b>0</b>     |
| 16:00              | 0                        | 96          | 5         | 0        | 101         | 0                 | 0        | 0        | 0        | 0         | 3                        | 113         | 0        | 1        | 117         | 7                 | 0        | 2          | 0        | 9          | 227         | 1            |
| 16:15              | 0                        | 106         | 8         | 0        | 114         | 0                 | 0        | 0        | 0        | 0         | 4                        | 112         | 0        | 0        | 116         | 7                 | 0        | 7          | 0        | 14         | 244         | 0            |
| 16:30              | 0                        | 110         | 5         | 0        | 115         | 0                 | 0        | 0        | 0        | 0         | 6                        | 110         | 0        | 0        | 116         | 2                 | 0        | 3          | 0        | 5          | 236         | 0            |
| 16:45              | 0                        | 110         | 1         | 0        | 111         | 0                 | 0        | 0        | 0        | 0         | 5                        | 116         | 0        | 0        | 121         | 6                 | 0        | 5          | 1        | 12         | 244         | 1            |
| <b>Total</b>       | <b>0</b>                 | <b>422</b>  | <b>19</b> | <b>0</b> | <b>441</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>18</b>                | <b>451</b>  | <b>0</b> | <b>1</b> | <b>470</b>  | <b>22</b>         | <b>0</b> | <b>17</b>  | <b>1</b> | <b>40</b>  | <b>951</b>  | <b>2</b>     |
| 17:00              | 0                        | 101         | 2         | 0        | 103         | 0                 | 0        | 0        | 0        | 0         | 9                        | 117         | 0        | 0        | 126         | 1                 | 0        | 6          | 0        | 7          | 236         | 0            |
| 17:15              | 0                        | 113         | 5         | 0        | 118         | 0                 | 0        | 0        | 0        | 0         | 5                        | 119         | 0        | 0        | 124         | 4                 | 0        | 3          | 0        | 7          | 249         | 0            |
| 17:30              | 0                        | 101         | 3         | 0        | 104         | 0                 | 0        | 0        | 0        | 0         | 3                        | 116         | 0        | 0        | 119         | 2                 | 0        | 6          | 0        | 8          | 231         | 0            |
| 17:45              | 0                        | 111         | 2         | 0        | 113         | 0                 | 0        | 0        | 0        | 0         | 5                        | 117         | 0        | 0        | 122         | 9                 | 0        | 7          | 0        | 16         | 251         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>426</b>  | <b>12</b> | <b>0</b> | <b>438</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>22</b>                | <b>469</b>  | <b>0</b> | <b>0</b> | <b>491</b>  | <b>16</b>         | <b>0</b> | <b>22</b>  | <b>0</b> | <b>38</b>  | <b>967</b>  | <b>0</b>     |
| <b>Grand Total</b> | <b>0</b>                 | <b>1439</b> | <b>75</b> | <b>0</b> | <b>1514</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>68</b>                | <b>1569</b> | <b>0</b> | <b>1</b> | <b>1638</b> | <b>73</b>         | <b>0</b> | <b>131</b> | <b>1</b> | <b>205</b> | <b>3357</b> | <b>2</b>     |
| Apprch %           | 0.0%                     | 95.0%       | 5.0%      | 0.0%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 4.2%                     | 95.8%       | 0.0%     | 0.1%     |             | 35.6%             | 0.0%     | 63.9%      | 0.5%     |            |             |              |
| Total %            | 0.0%                     | 42.9%       | 2.2%      | 0.0%     | 45.1%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 2.0%                     | 46.7%       | 0.0%     | 0.0%     | 48.8%       | 2.2%              | 0.0%     | 3.9%       | 0.0%     | 6.1%       | 100.0%      |              |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 24th St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 24th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:30 to 09:30            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 8:30  | 0                        | 78    | 5     | 0      | 83        | 0                 | 0    | 0     | 0      | 0         | 4                        | 90    | 0     | 0      | 94        | 5                 | 0    | 18    | 0      | 23        | 200   |
| 8:45  | 0                        | 88    | 10    | 0      | 98        | 0                 | 0    | 0     | 0      | 0         | 8                        | 86    | 0     | 0      | 94        | 3                 | 0    | 18    | 0      | 21        | 213   |
| 9:00  | 0                        | 75    | 5     | 0      | 80        | 0                 | 0    | 0     | 0      | 0         | 2                        | 83    | 0     | 0      | 85        | 6                 | 0    | 8     | 0      | 14        | 179   |
| 9:15  | 0                        | 86    | 10    | 0      | 96        | 0                 | 0    | 0     | 0      | 0         | 6                        | 78    | 0     | 0      | 84        | 2                 | 0    | 9     | 0      | 11        | 191   |
| Total Volume                                      | 0                        | 327   | 30    | 0      | 357       | 0                 | 0    | 0     | 0      | 0         | 20                       | 337   | 0     | 0      | 357       | 16                | 0    | 53    | 0      | 69        | 783   |
| % App Total                                       | 0.0%                     | 91.6% | 8.4%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      | 5.6%                     | 94.4% | 0.0%  | 0.0%   |           | 23.2%             | 0.0% | 76.8% | 0.0%   |           |       |
| PHF   | .000                     | .929  | .750  | .000   | .911      | .000              | .000 | .000  | .000   | .000      | .625                     | .936  | .000  | .000   | .949      | .667              | .000 | .736  | .000   | .750      | .919  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 24th St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 24th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 17:00   | 0                        | 101   | 2     | 0      | 103       | 0                 | 0    | 0     | 0      | 0         | 9                        | 117   | 0     | 0      | 126       | 1                 | 0    | 6     | 0      | 7         | 236   |
| 17:15   | 0                        | 113   | 5     | 0      | 118       | 0                 | 0    | 0     | 0      | 0         | 5                        | 119   | 0     | 0      | 124       | 4                 | 0    | 3     | 0      | 7         | 249   |
| 17:30   | 0                        | 101   | 3     | 0      | 104       | 0                 | 0    | 0     | 0      | 0         | 3                        | 116   | 0     | 0      | 119       | 2                 | 0    | 6     | 0      | 8         | 231   |
| 17:45   | 0                        | 111   | 2     | 0      | 113       | 0                 | 0    | 0     | 0      | 0         | 5                        | 117   | 0     | 0      | 122       | 9                 | 0    | 7     | 0      | 16        | 251   |
| Total Volume                                      | 0                        | 426   | 12    | 0      | 438       | 0                 | 0    | 0     | 0      | 0         | 22                       | 469   | 0     | 0      | 491       | 16                | 0    | 22    | 0      | 38        | 967   |
| % App Total                                       | 0.0%                     | 97.3% | 2.7%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      | 4.5%                     | 95.5% | 0.0%  | 0.0%   |           | 42.1%             | 0.0% | 57.9% | 0.0%   |           |       |
| PHF   | .000                     | .942  | .600  | .000   | .928      | .000              | .000 | .000  | .000   | .000      | .611                     | .985  | .000  | .000   | .974      | .444              | .000 | .786  | .000   | .594      | .963  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-003 Telegraph Ave & 24th St

Date : 9/29/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |            |            | 24th St Westbound |          |          |          |           | Telegraph Ave Northbound |            |          |           |            | 24th St Eastbound |          |          |            |           | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|------------|------------|-------------------|----------|----------|----------|-----------|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:30               | 0                        | 16         | 0        | 6          | 16         | 0                 | 0        | 0        | 0        | 0         | 0                        | 1          | 0        | 2         | 1          | 0                 | 0        | 0        | 17         | 0         | 17         | 25         |
| 7:45               | 0                        | 16         | 0        | 1          | 16         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4          | 0        | 4         | 4          | 0                 | 0        | 0        | 18         | 0         | 20         | 23         |
| 8:00               | 0                        | 11         | 0        | 8          | 11         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4          | 0        | 6         | 4          | 1                 | 0        | 0        | 24         | 1         | 16         | 38         |
| 8:15               | 0                        | 22         | 0        | 6          | 22         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4          | 0        | 5         | 4          | 1                 | 0        | 2        | 22         | 3         | 29         | 33         |
| <b>Total</b>       | <b>0</b>                 | <b>65</b>  | <b>0</b> | <b>21</b>  | <b>65</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>13</b>  | <b>0</b> | <b>17</b> | <b>13</b>  | <b>2</b>          | <b>0</b> | <b>2</b> | <b>81</b>  | <b>4</b>  | <b>82</b>  | <b>119</b> |
| 8:30               | 0                        | 25         | 0        | 0          | 25         | 0                 | 0        | 0        | 0        | 0         | 0                        | 3          | 0        | 4         | 3          | 0                 | 0        | 1        | 13         | 1         | 29         | 17         |
| 8:45               | 0                        | 32         | 0        | 14         | 32         | 0                 | 0        | 0        | 0        | 0         | 0                        | 8          | 0        | 7         | 8          | 0                 | 0        | 0        | 22         | 0         | 40         | 43         |
| 9:00               | 0                        | 26         | 0        | 6          | 26         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4          | 0        | 5         | 4          | 0                 | 0        | 1        | 27         | 1         | 31         | 38         |
| 9:15               | 0                        | 21         | 0        | 9          | 21         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4          | 0        | 2         | 4          | 0                 | 0        | 0        | 25         | 0         | 25         | 36         |
| <b>Total</b>       | <b>0</b>                 | <b>104</b> | <b>0</b> | <b>29</b>  | <b>104</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>19</b>  | <b>0</b> | <b>18</b> | <b>19</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>87</b>  | <b>2</b>  | <b>125</b> | <b>134</b> |
| 16:00              | 0                        | 11         | 0        | 6          | 11         | 0                 | 0        | 0        | 0        | 0         | 1                        | 12         | 0        | 10        | 13         | 0                 | 0        | 0        | 31         | 0         | 24         | 47         |
| 16:15              | 0                        | 7          | 0        | 11         | 7          | 0                 | 0        | 0        | 0        | 0         | 0                        | 13         | 0        | 6         | 13         | 0                 | 0        | 0        | 30         | 0         | 20         | 47         |
| 16:30              | 0                        | 12         | 0        | 13         | 12         | 0                 | 0        | 0        | 12       | 0         | 0                        | 15         | 0        | 1         | 15         | 0                 | 0        | 1        | 22         | 1         | 28         | 36         |
| 16:45              | 0                        | 5          | 0        | 11         | 5          | 0                 | 0        | 0        | 0        | 0         | 2                        | 16         | 0        | 6         | 18         | 0                 | 0        | 1        | 22         | 1         | 24         | 39         |
| <b>Total</b>       | <b>0</b>                 | <b>35</b>  | <b>0</b> | <b>41</b>  | <b>35</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>3</b>                 | <b>56</b>  | <b>0</b> | <b>23</b> | <b>59</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>105</b> | <b>2</b>  | <b>96</b>  | <b>169</b> |
| 17:00              | 0                        | 13         | 1        | 26         | 14         | 0                 | 0        | 0        | 0        | 0         | 0                        | 22         | 0        | 8         | 22         | 0                 | 0        | 0        | 30         | 0         | 36         | 64         |
| 17:15              | 0                        | 8          | 0        | 6          | 8          | 0                 | 0        | 0        | 0        | 0         | 1                        | 24         | 0        | 9         | 25         | 1                 | 0        | 2        | 28         | 3         | 36         | 43         |
| 17:30              | 0                        | 11         | 0        | 11         | 11         | 0                 | 0        | 0        | 0        | 0         | 0                        | 33         | 0        | 11        | 33         | 0                 | 0        | 0        | 29         | 0         | 44         | 51         |
| 17:45              | 0                        | 7          | 1        | 18         | 8          | 0                 | 0        | 0        | 0        | 0         | 0                        | 25         | 0        | 11        | 25         | 0                 | 0        | 0        | 37         | 0         | 33         | 66         |
| <b>Total</b>       | <b>0</b>                 | <b>39</b>  | <b>2</b> | <b>61</b>  | <b>41</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>                 | <b>104</b> | <b>0</b> | <b>39</b> | <b>105</b> | <b>1</b>          | <b>0</b> | <b>2</b> | <b>124</b> | <b>3</b>  | <b>149</b> | <b>224</b> |
| <b>Grand Total</b> | <b>0</b>                 | <b>243</b> | <b>2</b> | <b>152</b> | <b>245</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>4</b>                 | <b>192</b> | <b>0</b> | <b>97</b> | <b>196</b> | <b>3</b>          | <b>0</b> | <b>8</b> | <b>397</b> | <b>11</b> | <b>452</b> | <b>646</b> |
| Apprch %           | 0.0%                     | 99.2%      | 0.8%     |            |            | 0.0%              | 0.0%     | 0.0%     |          |           | 2.0%                     | 98.0%      | 0.0%     |           |            | 27.3%             | 0.0%     | 72.7%    |            |           |            |            |
| Total %            | 0.0%                     | 53.8%      | 0.4%     |            | 54.2%      | 0.0%              | 0.0%     | 0.0%     |          | 0.0%      | 0.9%                     | 42.5%      | 0.0%     |           | 43.4%      | 0.7%              | 0.0%     | 1.8%     |            | 2.4%      |            | 100.0%     |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |            |          |           |            | 24th St Westbound |          |          |          |           | Telegraph Ave Northbound |           |          |           |           | 24th St Eastbound |          |          |           |           | Total      |
|---|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|----------|-----------|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|-----------|-----------|------------|
|   | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL |            |
| Peak Hour Analysis From 08:30 to 09:30            |                          |            |          |           |            |                   |          |          |          |           |                          |           |          |           |           |                   |          |          |           |           |            |
| Peak Hour For Entire Intersection Begins at 08:30 |                          |            |          |           |            |                   |          |          |          |           |                          |           |          |           |           |                   |          |          |           |           |            |
| 8:30  | 0                        | 25         | 0        | 0         | 25         | 0                 | 0        | 0        | 0        | 0         | 0                        | 3         | 0        | 4         | 3         | 0                 | 0        | 1        | 13        | 1         | 29         |
| 8:45  | 0                        | 32         | 0        | 14        | 32         | 0                 | 0        | 0        | 0        | 0         | 0                        | 8         | 0        | 7         | 8         | 0                 | 0        | 0        | 22        | 0         | 40         |
| 9:00  | 0                        | 26         | 0        | 6         | 26         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4         | 0        | 5         | 4         | 0                 | 0        | 1        | 27        | 1         | 31         |
| 9:15  | 0                        | 21         | 0        | 9         | 21         | 0                 | 0        | 0        | 0        | 0         | 0                        | 4         | 0        | 2         | 4         | 0                 | 0        | 0        | 25        | 0         | 25         |
| <b>Total Volume</b>                               | <b>0</b>                 | <b>104</b> | <b>0</b> | <b>29</b> | <b>104</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>19</b> | <b>0</b> | <b>18</b> | <b>19</b> | <b>0</b>          | <b>0</b> | <b>2</b> | <b>87</b> | <b>2</b>  | <b>125</b> |
| % App Total                                       | 0.0%                     | 100.0%     | 0.0%     |           |            | 0.0%              | 0.0%     | 0.0%     |          |           | 0.0%                     | 100.0%    | 0.0%     |           |           | 0.0%              | 0.0%     | 100.0%   |           |           |            |
| PHF   | .000                     | .813       | .000     |           | .813       | .000              | .000     | .000     |          | .000      | .000                     | .594      | .000     |           | .594      | .000              | .000     | .500     |           | .500      | .781       |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |           |          |           |           | 24th St Westbound |          |          |          |           | Telegraph Ave Northbound |            |          |           |            | 24th St Eastbound |          |          |            |           | Total      |
|---|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|----------|-----------|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|------------|
|   | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |
| Peak Hour Analysis From 17:00 to 18:00            |                          |           |          |           |           |                   |          |          |          |           |                          |            |          |           |            |                   |          |          |            |           |            |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |           |          |           |           |                   |          |          |          |           |                          |            |          |           |            |                   |          |          |            |           |            |
| 17:00   | 0                        | 13        | 1        | 26        | 14        | 0                 | 0        | 0        | 0        | 0         | 0                        | 22         | 0        | 8         | 22         | 0                 | 0        | 0        | 30         | 0         | 36         |
| 17:15   | 0                        | 8         | 0        | 6         | 8         | 0                 | 0        | 0        | 0        | 0         | 1                        | 24         | 0        | 9         | 25         | 1                 | 0        | 2        | 28         | 3         | 36         |
| 17:30   | 0                        | 11        | 0        | 11        | 11        | 0                 | 0        | 0        | 0        | 0         | 0                        | 33         | 0        | 11        | 33         | 0                 | 0        | 0        | 29         | 0         | 44         |
| 17:45   | 0                        | 7         | 1        | 18        | 8         | 0                 | 0        | 0        | 0        | 0         | 0                        | 25         | 0        | 11        | 25         | 0                 | 0        | 0        | 37         | 0         | 33         |
| <b>Total Volume</b>                               | <b>0</b>                 | <b>39</b> | <b>2</b> | <b>61</b> | <b>41</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>                 | <b>104</b> | <b>0</b> | <b>39</b> | <b>105</b> | <b>1</b>          | <b>0</b> | <b>2</b> | <b>124</b> | <b>3</b>  | <b>149</b> |
| % App Total                                       | 0.0%                     | 95.1%     | 4.9%     |           |           | 0.0%              | 0.0%     | 0.0%     |          |           | 1.0%                     | 99.0%      | 0.0%     |           |            | 33.3%             | 0.0%     | 66.7%    |            |           |            |
| PHF   | .000                     | .750      | .500     |           | .732      | .000              | .000     | .000     |          | .000      | .250                     | .788       | .000     |           | .795       | .250              | .000     | .250     |            | .250      | .847       |

# All Traffic Data

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City of Oakland  
All Vehicles on Unshifted Tab  
Peds & Bikes on Bank 1 Tab

File Name : 16-7038-004  
Site Code : 00000000  
Start Date : 1/21/2016  
Page No : 1

## Groups Printed- Unshifted

| Start Time  | Harrison Street Southbound |      |            |       |            | Bay Place Westbound |           |      |       |        | Harrison Street Northbound |           |      |      |       | 24th Street Northeastbound |            |           |           |            | 27th Street Eastbound |            |      |      |       | Exclu. Total | Inclu. Total | Int. Total |            |        |            |
|-------------|----------------------------|------|------------|-------|------------|---------------------|-----------|------|-------|--------|----------------------------|-----------|------|------|-------|----------------------------|------------|-----------|-----------|------------|-----------------------|------------|------|------|-------|--------------|--------------|------------|------------|--------|------------|
|             | Left                       | Thru | Bear Right | Right | App. Total | Left                | Bear Left | Thru | Right | Utturn | App. Total                 | Hard Left | Left | Thru | Right | Utturn                     | App. Total | Hard Left | Bear Left | Bear Right | Hard Right            | App. Total | Left | Thru | Right |              |              |            | Hard Right | Utturn | App. Total |
| 07:00       | 13                         | 123  | 19         | 13    | 168        | 8                   | 6         | 9    | 11    | 0      | 34                         | 0         | 19   | 29   | 3     | 0                          | 51         | 0         | 0         | 0          | 0                     | 0          | 6    | 9    | 5     | 4            | 2            | 24         | 2          | 277    | 279        |
| 07:15       | 9                          | 129  | 26         | 13    | 177        | 9                   | 6         | 20   | 21    | 0      | 56                         | 0         | 27   | 42   | 9     | 0                          | 78         | 0         | 0         | 0          | 0                     | 0          | 4    | 10   | 13    | 3            | 1            | 30         | 1          | 341    | 342        |
| 07:30       | 22                         | 141  | 30         | 20    | 213        | 8                   | 6         | 23   | 22    | 0      | 59                         | 0         | 37   | 54   | 10    | 1                          | 101        | 0         | 0         | 0          | 0                     | 0          | 15   | 15   | 5     | 16           | 5            | 51         | 6          | 424    | 430        |
| 07:45       | 22                         | 166  | 24         | 29    | 241        | 9                   | 5         | 32   | 24    | 0      | 70                         | 0         | 49   | 65   | 11    | 0                          | 125        | 0         | 0         | 0          | 0                     | 0          | 12   | 17   | 20    | 4            | 8            | 53         | 8          | 489    | 497        |
| Total       | 66                         | 559  | 99         | 75    | 799        | 34                  | 23        | 84   | 78    | 0      | 219                        | 0         | 132  | 190  | 33    | 1                          | 355        | 0         | 0         | 0          | 0                     | 0          | 37   | 51   | 43    | 27           | 16           | 158        | 17         | 1531   | 1548       |
| 08:00       | 22                         | 187  | 17         | 38    | 264        | 11                  | 3         | 45   | 34    | 0      | 93                         | 0         | 64   | 75   | 15    | 0                          | 154        | 0         | 0         | 0          | 0                     | 0          | 17   | 38   | 21    | 4            | 12           | 80         | 12         | 591    | 603        |
| 08:15       | 25                         | 206  | 26         | 36    | 293        | 14                  | 2         | 51   | 54    | 0      | 121                        | 0         | 71   | 105  | 16    | 0                          | 192        | 0         | 0         | 0          | 0                     | 0          | 6    | 24   | 31    | 8            | 15           | 69         | 15         | 675    | 690        |
| 08:30       | 27                         | 225  | 20         | 27    | 299        | 14                  | 7         | 42   | 43    | 0      | 106                        | 0         | 61   | 65   | 18    | 0                          | 144        | 0         | 0         | 0          | 0                     | 0          | 5    | 26   | 24    | 7            | 6            | 62         | 6          | 611    | 617        |
| 08:45       | 17                         | 233  | 29         | 24    | 303        | 14                  | 8         | 51   | 32    | 0      | 105                        | 0         | 66   | 62   | 11    | 1                          | 139        | 0         | 0         | 0          | 0                     | 0          | 9    | 24   | 10    | 5            | 2            | 48         | 3          | 595    | 598        |
| Total       | 91                         | 851  | 92         | 125   | 1159       | 53                  | 20        | 189  | 163   | 0      | 425                        | 0         | 262  | 307  | 60    | 1                          | 629        | 0         | 0         | 0          | 0                     | 0          | 37   | 112  | 86    | 24           | 35           | 259        | 36         | 2472   | 2508       |
| 16:00       | 38                         | 71   | 9          | 20    | 138        | 18                  | 0         | 35   | 49    | 1      | 102                        | 0         | 68   | 132  | 18    | 0                          | 218        | 0         | 0         | 0          | 0                     | 0          | 41   | 70   | 23    | 8            | 2            | 142        | 3          | 600    | 603        |
| 16:15       | 38                         | 92   | 13         | 16    | 159        | 9                   | 3         | 33   | 53    | 0      | 98                         | 0         | 52   | 130  | 17    | 0                          | 199        | 0         | 0         | 0          | 0                     | 0          | 29   | 58   | 15    | 5            | 1            | 107        | 1          | 563    | 564        |
| 16:30       | 30                         | 69   | 7          | 21    | 127        | 11                  | 3         | 41   | 55    | 0      | 110                        | 0         | 63   | 174  | 26    | 0                          | 263        | 0         | 0         | 0          | 0                     | 0          | 41   | 78   | 23    | 4            | 2            | 146        | 2          | 646    | 648        |
| 16:45       | 44                         | 69   | 20         | 13    | 146        | 12                  | 4         | 41   | 52    | 0      | 109                        | 0         | 57   | 167  | 25    | 0                          | 249        | 0         | 0         | 0          | 0                     | 0          | 41   | 80   | 17    | 4            | 4            | 142        | 4          | 646    | 650        |
| Total       | 150                        | 301  | 49         | 70    | 570        | 50                  | 10        | 150  | 209   | 1      | 419                        | 0         | 240  | 603  | 86    | 0                          | 929        | 0         | 0         | 0          | 0                     | 0          | 152  | 286  | 78    | 21           | 9            | 537        | 10         | 2455   | 2465       |
| 17:00       | 18                         | 78   | 10         | 14    | 120        | 13                  | 4         | 35   | 47    | 0      | 99                         | 0         | 60   | 190  | 25    | 0                          | 275        | 0         | 0         | 0          | 0                     | 0          | 62   | 85   | 26    | 5            | 3            | 178        | 3          | 672    | 675        |
| 17:15       | 40                         | 83   | 12         | 21    | 156        | 21                  | 2         | 40   | 59    | 0      | 122                        | 0         | 72   | 208  | 24    | 0                          | 304        | 0         | 0         | 0          | 0                     | 0          | 48   | 94   | 20    | 6            | 1            | 168        | 1          | 750    | 751        |
| 17:30       | 40                         | 83   | 11         | 16    | 150        | 7                   | 3         | 31   | 45    | 1      | 86                         | 0         | 63   | 199  | 24    | 0                          | 286        | 0         | 0         | 0          | 0                     | 0          | 57   | 103  | 24    | 4            | 2            | 188        | 3          | 710    | 713        |
| 17:45       | 33                         | 92   | 13         | 20    | 158        | 16                  | 10        | 50   | 32    | 0      | 108                        | 0         | 60   | 219  | 30    | 0                          | 309        | 0         | 0         | 0          | 0                     | 0          | 56   | 84   | 17    | 9            | 7            | 166        | 7          | 741    | 748        |
| Total       | 131                        | 336  | 46         | 71    | 584        | 57                  | 19        | 156  | 183   | 1      | 415                        | 0         | 255  | 816  | 103   | 0                          | 1174       | 0         | 0         | 0          | 0                     | 0          | 223  | 366  | 87    | 24           | 13           | 700        | 14         | 2873   | 2887       |
| Grand Total | 438                        | 2047 | 286        | 341   | 3112       | 194                 | 72        | 579  | 633   | 2      | 1478                       | 0         | 889  | 1916 | 282   | 2                          | 3087       | 0         | 0         | 0          | 0                     | 0          | 449  | 815  | 294   | 96           | 73           | 1654       | 77         | 9331   | 9408       |
| Apprch %    | 14.1                       | 65.8 | 9.2        | 11    |            | 13.1                | 4.9       | 39.2 | 42.8  |        |                            | 0         | 28.8 | 62.1 | 9.1   |                            |            | 0         | 0         | 0          | 0                     |            | 27.1 | 49.3 | 17.8  | 5.8          |              |            |            |        |            |
| Total %     | 4.7                        | 21.9 | 3.1        | 3.7   | 33.4       | 2.1                 | 0.8       | 6.2  | 6.8   |        | 15.8                       | 0         | 9.5  | 20.5 | 3     |                            | 33.1       | 0         | 0         | 0          | 0                     |            | 4.8  | 8.7  | 3.2   | 1            | 17.7         | 0.8        | 99.2       |        |            |



# All Traffic Data

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City of Oakland  
 All Vehicles on Unshifted Tab  
 Peds & Bikes on Bank 1 Tab

File Name : 16-7038-004  
 Site Code : 00000000  
 Start Date : 1/21/2016  
 Page No : 2

| Start Time   | Harrison Street Southbound |            |            |           |            | Bay Place Westbound |           |           |           |            | Harrison Street Northbound |           |            |           |            | 24th Street Northeastbound |           |            |            |            | 27th Street Eastbound |           |           |            |            | Int. Total |
|--|----------------------------|------------|------------|-----------|------------|---------------------|-----------|-----------|-----------|------------|----------------------------|-----------|------------|-----------|------------|----------------------------|-----------|------------|------------|------------|-----------------------|-----------|-----------|------------|------------|------------|
|  | Left                       | Thru       | Bear Right | Right     | App. Total | Left                | Bear Left | Thru      | Right     | App. Total | Hard Left                  | Left      | Thru       | Right     | App. Total | Hard Left                  | Bear Left | Bear Right | Hard Right | App. Total | Left                  | Thru      | Right     | Hard Right | App. Total |            |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                            |            |            |           |            |                     |           |           |           |            |                            |           |            |           |            |                            |           |            |            |            |                       |           |           |            |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                            |            |            |           |            |                     |           |           |           |            |                            |           |            |           |            |                            |           |            |            |            |                       |           |           |            |            |            |
| 08:00  | 22                         | 187        | 17         | <b>38</b> | 264        | 11                  | 3         | 45        | 34        | 93         | 0                          | 64        | 75         | 15        | 154        | 0                          | 0         | 0          | 0          | 0          | <b>17</b>             | <b>38</b> | 21        | 4          | <b>80</b>  | 591        |
| 08:15  | 25                         | 206        | 26         | 36        | 293        | <b>14</b>           | 2         | <b>51</b> | <b>54</b> | <b>121</b> | 0                          | <b>71</b> | <b>105</b> | 16        | <b>192</b> | 0                          | 0         | 0          | 0          | 0          | 6                     | 24        | <b>31</b> | <b>8</b>   | 69         | <b>675</b> |
| 08:30  | <b>27</b>                  | 225        | 20         | 27        | 299        | 14                  | 7         | 42        | 43        | 106        | 0                          | 61        | 65         | <b>18</b> | 144        | 0                          | 0         | 0          | 0          | 0          | 5                     | 26        | 24        | 7          | 62         | 611        |
| 08:45  | 17                         | <b>233</b> | <b>29</b>  | 24        | <b>303</b> | 14                  | <b>8</b>  | 51        | 32        | 105        | 0                          | 66        | 62         | 11        | 139        | 0                          | 0         | 0          | 0          | 0          | 9                     | 24        | 10        | 5          | 48         | 595        |
| Total Volume   | 91                         | 851        | 92         | 125       | 1159       | 53                  | 20        | 189       | 163       | 425        | 0                          | 262       | 307        | 60        | 629        | 0                          | 0         | 0          | 0          | 0          | 37                    | 112       | 86        | 24         | 259        | 2472       |
| % App. Total   | 7.9                        | 73.4       | 7.9        | 10.8      |            | 12.5                | 4.7       | 44.5      | 38.4      |            | 0                          | 41.7      | 48.8       | 9.5       |            | 0                          | 0         | 0          | 0          |            | 14.3                  | 43.2      | 33.2      | 9.3        |            |            |
| PHF  | .843                       | .913       | .793       | .822      | .956       | .946                | .625      | .926      | .755      | .878       | .000                       | .923      | .731       | .833      | .819       | .000                       | .000      | .000       | .000       | .000       | .544                  | .737      | .694      | .750       | .809       | .916       |

# All Traffic Data

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City of Oakland  
 All Vehicles on Unshifted Tab  
 Peds & Bikes on Bank 1 Tab

File Name : 16-7038-004  
 Site Code : 00000000  
 Start Date : 1/21/2016  
 Page No : 4

| Start Time   | Harrison Street Southbound |      |            |       |            | Bay Place Westbound |           |      |       |            | Harrison Street Northbound |      |      |       |            | 24th Street Northeastbound |           |            |            |            | 27th Street Eastbound |      |       |            |            | Int. Total |
|--|----------------------------|------|------------|-------|------------|---------------------|-----------|------|-------|------------|----------------------------|------|------|-------|------------|----------------------------|-----------|------------|------------|------------|-----------------------|------|-------|------------|------------|------------|
|  | Left                       | Thru | Bear Right | Right | App. Total | Left                | Bear Left | Thru | Right | App. Total | Hard Left                  | Left | Thru | Right | App. Total | Hard Left                  | Bear Left | Bear Right | Hard Right | App. Total | Left                  | Thru | Right | Hard Right | App. Total |            |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 |                            |      |            |       |            |                     |           |      |       |            |                            |      |      |       |            |                            |           |            |            |            |                       |      |       |            |            |            |
| Peak Hour for Entire Intersection Begins at 17:00    |                            |      |            |       |            |                     |           |      |       |            |                            |      |      |       |            |                            |           |            |            |            |                       |      |       |            |            |            |
| 17:00  | 18                         | 78   | 10         | 14    | 120        | 13                  | 4         | 35   | 47    | 99         | 0                          | 60   | 190  | 25    | 275        | 0                          | 0         | 0          | 0          | 0          | 62                    | 85   | 26    | 5          | 178        | 672        |
| 17:15  | 40                         | 83   | 12         | 21    | 156        | 21                  | 2         | 40   | 59    | 122        | 0                          | 72   | 208  | 24    | 304        | 0                          | 0         | 0          | 0          | 0          | 48                    | 94   | 20    | 6          | 168        | 750        |
| 17:30  | 40                         | 83   | 11         | 16    | 150        | 7                   | 3         | 31   | 45    | 86         | 0                          | 63   | 199  | 24    | 286        | 0                          | 0         | 0          | 0          | 0          | 57                    | 103  | 24    | 4          | 188        | 710        |
| 17:45  | 33                         | 92   | 13         | 20    | 158        | 16                  | 10        | 50   | 32    | 108        | 0                          | 60   | 219  | 30    | 309        | 0                          | 0         | 0          | 0          | 0          | 56                    | 84   | 17    | 9          | 166        | 741        |
| Total Volume   | 131                        | 336  | 46         | 71    | 584        | 57                  | 19        | 156  | 183   | 415        | 0                          | 255  | 816  | 103   | 1174       | 0                          | 0         | 0          | 0          | 0          | 223                   | 366  | 87    | 24         | 700        | 2873       |
| % App. Total   | 22.4                       | 57.5 | 7.9        | 12.2  |            | 13.7                | 4.6       | 37.6 | 44.1  |            | 0                          | 21.7 | 69.5 | 8.8   |            | 0                          | 0         | 0          | 0          |            | 31.9                  | 52.3 | 12.4  | 3.4        |            |            |
| PHF  | .819                       | .913 | .885       | .845  | .924       | .679                | .475      | .780 | .775  | .850       | .000                       | .885 | .932 | .858  | .950       | .000                       | .000      | .000       | .000       | .000       | .899                  | .888 | .837  | .667       | .931       | .958       |

# All Traffic Data

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

City of Oakland  
All Vehicles on Unshifted Tab  
Peds & Bikes on Bank 1 Tab

File Name : 16-7038-004  
Site Code : 00000000  
Start Date : 1/21/2016  
Page No : 1

## Groups Printed- Bank 1

| Start Time   | Harrison Street Southbound |           |            |          |           |            | Bay Place Westbound |           |           |          |            |            | Harrison Street Northbound |          |           |          |           |            | 24th Street Northeastbound |           |            |            |           |            | 27th Street Eastbound |           |           |            |            |            | Exclu. Total | Inclu. Total | Int. Total |            |  |  |  |  |  |
|--------------|----------------------------|-----------|------------|----------|-----------|------------|---------------------|-----------|-----------|----------|------------|------------|----------------------------|----------|-----------|----------|-----------|------------|----------------------------|-----------|------------|------------|-----------|------------|-----------------------|-----------|-----------|------------|------------|------------|--------------|--------------|------------|------------|--|--|--|--|--|
|              | Left                       | Thru      | Bear Right | Right    | Peds      | App. Total | Left                | Bear Left | Thru      | Right    | Peds       | App. Total | Hard Left                  | Left     | Thru      | Right    | Peds      | App. Total | Hard Left                  | Bear Left | Bear Right | Hard Right | Peds      | App. Total | Left                  | Thru      | Right     | Hard Right | Peds       | App. Total |              |              |            |            |  |  |  |  |  |
| 07:00        | 0                          | 9         | 1          | 0        | 14        | 10         | 0                   | 1         | 4         | 0        | 3          | 5          | 0                          | 0        | 0         | 0        | 2         | 0          | 0                          | 1         | 0          | 0          | 0         | 6          | 1                     | 0         | 2         | 0          | 0          | 16         | 2            | 41           | 18         | 59         |  |  |  |  |  |
| 07:15        | 0                          | 2         | 1          | 0        | 11        | 3          | 0                   | 0         | 4         | 0        | 7          | 4          | 0                          | 0        | 0         | 0        | 1         | 0          | 0                          | 0         | 0          | 0          | 0         | 7          | 0                     | 0         | 3         | 0          | 0          | 11         | 3            | 37           | 10         | 47         |  |  |  |  |  |
| 07:30        | 0                          | 8         | 0          | 1        | 11        | 9          | 0                   | 0         | 3         | 0        | 24         | 3          | 0                          | 0        | 0         | 0        | 4         | 0          | 0                          | 0         | 0          | 0          | 0         | 6          | 0                     | 0         | 2         | 0          | 0          | 17         | 2            | 62           | 14         | 76         |  |  |  |  |  |
| 07:45        | 1                          | 6         | 1          | 0        | 24        | 8          | 2                   | 0         | 5         | 1        | 35         | 8          | 0                          | 2        | 1         | 0        | 12        | 3          | 0                          | 1         | 0          | 0          | 0         | 16         | 1                     | 2         | 1         | 0          | 0          | 20         | 3            | 107          | 23         | 130        |  |  |  |  |  |
| <b>Total</b> | <b>1</b>                   | <b>25</b> | <b>3</b>   | <b>1</b> | <b>60</b> | <b>30</b>  | <b>2</b>            | <b>1</b>  | <b>16</b> | <b>1</b> | <b>69</b>  | <b>20</b>  | <b>0</b>                   | <b>2</b> | <b>1</b>  | <b>0</b> | <b>19</b> | <b>3</b>   | <b>0</b>                   | <b>2</b>  | <b>0</b>   | <b>0</b>   | <b>0</b>  | <b>35</b>  | <b>2</b>              | <b>2</b>  | <b>8</b>  | <b>0</b>   | <b>0</b>   | <b>64</b>  | <b>10</b>    | <b>247</b>   | <b>65</b>  | <b>312</b> |  |  |  |  |  |
| 08:00        | 0                          | 4         | 1          | 0        | 22        | 5          | 1                   | 0         | 14        | 0        | 48         | 15         | 0                          | 0        | 2         | 0        | 7         | 2          | 0                          | 0         | 0          | 0          | 0         | 15         | 0                     | 0         | 2         | 0          | 0          | 24         | 2            | 116          | 24         | 140        |  |  |  |  |  |
| 08:15        | 0                          | 12        | 0          | 0        | 20        | 12         | 2                   | 0         | 7         | 3        | 52         | 12         | 0                          | 2        | 1         | 0        | 13        | 3          | 0                          | 0         | 0          | 0          | 0         | 10         | 0                     | 0         | 3         | 1          | 0          | 24         | 4            | 119          | 31         | 150        |  |  |  |  |  |
| 08:30        | 1                          | 6         | 7          | 0        | 15        | 14         | 2                   | 1         | 9         | 1        | 23         | 13         | 1                          | 3        | 0         | 0        | 10        | 4          | 0                          | 0         | 0          | 0          | 0         | 12         | 0                     | 0         | 2         | 0          | 0          | 31         | 2            | 91           | 33         | 124        |  |  |  |  |  |
| 08:45        | 21                         | 11        | 0          | 1        | 13        | 33         | 5                   | 4         | 9         | 0        | 39         | 18         | 0                          | 1        | 0         | 0        | 6         | 1          | 0                          | 0         | 0          | 0          | 0         | 13         | 0                     | 0         | 3         | 0          | 0          | 33         | 3            | 104          | 55         | 159        |  |  |  |  |  |
| <b>Total</b> | <b>22</b>                  | <b>33</b> | <b>8</b>   | <b>1</b> | <b>70</b> | <b>64</b>  | <b>10</b>           | <b>5</b>  | <b>39</b> | <b>4</b> | <b>162</b> | <b>58</b>  | <b>1</b>                   | <b>6</b> | <b>3</b>  | <b>0</b> | <b>36</b> | <b>10</b>  | <b>0</b>                   | <b>0</b>  | <b>0</b>   | <b>0</b>   | <b>0</b>  | <b>50</b>  | <b>0</b>              | <b>0</b>  | <b>10</b> | <b>1</b>   | <b>0</b>   | <b>112</b> | <b>11</b>    | <b>430</b>   | <b>143</b> | <b>573</b> |  |  |  |  |  |
| 16:00        | 3                          | 2         | 0          | 0        | 20        | 5          | 0                   | 1         | 6         | 0        | 27         | 7          | 0                          | 0        | 4         | 1        | 11        | 5          | 0                          | 0         | 1          | 1          | 5         | 1          | 0                     | 2         | 1         | 0          | 9          | 3          | 72           | 21           | 93         |            |  |  |  |  |  |
| 16:15        | 0                          | 0         | 1          | 0        | 23        | 1          | 0                   | 0         | 4         | 2        | 23         | 6          | 0                          | 6        | 3         | 0        | 6         | 9          | 0                          | 1         | 1          | 0          | 7         | 2          | 1                     | 2         | 1         | 0          | 18         | 4          | 77           | 22           | 99         |            |  |  |  |  |  |
| 16:30        | 1                          | 3         | 0          | 0        | 28        | 4          | 0                   | 0         | 3         | 1        | 30         | 4          | 1                          | 1        | 2         | 0        | 14        | 4          | 0                          | 0         | 0          | 0          | 19        | 0          | 0                     | 3         | 0         | 0          | 25         | 3          | 116          | 15           | 131        |            |  |  |  |  |  |
| 16:45        | 1                          | 3         | 1          | 0        | 26        | 5          | 1                   | 1         | 5         | 0        | 43         | 7          | 1                          | 1        | 5         | 1        | 19        | 8          | 0                          | 0         | 0          | 0          | 3         | 0          | 1                     | 7         | 0         | 0          | 15         | 8          | 106          | 28           | 134        |            |  |  |  |  |  |
| <b>Total</b> | <b>5</b>                   | <b>8</b>  | <b>2</b>   | <b>0</b> | <b>97</b> | <b>15</b>  | <b>1</b>            | <b>2</b>  | <b>18</b> | <b>3</b> | <b>123</b> | <b>24</b>  | <b>2</b>                   | <b>8</b> | <b>14</b> | <b>2</b> | <b>50</b> | <b>26</b>  | <b>0</b>                   | <b>1</b>  | <b>1</b>   | <b>1</b>   | <b>34</b> | <b>3</b>   | <b>2</b>              | <b>14</b> | <b>2</b>  | <b>0</b>   | <b>67</b>  | <b>18</b>  | <b>371</b>   | <b>86</b>    | <b>457</b> |            |  |  |  |  |  |
| 17:00        | 0                          | 2         | 1          | 0        | 29        | 3          | 0                   | 0         | 3         | 1        | 49         | 4          | 0                          | 0        | 8         | 1        | 19        | 9          | 0                          | 0         | 0          | 0          | 13        | 0          | 1                     | 11        | 0         | 0          | 36         | 12         | 146          | 28           | 174        |            |  |  |  |  |  |
| 17:15        | 0                          | 0         | 0          | 0        | 14        | 0          | 1                   | 0         | 9         | 0        | 49         | 10         | 0                          | 3        | 3         | 0        | 14        | 6          | 0                          | 0         | 0          | 0          | 17        | 0          | 0                     | 6         | 0         | 0          | 26         | 6          | 120          | 22           | 142        |            |  |  |  |  |  |
| 17:30        | 0                          | 1         | 0          | 0        | 21        | 1          | 0                   | 1         | 4         | 0        | 31         | 5          | 0                          | 1        | 8         | 1        | 11        | 10         | 0                          | 0         | 0          | 0          | 13        | 0          | 0                     | 12        | 0         | 0          | 22         | 12         | 98           | 28           | 126        |            |  |  |  |  |  |
| 17:45        | 0                          | 2         | 0          | 0        | 11        | 2          | 1                   | 0         | 2         | 0        | 35         | 3          | 0                          | 1        | 6         | 1        | 12        | 8          | 0                          | 0         | 1          | 0          | 12        | 1          | 0                     | 15        | 0         | 0          | 20         | 15         | 90           | 29           | 119        |            |  |  |  |  |  |
| <b>Total</b> | <b>0</b>                   | <b>5</b>  | <b>1</b>   | <b>0</b> | <b>75</b> | <b>6</b>   | <b>2</b>            | <b>1</b>  | <b>18</b> | <b>1</b> | <b>164</b> | <b>22</b>  | <b>0</b>                   | <b>5</b> | <b>25</b> | <b>3</b> | <b>56</b> | <b>33</b>  | <b>0</b>                   | <b>0</b>  | <b>1</b>   | <b>0</b>   | <b>55</b> | <b>1</b>   | <b>1</b>              | <b>44</b> | <b>0</b>  | <b>0</b>   | <b>104</b> | <b>45</b>  | <b>454</b>   | <b>107</b>   | <b>561</b> |            |  |  |  |  |  |
| Grand Total  | 28                         | 71        | 14         | 2        | 302       | 115        | 15                  | 9         | 91        | 9        | 518        | 124        | 3                          | 21       | 43        | 5        | 161       | 72         | 0                          | 3         | 2          | 1          | 174       | 6          | 5                     | 76        | 3         | 0          | 347        | 84         | 1502         | 401          | 1903       |            |  |  |  |  |  |
| Apprch %     | 24.3                       | 61.7      | 12.2       | 1.7      |           |            | 12.1                | 7.3       | 73.4      | 7.3      |            |            | 4.2                        | 29.2     | 59.7      | 6.9      |           |            | 0                          | 50        | 33.3       | 16.7       |           |            | 6                     | 90.5      | 3.6       | 0          |            |            |              |              |            |            |  |  |  |  |  |
| Total %      | 7                          | 17.7      | 3.5        | 0.5      | 28.7      |            | 3.7                 | 2.2       | 22.7      | 2.2      | 30.9       |            | 0.7                        | 5.2      | 10.7      | 1.2      |           | 18         | 0                          | 0.7       | 0.5        | 0.2        |           | 1.5        | 1.2                   | 19        | 0.7       | 0          | 20.9       |            | 78.9         | 21.1         |            |            |  |  |  |  |  |

| Start Time   | Harrison Street Southbound |      |            |       |            |      | Bay Place Westbound |      |       |            |           |      | Harrison Street Northbound |       |            |           |           |            | 24th Street Northeastbound |            |      |      |       |            | 27th Street Eastbound |      |    |     |   |   | Int. Total |
|--------------|----------------------------|------|------------|-------|------------|------|---------------------|------|-------|------------|-----------|------|----------------------------|-------|------------|-----------|-----------|------------|----------------------------|------------|------|------|-------|------------|-----------------------|------|----|-----|---|---|------------|
|              | Left                       | Thru | Bear Right | Right | App. Total | Left | Bear Left           | Thru | Right | App. Total | Hard Left | Left | Thru                       | Right | App. Total | Hard Left | Bear Left | Bear Right | Hard Right                 | App. Total | Left | Thru | Right | Hard Right | App. Total            |      |    |     |   |   |            |
| 08:00        | 0                          | 4    | 1          | 0     | 5          | 1    | 0                   | 14   | 0     | 15         | 0         | 0    | 2                          | 0     | 2          | 0         | 0         | 0          | 0                          | 0          | 0    | 2    | 0     | 0          | 2                     | 0    | 2  | 0   | 0 | 2 | 24         |
| 08:15        | 0                          | 12   | 0          | 0     | 12         | 2    | 0                   | 7    | 3     | 12         | 0         | 2    | 1                          | 0     | 3          | 0         | 0         | 0          | 0                          | 0          | 0    | 0    | 3     | 1          | 0                     | 4    | 31 |     |   |   |            |
| 08:30        | 1                          | 6    | 7          | 0     | 14         | 2    | 1                   | 9    | 1     | 13         | 1         | 3    | 0                          | 0     | 4          | 0         | 0         | 0          | 0                          | 0          | 0    | 2    | 0     | 0          | 0                     | 2    | 33 |     |   |   |            |
| 08:45        | 21                         | 11   | 0          | 1     | 33         | 5    | 4                   | 9    | 0     | 18         | 0         | 1    | 0                          | 0     | 1          | 0         | 0         | 0          | 0                          | 0          | 0    | 3    | 0     | 0          | 0                     | 3    | 55 |     |   |   |            |
| Total Volume | 22                         | 33   | 8          | 1     | 64         | 10   | 5                   | 39   | 4     | 58         | 1         | 6    | 3                          | 0     | 10         | 0         | 0         | 0          | 0                          | 0          | 0    | 10   | 1     | 0          | 11                    | 0    | 11 | 143 |   |   |            |
| % App. Total | 34.4                       | 51.6 | 12.5       | 1.6   |            | 17.2 | 8.6                 | 67.2 | 6.9   |            | 10        | 60   | 30                         | 0     |            | 0         | 0         | 0          | 0                          |            | 0    | 90.9 | 9.1   | 0          |                       | 0    | 11 |     |   |   |            |
| PHF          | .262                       | .688 | .286       | .250  | .485       | .500 | .313                | .696 | .333  | .806       | .250      | .500 | .375                       | .000  | .625       | .000      | .000      | .000       | .000                       | .000       | .000 | .833 | .250  | .000       | .688                  | .650 |    |     |   |   |            |

Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00

# All Traffic Data

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

City of Oakland  
 All Vehicles on Unshifted Tab  
 Peds & Bikes on Bank 1 Tab

File Name : 16-7038-004  
 Site Code : 00000000  
 Start Date : 1/21/2016  
 Page No : 3

| Start Time   | Harrison Street Southbound |      |            |       |            | Bay Place Westbound |           |      |       |            | Harrison Street Northbound |      |      |       |            | 24th Street Northeastbound |           |            |            |            | 27th Street Eastbound |      |       |            |            | Int. Total |
|--|----------------------------|------|------------|-------|------------|---------------------|-----------|------|-------|------------|----------------------------|------|------|-------|------------|----------------------------|-----------|------------|------------|------------|-----------------------|------|-------|------------|------------|------------|
|  | Left                       | Thru | Bear Right | Right | App. Total | Left                | Bear Left | Thru | Right | App. Total | Hard Left                  | Left | Thru | Right | App. Total | Hard Left                  | Bear Left | Bear Right | Hard Right | App. Total | Left                  | Thru | Right | Hard Right | App. Total |            |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 |                            |      |            |       |            |                     |           |      |       |            |                            |      |      |       |            |                            |           |            |            |            |                       |      |       |            |            |            |
| Peak Hour for Entire Intersection Begins at 17:00    |                            |      |            |       |            |                     |           |      |       |            |                            |      |      |       |            |                            |           |            |            |            |                       |      |       |            |            |            |
| 17:00  | 0                          | 2    | 1          | 0     | 3          | 0                   | 0         | 3    | 1     | 4          | 0                          | 0    | 8    | 1     | 9          | 0                          | 0         | 0          | 0          | 0          | 1                     | 11   | 0     | 0          | 12         | 28         |
| 17:15  | 0                          | 0    | 0          | 0     | 0          | 1                   | 0         | 9    | 0     | 10         | 0                          | 3    | 3    | 0     | 6          | 0                          | 0         | 0          | 0          | 0          | 0                     | 6    | 0     | 0          | 6          | 22         |
| 17:30  | 0                          | 1    | 0          | 0     | 1          | 0                   | 1         | 4    | 0     | 5          | 0                          | 1    | 8    | 1     | 10         | 0                          | 0         | 0          | 0          | 0          | 0                     | 12   | 0     | 0          | 12         | 28         |
| 17:45  | 0                          | 2    | 0          | 0     | 2          | 1                   | 0         | 2    | 0     | 3          | 0                          | 1    | 6    | 1     | 8          | 0                          | 0         | 1          | 0          | 1          | 0                     | 15   | 0     | 0          | 15         | 29         |
| Total Volume   | 0                          | 5    | 1          | 0     | 6          | 2                   | 1         | 18   | 1     | 22         | 0                          | 5    | 25   | 3     | 33         | 0                          | 0         | 1          | 0          | 1          | 1                     | 44   | 0     | 0          | 45         | 107        |
| % App. Total   | 0                          | 83.3 | 16.7       | 0     |            | 9.1                 | 4.5       | 81.8 | 4.5   |            | 0                          | 15.2 | 75.8 | 9.1   |            | 0                          | 0         | 100        | 0          |            | 2.2                   | 97.8 | 0     | 0          |            |            |
| PHF  | .000                       | .625 | .250       | .000  | .500       | .500                | .250      | .500 | .250  | .550       | .000                       | .417 | .781 | .750  | .825       | .000                       | .000      | .250       | .000       | .250       | .250                  | .733 | .000  | .000       | .750       | .922       |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-006 Northgate Avenue & Grand Avenue

Date : 1/0/1900

City of Oakland  
All Vehicles & Utturns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Northgate Avenue Southbound |          |            |          |             | Grand Avenue Westbound |             |            |           |             | Northgate Avenue Northbound |          |          |          |           | Grand Avenue Eastbound |             |          |           |             | Total       | Utturns Total |
|--------------------|-----------------------------|----------|------------|----------|-------------|------------------------|-------------|------------|-----------|-------------|-----------------------------|----------|----------|----------|-----------|------------------------|-------------|----------|-----------|-------------|-------------|---------------|
|                    | LEFT                        | THRU     | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                   | THRU        | RIGHT      | UTURNS    | APP.TOTAL   | LEFT                        | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                   | THRU        | RIGHT    | UTURNS    | APP.TOTAL   |             |               |
| 7:00               | 100                         | 0        | 48         | 1        | 149         | 0                      | 66          | 16         | 0         | 82          | 1                           | 1        | 0        | 0        | 2         | 16                     | 86          | 0        | 2         | 104         | 337         | 3             |
| 7:15               | 86                          | 0        | 58         | 1        | 145         | 0                      | 83          | 23         | 0         | 106         | 0                           | 0        | 1        | 0        | 1         | 27                     | 74          | 0        | 0         | 101         | 353         | 1             |
| 7:30               | 94                          | 0        | 38         | 0        | 132         | 1                      | 91          | 25         | 0         | 117         | 0                           | 0        | 0        | 0        | 0         | 25                     | 79          | 0        | 1         | 105         | 354         | 1             |
| 7:45               | 135                         | 0        | 49         | 0        | 184         | 0                      | 91          | 31         | 0         | 122         | 0                           | 0        | 0        | 0        | 0         | 32                     | 94          | 0        | 0         | 126         | 432         | 0             |
| <b>Total</b>       | <b>415</b>                  | <b>0</b> | <b>193</b> | <b>2</b> | <b>610</b>  | <b>1</b>               | <b>331</b>  | <b>95</b>  | <b>0</b>  | <b>427</b>  | <b>1</b>                    | <b>1</b> | <b>1</b> | <b>0</b> | <b>3</b>  | <b>100</b>             | <b>333</b>  | <b>0</b> | <b>3</b>  | <b>436</b>  | <b>1476</b> | <b>5</b>      |
| 8:00               | 154                         | 0        | 42         | 0        | 196         | 0                      | 100         | 32         | 0         | 132         | 1                           | 1        | 0        | 0        | 2         | 39                     | 133         | 1        | 1         | 174         | 504         | 1             |
| 8:15               | 155                         | 1        | 41         | 0        | 197         | 0                      | 133         | 30         | 0         | 163         | 1                           | 0        | 0        | 0        | 1         | 36                     | 116         | 1        | 0         | 153         | 514         | 0             |
| 8:30               | 144                         | 0        | 54         | 1        | 199         | 0                      | 93          | 34         | 2         | 129         | 0                           | 1        | 0        | 0        | 1         | 32                     | 99          | 2        | 2         | 135         | 464         | 5             |
| 8:45               | 164                         | 0        | 41         | 1        | 206         | 0                      | 121         | 19         | 0         | 140         | 0                           | 0        | 0        | 0        | 0         | 33                     | 112         | 0        | 0         | 145         | 491         | 1             |
| <b>Total</b>       | <b>617</b>                  | <b>1</b> | <b>178</b> | <b>2</b> | <b>798</b>  | <b>0</b>               | <b>447</b>  | <b>115</b> | <b>2</b>  | <b>564</b>  | <b>2</b>                    | <b>2</b> | <b>0</b> | <b>0</b> | <b>4</b>  | <b>140</b>             | <b>460</b>  | <b>4</b> | <b>3</b>  | <b>607</b>  | <b>1973</b> | <b>7</b>      |
| 16:00              | 39                          | 0        | 31         | 0        | 70          | 0                      | 126         | 95         | 0         | 221         | 0                           | 0        | 0        | 0        | 0         | 49                     | 131         | 0        | 3         | 183         | 474         | 3             |
| 16:15              | 44                          | 0        | 37         | 0        | 81          | 1                      | 129         | 91         | 4         | 225         | 0                           | 0        | 0        | 0        | 0         | 51                     | 141         | 0        | 0         | 192         | 498         | 4             |
| 16:30              | 46                          | 0        | 21         | 0        | 67          | 0                      | 132         | 78         | 2         | 212         | 0                           | 1        | 0        | 0        | 1         | 44                     | 137         | 0        | 0         | 181         | 461         | 2             |
| 16:45              | 64                          | 1        | 20         | 3        | 88          | 0                      | 142         | 65         | 4         | 211         | 0                           | 0        | 0        | 0        | 0         | 45                     | 170         | 0        | 0         | 215         | 514         | 7             |
| <b>Total</b>       | <b>193</b>                  | <b>1</b> | <b>109</b> | <b>3</b> | <b>306</b>  | <b>1</b>               | <b>529</b>  | <b>329</b> | <b>10</b> | <b>869</b>  | <b>0</b>                    | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b>  | <b>189</b>             | <b>579</b>  | <b>0</b> | <b>3</b>  | <b>771</b>  | <b>1947</b> | <b>16</b>     |
| 17:00              | 52                          | 0        | 22         | 0        | 74          | 0                      | 153         | 92         | 1         | 246         | 0                           | 0        | 0        | 0        | 0         | 58                     | 204         | 0        | 1         | 263         | 583         | 2             |
| 17:15              | 44                          | 0        | 25         | 0        | 69          | 0                      | 155         | 77         | 3         | 235         | 0                           | 0        | 0        | 0        | 0         | 33                     | 175         | 0        | 0         | 208         | 512         | 3             |
| 17:30              | 48                          | 0        | 26         | 0        | 74          | 0                      | 134         | 76         | 1         | 211         | 0                           | 0        | 0        | 0        | 0         | 46                     | 179         | 0        | 1         | 226         | 511         | 2             |
| 17:45              | 60                          | 0        | 22         | 0        | 82          | 0                      | 140         | 71         | 2         | 213         | 0                           | 0        | 0        | 0        | 0         | 36                     | 175         | 0        | 0         | 211         | 506         | 2             |
| <b>Total</b>       | <b>204</b>                  | <b>0</b> | <b>95</b>  | <b>0</b> | <b>299</b>  | <b>0</b>               | <b>582</b>  | <b>316</b> | <b>7</b>  | <b>905</b>  | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>173</b>             | <b>733</b>  | <b>0</b> | <b>2</b>  | <b>908</b>  | <b>2112</b> | <b>9</b>      |
| <b>Grand Total</b> | <b>1429</b>                 | <b>2</b> | <b>575</b> | <b>7</b> | <b>2013</b> | <b>2</b>               | <b>1889</b> | <b>855</b> | <b>19</b> | <b>2765</b> | <b>3</b>                    | <b>4</b> | <b>1</b> | <b>0</b> | <b>8</b>  | <b>602</b>             | <b>2105</b> | <b>4</b> | <b>11</b> | <b>2722</b> | <b>7508</b> | <b>37</b>     |
| Apprch %           | 71.0%                       | 0.1%     | 28.6%      | 0.3%     |             | 0.1%                   | 68.3%       | 30.9%      | 0.7%      |             | 37.5%                       | 50.0%    | 12.5%    | 0.0%     |           | 22.1%                  | 77.3%       | 0.1%     | 0.4%      |             |             |               |
| Total %            | 19.0%                       | 0.0%     | 7.7%       | 0.1%     | 26.8%       | 0.0%                   | 25.2%       | 11.4%      | 0.3%      | 36.8%       | 0.0%                        | 0.1%     | 0.0%     | 0.0%     | 0.1%      | 8.0%                   | 28.0%       | 0.1%     | 0.1%      | 36.3%       | 100.0%      |               |

| AM PEAK HOUR                                      | Northgate Avenue Southbound |      |       |        |           | Grand Avenue Westbound |       |       |        |           | Northgate Avenue Northbound |       |       |        |           | Grand Avenue Eastbound |       |       |        |           | Total |
|---|-----------------------------|------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|-----------------------------|-------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|-------|
|   | LEFT                        | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                        | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                             |      |       |        |           |                        |       |       |        |           |                             |       |       |        |           |                        |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                             |      |       |        |           |                        |       |       |        |           |                             |       |       |        |           |                        |       |       |        |           |       |
| 8:00  | 154                         | 0    | 42    | 0      | 196       | 0                      | 100   | 32    | 0      | 132       | 1                           | 1     | 0     | 0      | 2         | 39                     | 133   | 1     | 1      | 174       | 504   |
| 8:15  | 155                         | 1    | 41    | 0      | 197       | 0                      | 133   | 30    | 0      | 163       | 1                           | 0     | 0     | 0      | 1         | 36                     | 116   | 1     | 0      | 153       | 514   |
| 8:30  | 144                         | 0    | 54    | 1      | 199       | 0                      | 93    | 34    | 2      | 129       | 0                           | 1     | 0     | 0      | 1         | 32                     | 99    | 2     | 2      | 135       | 464   |
| 8:45  | 164                         | 0    | 41    | 1      | 206       | 0                      | 121   | 19    | 0      | 140       | 0                           | 0     | 0     | 0      | 0         | 33                     | 112   | 0     | 0      | 145       | 491   |
| Total Volume                                      | 617                         | 1    | 178   | 2      | 798       | 0                      | 447   | 115   | 2      | 564       | 2                           | 2     | 0     | 0      | 4         | 140                    | 460   | 4     | 3      | 607       | 1973  |
| % App Total                                       | 77.3%                       | 0.1% | 22.3% | 0.3%   |           | 0.0%                   | 79.3% | 20.4% | 0.4%   |           | 50.0%                       | 50.0% | 0.0%  | 0.0%   |           | 23.1%                  | 75.8% | 0.7%  | 0.5%   |           |       |
| PHF   | .941                        | .250 | .824  | .500   | .968      | .000                   | .840  | .846  | .250   | .865      | .500                        | .500  | .000  | .000   | .500      | .897                   | .865  | .500  | .375   | .872      | .960  |

| PM PEAK HOUR                                      | Northgate Avenue Southbound |      |       |        |           | Grand Avenue Westbound |       |       |        |           | Northgate Avenue Northbound |      |       |        |           | Grand Avenue Eastbound |       |       |        |           | Total |
|---|-----------------------------|------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|-----------------------------|------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|-------|
|   | LEFT                        | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                        | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 16:45 to 17:45            |                             |      |       |        |           |                        |       |       |        |           |                             |      |       |        |           |                        |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 16:45 |                             |      |       |        |           |                        |       |       |        |           |                             |      |       |        |           |                        |       |       |        |           |       |
| 16:45   | 64                          | 1    | 20    | 3      | 88        | 0                      | 142   | 65    | 4      | 211       | 0                           | 0    | 0     | 0      | 0         | 45                     | 170   | 0     | 0      | 215       | 514   |
| 17:00   | 52                          | 0    | 22    | 0      | 74        | 0                      | 153   | 92    | 1      | 246       | 0                           | 0    | 0     | 0      | 0         | 58                     | 204   | 0     | 1      | 263       | 583   |
| 17:15   | 44                          | 0    | 25    | 0      | 69        | 0                      | 155   | 77    | 3      | 235       | 0                           | 0    | 0     | 0      | 0         | 33                     | 175   | 0     | 0      | 208       | 512   |
| 17:30   | 48                          | 0    | 26    | 0      | 74        | 0                      | 134   | 76    | 1      | 211       | 0                           | 0    | 0     | 0      | 0         | 46                     | 179   | 0     | 1      | 226       | 511   |
| Total Volume                                      | 208                         | 1    | 93    | 3      | 305       | 0                      | 584   | 310   | 9      | 903       | 0                           | 0    | 0     | 0      | 0         | 182                    | 728   | 0     | 2      | 912       | 2120  |
| % App Total                                       | 68.2%                       | 0.3% | 30.5% | 1.0%   |           | 0.0%                   | 64.7% | 34.3% | 1.0%   |           | 0.0%                        | 0.0% | 0.0%  | 0.0%   |           | 20.0%                  | 79.8% | 0.0%  | 0.2%   |           |       |
| PHF   | .813                        | .250 | .894  | .250   | .866      | .000                   | .942  | .842  | .563   | .918      | .000                        | .000 | .000  | .000   | .000      | .784                   | .892  | .000  | .500   | .867      | .909  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Nothing On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-006 Northgate Avenue & Grand Avenue  
 Date : 1/0/1900

### Bank 1 Count = Bikes & Peds

| START TIME         | Northgate Avenue Southbound |          |          |            |           | Grand Avenue Westbound |           |          |           |           | Northgate Avenue Northbound |          |          |            |           | Grand Avenue Eastbound |           |          |           |           | Total      | Peds Total |
|--------------------|-----------------------------|----------|----------|------------|-----------|------------------------|-----------|----------|-----------|-----------|-----------------------------|----------|----------|------------|-----------|------------------------|-----------|----------|-----------|-----------|------------|------------|
|                    | LEFT                        | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                   | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT                        | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                   | THRU      | RIGHT    | PEDS      | APP.TOTAL |            |            |
| 7:00               | 1                           | 0        | 0        | 0          | 1         | 0                      | 2         | 0        | 0         | 2         | 0                           | 0        | 0        | 4          | 0         | 0                      | 4         | 0        | 2         | 4         | 7          | 6          |
| 7:15               | 0                           | 0        | 0        | 0          | 0         | 0                      | 2         | 0        | 0         | 2         | 0                           | 0        | 0        | 6          | 0         | 1                      | 3         | 0        | 0         | 4         | 6          | 6          |
| 7:30               | 0                           | 0        | 0        | 0          | 0         | 0                      | 1         | 1        | 0         | 2         | 0                           | 0        | 0        | 6          | 0         | 0                      | 2         | 0        | 3         | 2         | 4          | 9          |
| 7:45               | 0                           | 0        | 0        | 8          | 0         | 0                      | 5         | 0        | 2         | 5         | 0                           | 0        | 0        | 13         | 0         | 0                      | 6         | 0        | 4         | 6         | 11         | 27         |
| <b>Total</b>       | <b>1</b>                    | <b>0</b> | <b>0</b> | <b>8</b>   | <b>1</b>  | <b>0</b>               | <b>10</b> | <b>1</b> | <b>2</b>  | <b>11</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>29</b>  | <b>0</b>  | <b>1</b>               | <b>15</b> | <b>0</b> | <b>9</b>  | <b>16</b> | <b>28</b>  | <b>48</b>  |
| 8:00               | 0                           | 0        | 0        | 7          | 0         | 0                      | 2         | 0        | 0         | 2         | 0                           | 0        | 0        | 19         | 0         | 0                      | 5         | 0        | 3         | 5         | 7          | 29         |
| 8:15               | 1                           | 0        | 0        | 6          | 1         | 0                      | 5         | 0        | 0         | 5         | 0                           | 0        | 0        | 11         | 0         | 0                      | 3         | 0        | 3         | 3         | 9          | 20         |
| 8:30               | 0                           | 0        | 1        | 6          | 1         | 0                      | 2         | 1        | 0         | 3         | 0                           | 0        | 0        | 7          | 0         | 0                      | 6         | 0        | 5         | 6         | 10         | 18         |
| 8:45               | 0                           | 0        | 0        | 5          | 0         | 0                      | 6         | 0        | 0         | 6         | 0                           | 0        | 0        | 12         | 0         | 0                      | 10        | 0        | 3         | 10        | 16         | 20         |
| <b>Total</b>       | <b>1</b>                    | <b>0</b> | <b>1</b> | <b>24</b>  | <b>2</b>  | <b>0</b>               | <b>15</b> | <b>1</b> | <b>0</b>  | <b>16</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>49</b>  | <b>0</b>  | <b>0</b>               | <b>24</b> | <b>0</b> | <b>14</b> | <b>24</b> | <b>42</b>  | <b>87</b>  |
| 16:00              | 0                           | 0        | 0        | 6          | 0         | 0                      | 8         | 0        | 2         | 8         | 0                           | 0        | 0        | 6          | 0         | 0                      | 4         | 0        | 2         | 4         | 12         | 16         |
| 16:15              | 0                           | 0        | 0        | 6          | 0         | 0                      | 2         | 2        | 3         | 4         | 0                           | 0        | 0        | 8          | 0         | 0                      | 9         | 0        | 3         | 9         | 13         | 20         |
| 16:30              | 0                           | 0        | 1        | 6          | 1         | 0                      | 4         | 2        | 2         | 6         | 0                           | 0        | 0        | 14         | 0         | 0                      | 3         | 0        | 1         | 3         | 10         | 23         |
| 16:45              | 0                           | 0        | 0        | 12         | 0         | 0                      | 9         | 0        | 2         | 9         | 0                           | 0        | 0        | 15         | 0         | 0                      | 7         | 0        | 5         | 7         | 16         | 34         |
| <b>Total</b>       | <b>0</b>                    | <b>0</b> | <b>1</b> | <b>30</b>  | <b>1</b>  | <b>0</b>               | <b>23</b> | <b>4</b> | <b>9</b>  | <b>27</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>43</b>  | <b>0</b>  | <b>0</b>               | <b>23</b> | <b>0</b> | <b>11</b> | <b>23</b> | <b>51</b>  | <b>93</b>  |
| 17:00              | 0                           | 0        | 0        | 12         | 0         | 0                      | 10        | 0        | 1         | 10        | 0                           | 0        | 0        | 23         | 0         | 0                      | 6         | 0        | 4         | 6         | 16         | 40         |
| 17:15              | 0                           | 0        | 0        | 12         | 0         | 0                      | 5         | 1        | 4         | 6         | 0                           | 0        | 0        | 14         | 0         | 0                      | 6         | 0        | 4         | 6         | 12         | 34         |
| 17:30              | 0                           | 0        | 1        | 6          | 1         | 0                      | 7         | 0        | 4         | 7         | 0                           | 0        | 0        | 10         | 0         | 0                      | 6         | 0        | 5         | 6         | 14         | 25         |
| 17:45              | 0                           | 0        | 0        | 13         | 0         | 0                      | 6         | 0        | 5         | 6         | 0                           | 0        | 0        | 14         | 0         | 0                      | 11        | 0        | 6         | 11        | 17         | 38         |
| <b>Total</b>       | <b>0</b>                    | <b>0</b> | <b>1</b> | <b>43</b>  | <b>1</b>  | <b>0</b>               | <b>28</b> | <b>1</b> | <b>14</b> | <b>29</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>61</b>  | <b>0</b>  | <b>0</b>               | <b>29</b> | <b>0</b> | <b>19</b> | <b>29</b> | <b>59</b>  | <b>137</b> |
| <b>Grand Total</b> | <b>2</b>                    | <b>0</b> | <b>3</b> | <b>105</b> | <b>5</b>  | <b>0</b>               | <b>76</b> | <b>7</b> | <b>25</b> | <b>83</b> | <b>0</b>                    | <b>0</b> | <b>0</b> | <b>182</b> | <b>0</b>  | <b>1</b>               | <b>91</b> | <b>0</b> | <b>53</b> | <b>92</b> | <b>180</b> | <b>365</b> |
| Apprch %           | 40.0%                       | 0.0%     | 60.0%    |            |           | 0.0%                   | 91.6%     | 8.4%     |           |           | 0.0%                        | 0.0%     | 0.0%     |            |           | 1.1%                   | 98.9%     | 0.0%     |           |           |            |            |
| Total %            | 1.1%                        | 0.0%     | 1.7%     |            | 2.8%      | 0.0%                   | 42.2%     | 3.9%     |           | 46.1%     | 0.0%                        | 0.0%     | 0.0%     |            | 0.0%      | 0.6%                   | 50.6%     | 0.0%     |           | 51.1%     | 100.0%     |            |

| AM PEAK HOUR                                      | Northgate Avenue Southbound |      |       |      |           | Grand Avenue Westbound |       |       |      |           | Northgate Avenue Northbound |      |       |      |           | Grand Avenue Eastbound |        |       |      |           | Total |
|---|-----------------------------|------|-------|------|-----------|------------------------|-------|-------|------|-----------|-----------------------------|------|-------|------|-----------|------------------------|--------|-------|------|-----------|-------|
|   | LEFT                        | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                        | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU   | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                             |      |       |      |           |                        |       |       |      |           |                             |      |       |      |           |                        |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                             |      |       |      |           |                        |       |       |      |           |                             |      |       |      |           |                        |        |       |      |           |       |
| 8:00  | 0                           | 0    | 0     | 7    | 0         | 0                      | 2     | 0     | 0    | 2         | 0                           | 0    | 0     | 19   | 0         | 0                      | 5      | 0     | 3    | 5         | 7     |
| 8:15  | 1                           | 0    | 0     | 6    | 1         | 0                      | 5     | 0     | 0    | 5         | 0                           | 0    | 0     | 11   | 0         | 0                      | 3      | 0     | 3    | 3         | 9     |
| 8:30  | 0                           | 0    | 1     | 6    | 1         | 0                      | 2     | 1     | 0    | 3         | 0                           | 0    | 0     | 7    | 0         | 0                      | 6      | 0     | 5    | 6         | 10    |
| 8:45  | 0                           | 0    | 0     | 5    | 0         | 0                      | 6     | 0     | 0    | 6         | 0                           | 0    | 0     | 12   | 0         | 0                      | 10     | 0     | 3    | 10        | 16    |
| Total Volume                                      | 1                           | 0    | 1     | 24   | 2         | 0                      | 15    | 1     | 0    | 16        | 0                           | 0    | 0     | 49   | 0         | 0                      | 24     | 0     | 14   | 24        | 42    |
| % App Total                                       | 50.0%                       | 0.0% | 50.0% |      |           | 0.0%                   | 93.8% | 6.3%  |      |           | 0.0%                        | 0.0% | 0.0%  |      |           | 0.0%                   | 100.0% | 0.0%  |      |           |       |
| PHF   | .250                        | .000 | .250  |      | .500      | .000                   | .625  | .250  |      | .667      | .000                        | .000 | .000  |      | .000      | .000                   | .600   | .000  |      | .600      | .656  |

| PM PEAK HOUR                                      | Northgate Avenue Southbound |      |        |      |           | Grand Avenue Westbound |       |       |      |           | Northgate Avenue Northbound |      |       |      |           | Grand Avenue Eastbound |        |       |      |           | Total |
|---|-----------------------------|------|--------|------|-----------|------------------------|-------|-------|------|-----------|-----------------------------|------|-------|------|-----------|------------------------|--------|-------|------|-----------|-------|
|   | LEFT                        | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                        | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU   | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:45 to 17:45            |                             |      |        |      |           |                        |       |       |      |           |                             |      |       |      |           |                        |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:45 |                             |      |        |      |           |                        |       |       |      |           |                             |      |       |      |           |                        |        |       |      |           |       |
| 16:45   | 0                           | 0    | 0      | 12   | 0         | 0                      | 9     | 0     | 2    | 9         | 0                           | 0    | 0     | 15   | 0         | 0                      | 7      | 0     | 5    | 7         | 16    |
| 17:00   | 0                           | 0    | 0      | 12   | 0         | 0                      | 10    | 0     | 1    | 10        | 0                           | 0    | 0     | 23   | 0         | 0                      | 6      | 0     | 4    | 6         | 16    |
| 17:15   | 0                           | 0    | 0      | 12   | 0         | 0                      | 5     | 1     | 4    | 6         | 0                           | 0    | 0     | 14   | 0         | 0                      | 6      | 0     | 4    | 6         | 12    |
| 17:30   | 0                           | 0    | 1      | 6    | 1         | 0                      | 7     | 0     | 4    | 7         | 0                           | 0    | 0     | 10   | 0         | 0                      | 6      | 0     | 5    | 6         | 14    |
| Total Volume                                      | 0                           | 0    | 1      | 42   | 1         | 0                      | 31    | 1     | 11   | 32        | 0                           | 0    | 0     | 62   | 0         | 0                      | 25     | 0     | 18   | 25        | 58    |
| % App Total                                       | 0.0%                        | 0.0% | 100.0% |      |           | 0.0%                   | 96.9% | 3.1%  |      |           | 0.0%                        | 0.0% | 0.0%  |      |           | 0.0%                   | 100.0% | 0.0%  |      |           |       |
| PHF   | .000                        | .000 | .250   |      | .250      | .000                   | .775  | .250  |      | .800      | .000                        | .000 | .000  |      | .000      | .000                   | .893   | .000  |      | .893      | .906  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-002 Telegraph Ave & W Grand Ave

Date : 9/29/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | Telegraph Ave Southbound |             |            |          |             | W Grand Ave Westbound |             |            |           |             | Telegraph Ave Northbound |             |            |          |             | W Grand Ave Eastbound |             |            |           |             | Total       | Uturns Total |
|--------------------|--------------------------|-------------|------------|----------|-------------|-----------------------|-------------|------------|-----------|-------------|--------------------------|-------------|------------|----------|-------------|-----------------------|-------------|------------|-----------|-------------|-------------|--------------|
|                    | LEFT                     | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU        | RIGHT      | UTURNS    | APP.TOTAL   | LEFT                     | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU        | RIGHT      | UTURNS    | APP.TOTAL   |             |              |
| 7:30               | 13                       | 42          | 11         | 0        | 66          | 10                    | 82          | 9          | 1         | 102         | 29                       | 38          | 9          | 0        | 76          | 15                    | 108         | 60         | 0         | 183         | 427         | 1            |
| 7:45               | 9                        | 57          | 19         | 0        | 85          | 13                    | 85          | 11         | 0         | 109         | 39                       | 46          | 13         | 0        | 98          | 31                    | 112         | 57         | 1         | 201         | 493         | 1            |
| 8:00               | 10                       | 69          | 20         | 0        | 99          | 13                    | 94          | 9          | 0         | 116         | 43                       | 44          | 18         | 0        | 105         | 20                    | 153         | 85         | 3         | 261         | 581         | 3            |
| 8:15               | 9                        | 60          | 16         | 0        | 85          | 12                    | 101         | 7          | 0         | 120         | 37                       | 57          | 7          | 0        | 101         | 27                    | 147         | 64         | 2         | 240         | 546         | 2            |
| <b>Total</b>       | <b>41</b>                | <b>228</b>  | <b>66</b>  | <b>0</b> | <b>335</b>  | <b>48</b>             | <b>362</b>  | <b>36</b>  | <b>1</b>  | <b>447</b>  | <b>148</b>               | <b>185</b>  | <b>47</b>  | <b>0</b> | <b>380</b>  | <b>93</b>             | <b>520</b>  | <b>266</b> | <b>6</b>  | <b>885</b>  | <b>2047</b> | <b>7</b>     |
| 8:30               | 14                       | 75          | 14         | 0        | 103         | 8                     | 92          | 14         | 2         | 116         | 25                       | 53          | 7          | 0        | 85          | 18                    | 155         | 68         | 4         | 245         | 549         | 6            |
| 8:45               | 17                       | 91          | 20         | 0        | 128         | 5                     | 74          | 9          | 1         | 99          | 24                       | 60          | 11         | 0        | 95          | 25                    | 181         | 109        | 3         | 318         | 640         | 4            |
| 9:00               | 17                       | 64          | 17         | 0        | 98          | 13                    | 92          | 9          | 1         | 115         | 39                       | 47          | 9          | 0        | 95          | 22                    | 160         | 53         | 1         | 236         | 544         | 2            |
| 9:15               | 17                       | 74          | 17         | 0        | 108         | 17                    | 76          | 8          | 2         | 103         | 35                       | 49          | 9          | 0        | 93          | 24                    | 133         | 55         | 2         | 214         | 518         | 4            |
| <b>Total</b>       | <b>65</b>                | <b>304</b>  | <b>68</b>  | <b>0</b> | <b>437</b>  | <b>53</b>             | <b>334</b>  | <b>40</b>  | <b>6</b>  | <b>433</b>  | <b>123</b>               | <b>209</b>  | <b>36</b>  | <b>0</b> | <b>368</b>  | <b>89</b>             | <b>629</b>  | <b>285</b> | <b>10</b> | <b>1013</b> | <b>2251</b> | <b>16</b>    |
| 16:00              | 18                       | 62          | 23         | 0        | 103         | 13                    | 110         | 10         | 2         | 135         | 70                       | 79          | 36         | 0        | 185         | 26                    | 144         | 33         | 6         | 209         | 632         | 8            |
| 16:15              | 22                       | 67          | 33         | 0        | 122         | 6                     | 109         | 13         | 3         | 131         | 73                       | 77          | 16         | 0        | 166         | 23                    | 121         | 26         | 9         | 179         | 598         | 12           |
| 16:30              | 23                       | 68          | 25         | 0        | 116         | 13                    | 103         | 12         | 3         | 131         | 84                       | 84          | 14         | 0        | 182         | 23                    | 164         | 41         | 1         | 229         | 658         | 4            |
| 16:45              | 26                       | 76          | 25         | 0        | 127         | 9                     | 126         | 17         | 3         | 155         | 76                       | 75          | 29         | 0        | 180         | 24                    | 183         | 29         | 4         | 240         | 702         | 7            |
| <b>Total</b>       | <b>89</b>                | <b>273</b>  | <b>106</b> | <b>0</b> | <b>468</b>  | <b>41</b>             | <b>448</b>  | <b>52</b>  | <b>11</b> | <b>552</b>  | <b>303</b>               | <b>315</b>  | <b>95</b>  | <b>0</b> | <b>713</b>  | <b>96</b>             | <b>612</b>  | <b>129</b> | <b>20</b> | <b>857</b>  | <b>2590</b> | <b>31</b>    |
| 17:00              | 17                       | 72          | 22         | 0        | 111         | 11                    | 139         | 15         | 3         | 168         | 88                       | 84          | 29         | 0        | 201         | 25                    | 175         | 29         | 8         | 237         | 717         | 11           |
| 17:15              | 31                       | 77          | 19         | 0        | 127         | 11                    | 125         | 11         | 2         | 149         | 57                       | 82          | 30         | 0        | 169         | 28                    | 201         | 36         | 5         | 270         | 715         | 7            |
| 17:30              | 21                       | 73          | 27         | 0        | 121         | 8                     | 106         | 15         | 2         | 131         | 77                       | 91          | 29         | 0        | 197         | 20                    | 173         | 46         | 5         | 244         | 693         | 7            |
| 17:45              | 18                       | 69          | 22         | 0        | 109         | 14                    | 107         | 21         | 2         | 144         | 68                       | 79          | 31         | 0        | 178         | 20                    | 214         | 49         | 6         | 289         | 720         | 8            |
| <b>Total</b>       | <b>87</b>                | <b>291</b>  | <b>90</b>  | <b>0</b> | <b>468</b>  | <b>44</b>             | <b>477</b>  | <b>62</b>  | <b>9</b>  | <b>592</b>  | <b>290</b>               | <b>336</b>  | <b>119</b> | <b>0</b> | <b>745</b>  | <b>93</b>             | <b>763</b>  | <b>160</b> | <b>24</b> | <b>1040</b> | <b>2845</b> | <b>33</b>    |
| <b>Grand Total</b> | <b>282</b>               | <b>1096</b> | <b>330</b> | <b>0</b> | <b>1708</b> | <b>186</b>            | <b>1621</b> | <b>190</b> | <b>27</b> | <b>2024</b> | <b>864</b>               | <b>1045</b> | <b>297</b> | <b>0</b> | <b>2206</b> | <b>371</b>            | <b>2524</b> | <b>840</b> | <b>60</b> | <b>3795</b> | <b>9733</b> | <b>87</b>    |
| Apprch %           | 16.5%                    | 64.2%       | 19.3%      | 0.0%     |             | 9.2%                  | 80.1%       | 9.4%       | 1.3%      |             | 39.2%                    | 47.4%       | 13.5%      | 0.0%     |             | 9.8%                  | 66.5%       | 22.1%      | 1.6%      |             |             |              |
| Total %            | 2.9%                     | 11.3%       | 3.4%       | 0.0%     | 17.5%       | 1.9%                  | 16.7%       | 2.0%       | 0.3%      | 20.8%       | 8.9%                     | 10.7%       | 3.1%       | 0.0%     | 22.7%       | 3.8%                  | 25.9%       | 8.6%       | 0.6%      | 39.0%       | 100.0%      |              |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | W Grand Ave Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | W Grand Ave Eastbound |       |       |        |           | Total |  |
|---|--------------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                          |       |       |        |           |                       |       |       |        |           |                          |       |       |        |           |                       |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                          |       |       |        |           |                       |       |       |        |           |                          |       |       |        |           |                       |       |       |        |           |       |  |
| 8:00  | 10                       | 69    | 20    | 0      | 99        | 13                    | 94    | 9     | 0      | 116       | 43                       | 44    | 18    | 0      | 105       | 20                    | 153   | 85    | 3      | 261       | 581   |  |
| 8:15  | 9                        | 60    | 16    | 0      | 85        | 12                    | 101   | 7     | 0      | 120       | 37                       | 57    | 7     | 0      | 101       | 27                    | 147   | 64    | 2      | 240       | 546   |  |
| 8:30  | 14                       | 75    | 14    | 0      | 103       | 8                     | 92    | 14    | 2      | 116       | 25                       | 53    | 7     | 0      | 85        | 18                    | 155   | 68    | 4      | 245       | 549   |  |
| 8:45  | 17                       | 91    | 20    | 0      | 128       | 15                    | 74    | 9     | 1      | 99        | 24                       | 60    | 11    | 0      | 95        | 25                    | 181   | 109   | 3      | 318       | 640   |  |
| Total Volume                                      | 50                       | 295   | 70    | 0      | 415       | 48                    | 361   | 39    | 3      | 451       | 129                      | 214   | 43    | 0      | 386       | 90                    | 636   | 326   | 12     | 1064      | 2316  |  |
| % App Total                                       | 12.0%                    | 71.1% | 16.9% | 0.0%   |           | 10.6%                 | 80.0% | 8.6%  | 0.7%   |           | 33.4%                    | 55.4% | 11.1% | 0.0%   |           | 8.5%                  | 59.8% | 30.6% | 1.1%   |           |       |  |
| PHF   | .735                     | .810  | .875  | .000   | .811      | .800                  | .894  | .696  | .375   | .940      | .750                     | .892  | .597  | .000   | .919      | .833                  | .878  | .748  | .750   | .836      | .905  |  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | W Grand Ave Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | W Grand Ave Eastbound |       |       |        |           | Total |  |
|---|--------------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |        |           |                       |       |       |        |           |                          |       |       |        |           |                       |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |        |           |                       |       |       |        |           |                          |       |       |        |           |                       |       |       |        |           |       |  |
| 17:00   | 17                       | 72    | 22    | 0      | 111       | 11                    | 139   | 15    | 3      | 168       | 88                       | 84    | 29    | 0      | 201       | 25                    | 175   | 29    | 8      | 237       | 717   |  |
| 17:15   | 31                       | 77    | 19    | 0      | 127       | 11                    | 125   | 11    | 2      | 149       | 57                       | 82    | 30    | 0      | 169       | 28                    | 201   | 36    | 5      | 270       | 715   |  |
| 17:30   | 21                       | 73    | 27    | 0      | 121       | 8                     | 106   | 15    | 2      | 131       | 77                       | 91    | 29    | 0      | 197       | 20                    | 173   | 46    | 5      | 244       | 693   |  |
| 17:45   | 18                       | 69    | 22    | 0      | 109       | 14                    | 107   | 21    | 2      | 144       | 68                       | 79    | 31    | 0      | 178       | 20                    | 214   | 49    | 6      | 289       | 720   |  |
| Total Volume                                      | 87                       | 291   | 90    | 0      | 468       | 44                    | 477   | 62    | 9      | 592       | 290                      | 336   | 119   | 0      | 745       | 93                    | 763   | 160   | 24     | 1040      | 2845  |  |
| % App Total                                       | 18.6%                    | 62.2% | 19.2% | 0.0%   |           | 7.4%                  | 80.6% | 10.5% | 1.5%   |           | 38.9%                    | 45.1% | 16.0% | 0.0%   |           | 8.9%                  | 73.4% | 15.4% | 2.3%   |           |       |  |
| PHF   | .702                     | .945  | .833  | .000   | .921      | .786                  | .858  | .738  | .750   | .881      | .824                     | .923  | .960  | .000   | .927      | .830                  | .891  | .816  | .750   | .900      | .988  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-002 Telegraph Ave & W Grand Ave

Date : 9/29/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |            |            | W Grand Ave Westbound |           |           |            |            | Telegraph Ave Northbound |            |          |            |            | W Grand Ave Eastbound |           |           |            |            | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|------------|------------|-----------------------|-----------|-----------|------------|------------|--------------------------|------------|----------|------------|------------|-----------------------|-----------|-----------|------------|------------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU      | RIGHT     | PEDS       | APP.TOTAL  | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU      | RIGHT     | PEDS       | APP.TOTAL  |            |            |
| 7:30               | 0                        | 15         | 0        | 10         | 15         | 2                     | 1         | 1         | 9          | 4          | 0                        | 0          | 0        | 1          | 0          | 0                     | 2         | 0         | 11         | 2          | 21         | 31         |
| 7:45               | 0                        | 15         | 1        | 15         | 16         | 0                     | 2         | 1         | 15         | 3          | 2                        | 2          | 1        | 8          | 5          | 0                     | 6         | 1         | 8          | 7          | 31         | 46         |
| 8:00               | 0                        | 12         | 0        | 6          | 12         | 0                     | 3         | 0         | 9          | 3          | 0                        | 3          | 0        | 12         | 3          | 1                     | 5         | 1         | 15         | 7          | 25         | 42         |
| 8:15               | 3                        | 21         | 0        | 5          | 24         | 3                     | 4         | 1         | 18         | 8          | 2                        | 1          | 1        | 9          | 4          | 0                     | 7         | 2         | 13         | 9          | 45         | 45         |
| <b>Total</b>       | <b>3</b>                 | <b>63</b>  | <b>1</b> | <b>36</b>  | <b>67</b>  | <b>5</b>              | <b>10</b> | <b>3</b>  | <b>51</b>  | <b>18</b>  | <b>4</b>                 | <b>6</b>   | <b>2</b> | <b>30</b>  | <b>12</b>  | <b>1</b>              | <b>20</b> | <b>4</b>  | <b>47</b>  | <b>25</b>  | <b>122</b> | <b>164</b> |
| 8:30               | 3                        | 21         | 0        | 2          | 24         | 0                     | 9         | 0         | 6          | 9          | 0                        | 1          | 0        | 8          | 1          | 3                     | 10        | 3         | 8          | 16         | 50         | 24         |
| 8:45               | 1                        | 32         | 1        | 8          | 34         | 1                     | 4         | 0         | 12         | 5          | 0                        | 4          | 0        | 3          | 4          | 3                     | 8         | 0         | 9          | 11         | 54         | 32         |
| 9:00               | 2                        | 19         | 2        | 5          | 23         | 1                     | 4         | 0         | 14         | 5          | 0                        | 4          | 0        | 8          | 4          | 0                     | 3         | 3         | 23         | 6          | 38         | 50         |
| 9:15               | 1                        | 21         | 0        | 5          | 22         | 1                     | 2         | 0         | 12         | 3          | 1                        | 2          | 0        | 6          | 3          | 0                     | 5         | 2         | 26         | 7          | 35         | 49         |
| <b>Total</b>       | <b>7</b>                 | <b>93</b>  | <b>3</b> | <b>20</b>  | <b>103</b> | <b>3</b>              | <b>19</b> | <b>0</b>  | <b>44</b>  | <b>22</b>  | <b>1</b>                 | <b>11</b>  | <b>0</b> | <b>25</b>  | <b>12</b>  | <b>6</b>              | <b>26</b> | <b>8</b>  | <b>66</b>  | <b>40</b>  | <b>177</b> | <b>155</b> |
| 16:00              | 1                        | 7          | 1        | 13         | 9          | 2                     | 2         | 1         | 11         | 5          | 0                        | 8          | 1        | 11         | 9          | 2                     | 3         | 1         | 21         | 6          | 29         | 56         |
| 16:15              | 4                        | 2          | 0        | 5          | 6          | 2                     | 4         | 2         | 13         | 8          | 1                        | 11         | 0        | 8          | 12         | 1                     | 7         | 0         | 19         | 8          | 34         | 45         |
| 16:30              | 3                        | 10         | 0        | 8          | 13         | 0                     | 4         | 1         | 23         | 5          | 0                        | 12         | 0        | 7          | 12         | 1                     | 3         | 0         | 18         | 4          | 34         | 56         |
| 16:45              | 1                        | 5          | 0        | 15         | 6          | 0                     | 3         | 7         | 35         | 10         | 1                        | 15         | 0        | 10         | 16         | 0                     | 9         | 2         | 30         | 11         | 43         | 90         |
| <b>Total</b>       | <b>9</b>                 | <b>24</b>  | <b>1</b> | <b>41</b>  | <b>34</b>  | <b>4</b>              | <b>13</b> | <b>11</b> | <b>82</b>  | <b>28</b>  | <b>2</b>                 | <b>46</b>  | <b>1</b> | <b>36</b>  | <b>49</b>  | <b>4</b>              | <b>22</b> | <b>3</b>  | <b>88</b>  | <b>29</b>  | <b>140</b> | <b>247</b> |
| 17:00              | 0                        | 9          | 1        | 14         | 10         | 2                     | 5         | 4         | 35         | 11         | 0                        | 26         | 0        | 8          | 26         | 1                     | 3         | 1         | 19         | 5          | 52         | 76         |
| 17:15              | 1                        | 7          | 2        | 21         | 10         | 0                     | 4         | 5         | 26         | 9          | 1                        | 18         | 4        | 8          | 23         | 0                     | 6         | 0         | 15         | 6          | 48         | 70         |
| 17:30              | 0                        | 8          | 0        | 14         | 8          | 0                     | 2         | 3         | 32         | 5          | 3                        | 27         | 0        | 11         | 30         | 1                     | 5         | 2         | 30         | 8          | 51         | 87         |
| 17:45              | 1                        | 3          | 0        | 11         | 4          | 1                     | 4         | 4         | 33         | 9          | 0                        | 21         | 0        | 12         | 21         | 1                     | 4         | 1         | 25         | 6          | 40         | 81         |
| <b>Total</b>       | <b>2</b>                 | <b>27</b>  | <b>3</b> | <b>60</b>  | <b>32</b>  | <b>3</b>              | <b>15</b> | <b>16</b> | <b>126</b> | <b>34</b>  | <b>4</b>                 | <b>92</b>  | <b>4</b> | <b>39</b>  | <b>100</b> | <b>3</b>              | <b>18</b> | <b>4</b>  | <b>89</b>  | <b>25</b>  | <b>191</b> | <b>314</b> |
| <b>Grand Total</b> | <b>21</b>                | <b>207</b> | <b>8</b> | <b>157</b> | <b>236</b> | <b>15</b>             | <b>57</b> | <b>30</b> | <b>303</b> | <b>102</b> | <b>11</b>                | <b>155</b> | <b>7</b> | <b>130</b> | <b>173</b> | <b>14</b>             | <b>86</b> | <b>19</b> | <b>290</b> | <b>119</b> | <b>630</b> | <b>880</b> |
| Apprch %           | 8.9%                     | 87.7%      | 3.4%     |            |            | 14.7%                 | 55.9%     | 29.4%     |            |            | 6.4%                     | 89.6%      | 4.0%     |            |            | 11.8%                 | 72.3%     | 16.0%     |            |            |            |            |
| Total %            | 3.3%                     | 32.9%      | 1.3%     |            | 37.5%      | 2.4%                  | 9.0%      | 4.8%      |            | 16.2%      | 1.7%                     | 24.6%      | 1.1%     |            | 27.5%      | 2.2%                  | 13.7%     | 3.0%      |            | 18.9%      | 100.0%     |            |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | W Grand Ave Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | W Grand Ave Eastbound |       |       |      |           | Total |  |
|---|--------------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                          |       |       |      |           |                       |       |       |      |           |                          |       |       |      |           |                       |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                          |       |       |      |           |                       |       |       |      |           |                          |       |       |      |           |                       |       |       |      |           |       |  |
| 8:00  | 0                        | 12    | 0     | 6    | 12        | 0                     | 3     | 0     | 9    | 3         | 0                        | 3     | 0     | 12   | 3         | 1                     | 5     | 1     | 15   | 7         | 25    |  |
| 8:15  | 3                        | 21    | 0     | 5    | 24        | 3                     | 4     | 1     | 18   | 8         | 2                        | 1     | 1     | 9    | 4         | 0                     | 7     | 2     | 13   | 9         | 45    |  |
| 8:30  | 3                        | 21    | 0     | 2    | 24        | 0                     | 9     | 0     | 6    | 9         | 0                        | 1     | 0     | 8    | 1         | 3                     | 10    | 3     | 8    | 16        | 50    |  |
| 8:45  | 1                        | 32    | 1     | 8    | 34        | 1                     | 4     | 0     | 12   | 5         | 0                        | 4     | 0     | 3    | 4         | 3                     | 8     | 0     | 9    | 11        | 54    |  |
| Total Volume                                      | 7                        | 86    | 1     | 21   | 94        | 4                     | 20    | 1     | 45   | 25        | 2                        | 9     | 1     | 32   | 12        | 7                     | 30    | 6     | 45   | 43        | 174   |  |
| % App Total                                       | 7.4%                     | 91.5% | 1.1%  |      |           | 16.0%                 | 80.0% | 4.0%  |      |           | 16.7%                    | 75.0% | 8.3%  |      |           | 16.3%                 | 69.8% | 14.0% |      |           |       |  |
| PHF   | .583                     | .672  | .250  |      | .691      | .333                  | .556  | .250  |      | .694      | .250                     | .563  | .250  |      | .750      | .583                  | .750  | .500  |      | .672      | .806  |  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | W Grand Ave Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | W Grand Ave Eastbound |       |       |      |           | Total |  |
|---|--------------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |      |           |                       |       |       |      |           |                          |       |       |      |           |                       |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |      |           |                       |       |       |      |           |                          |       |       |      |           |                       |       |       |      |           |       |  |
| 17:00   | 0                        | 9     | 1     | 14   | 10        | 2                     | 5     | 4     | 35   | 11        | 0                        | 26    | 0     | 8    | 26        | 1                     | 3     | 1     | 19   | 5         | 52    |  |
| 17:15   | 1                        | 7     | 2     | 21   | 10        | 0                     | 4     | 5     | 26   | 9         | 1                        | 18    | 4     | 8    | 23        | 0                     | 6     | 0     | 15   | 6         | 48    |  |
| 17:30   | 0                        | 8     | 0     | 14   | 8         | 0                     | 2     | 3     | 32   | 5         | 3                        | 27    | 0     | 11   | 30        | 1                     | 5     | 2     | 30   | 8         | 51    |  |
| 17:45   | 1                        | 3     | 0     | 11   | 4         | 1                     | 4     | 4     | 33   | 9         | 0                        | 21    | 0     | 12   | 21        | 1                     | 4     | 1     | 25   | 6         | 40    |  |
| Total Volume                                      | 2                        | 27    | 3     | 60   | 32        | 3                     | 15    | 16    | 126  | 34        | 4                        | 92    | 4     | 39   | 100       | 3                     | 18    | 4     | 89   | 25        | 191   |  |
| % App Total                                       | 6.3%                     | 84.4% | 9.4%  |      |           | 8.8%                  | 44.1% | 47.1% |      |           | 4.0%                     | 92.0% | 4.0%  |      |           | 12.0%                 | 72.0% | 16.0% |      |           |       |  |
| PHF   | .500                     | .750  | .375  |      | .800      | .375                  | .750  | .800  |      | .773      | .333                     | .852  | .250  |      | .833      | .750                  | .750  | .500  |      | .781      | .918  |  |



# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-004 Valley St & Grand Ave

Date : 5/26/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Valley St Southbound |          |            |          |            | Grand Ave Westbound |             |           |           |             | Valley St Northbound |           |           |          |           | Grand Ave Eastbound |             |           |           |             | Total       | Utturns Total |
|--------------------|----------------------|----------|------------|----------|------------|---------------------|-------------|-----------|-----------|-------------|----------------------|-----------|-----------|----------|-----------|---------------------|-------------|-----------|-----------|-------------|-------------|---------------|
|                    | LEFT                 | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT                 | THRU      | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   |             |               |
| 7:00               | 1                    | 0        | 5          | 0        | 6          | 4                   | 71          | 2         | 2         | 79          | 0                    | 0         | 0         | 0        | 0         | 0                   | 87          | 0         | 0         | 87          | 172         | 2             |
| 7:15               | 0                    | 0        | 4          | 0        | 4          | 4                   | 90          | 2         | 2         | 98          | 1                    | 0         | 0         | 0        | 1         | 8                   | 117         | 6         | 2         | 133         | 236         | 4             |
| 7:30               | 1                    | 1        | 5          | 0        | 7          | 1                   | 94          | 2         | 2         | 99          | 0                    | 2         | 0         | 0        | 2         | 2                   | 123         | 3         | 2         | 130         | 238         | 4             |
| 7:45               | 1                    | 0        | 3          | 0        | 4          | 6                   | 116         | 2         | 2         | 126         | 0                    | 0         | 0         | 0        | 0         | 5                   | 114         | 2         | 2         | 123         | 253         | 4             |
| <b>Total</b>       | <b>3</b>             | <b>1</b> | <b>17</b>  | <b>0</b> | <b>21</b>  | <b>15</b>           | <b>371</b>  | <b>8</b>  | <b>8</b>  | <b>402</b>  | <b>1</b>             | <b>2</b>  | <b>0</b>  | <b>0</b> | <b>3</b>  | <b>15</b>           | <b>441</b>  | <b>11</b> | <b>6</b>  | <b>473</b>  | <b>899</b>  | <b>14</b>     |
| 8:00               | 1                    | 0        | 5          | 0        | 6          | 3                   | 120         | 3         | 1         | 127         | 1                    | 0         | 3         | 0        | 4         | 6                   | 169         | 3         | 3         | 181         | 318         | 4             |
| 8:15               | 0                    | 2        | 6          | 0        | 8          | 3                   | 102         | 2         | 0         | 107         | 0                    | 1         | 1         | 0        | 2         | 3                   | 148         | 3         | 5         | 159         | 276         | 5             |
| 8:30               | 0                    | 1        | 4          | 0        | 5          | 4                   | 125         | 4         | 3         | 136         | 0                    | 3         | 0         | 0        | 3         | 3                   | 175         | 5         | 1         | 184         | 328         | 4             |
| 8:45               | 2                    | 1        | 5          | 0        | 8          | 3                   | 105         | 0         | 3         | 111         | 1                    | 0         | 4         | 0        | 5         | 5                   | 164         | 4         | 1         | 174         | 298         | 4             |
| <b>Total</b>       | <b>3</b>             | <b>4</b> | <b>20</b>  | <b>0</b> | <b>27</b>  | <b>13</b>           | <b>452</b>  | <b>9</b>  | <b>7</b>  | <b>481</b>  | <b>2</b>             | <b>4</b>  | <b>8</b>  | <b>0</b> | <b>14</b> | <b>17</b>           | <b>656</b>  | <b>15</b> | <b>10</b> | <b>698</b>  | <b>1220</b> | <b>17</b>     |
| 16:00              | 2                    | 1        | 9          | 0        | 12         | 3                   | 132         | 7         | 2         | 144         | 1                    | 0         | 8         | 0        | 9         | 9                   | 147         | 9         | 2         | 167         | 332         | 4             |
| 16:15              | 1                    | 1        | 12         | 0        | 14         | 4                   | 122         | 7         | 2         | 135         | 1                    | 0         | 4         | 0        | 5         | 6                   | 149         | 3         | 1         | 159         | 313         | 3             |
| 16:30              | 3                    | 0        | 3          | 0        | 6          | 3                   | 129         | 4         | 4         | 140         | 0                    | 2         | 6         | 0        | 8         | 9                   | 171         | 5         | 3         | 188         | 342         | 7             |
| 16:45              | 2                    | 1        | 9          | 0        | 12         | 4                   | 105         | 2         | 2         | 113         | 0                    | 1         | 0         | 0        | 1         | 5                   | 185         | 2         | 4         | 196         | 322         | 6             |
| <b>Total</b>       | <b>8</b>             | <b>3</b> | <b>33</b>  | <b>0</b> | <b>44</b>  | <b>14</b>           | <b>488</b>  | <b>20</b> | <b>10</b> | <b>532</b>  | <b>2</b>             | <b>3</b>  | <b>18</b> | <b>0</b> | <b>23</b> | <b>29</b>           | <b>652</b>  | <b>19</b> | <b>10</b> | <b>710</b>  | <b>1309</b> | <b>20</b>     |
| 17:00              | 7                    | 1        | 11         | 0        | 19         | 5                   | 134         | 4         | 1         | 144         | 1                    | 0         | 8         | 0        | 9         | 4                   | 214         | 7         | 3         | 228         | 400         | 4             |
| 17:15              | 4                    | 0        | 7          | 0        | 11         | 3                   | 145         | 9         | 1         | 158         | 4                    | 1         | 3         | 0        | 8         | 7                   | 215         | 5         | 1         | 228         | 405         | 2             |
| 17:30              | 0                    | 0        | 11         | 0        | 11         | 3                   | 124         | 7         | 0         | 134         | 1                    | 1         | 5         | 0        | 7         | 10                  | 226         | 8         | 3         | 247         | 399         | 3             |
| 17:45              | 4                    | 0        | 6          | 0        | 10         | 3                   | 142         | 9         | 1         | 155         | 4                    | 1         | 3         | 0        | 8         | 11                  | 214         | 5         | 0         | 230         | 403         | 1             |
| <b>Total</b>       | <b>15</b>            | <b>1</b> | <b>35</b>  | <b>0</b> | <b>51</b>  | <b>14</b>           | <b>545</b>  | <b>29</b> | <b>3</b>  | <b>591</b>  | <b>10</b>            | <b>3</b>  | <b>19</b> | <b>0</b> | <b>32</b> | <b>32</b>           | <b>869</b>  | <b>25</b> | <b>7</b>  | <b>933</b>  | <b>1607</b> | <b>10</b>     |
| <b>Grand Total</b> | <b>29</b>            | <b>9</b> | <b>105</b> | <b>0</b> | <b>143</b> | <b>56</b>           | <b>1856</b> | <b>66</b> | <b>28</b> | <b>2006</b> | <b>15</b>            | <b>12</b> | <b>45</b> | <b>0</b> | <b>72</b> | <b>93</b>           | <b>2618</b> | <b>70</b> | <b>33</b> | <b>2814</b> | <b>5035</b> | <b>61</b>     |
| Apprch %           | 20.3%                | 6.3%     | 73.4%      | 0.0%     |            | 2.8%                | 92.5%       | 3.3%      | 1.4%      |             | 20.8%                | 16.7%     | 62.5%     | 0.0%     |           | 3.3%                | 93.0%       | 2.5%      | 1.2%      |             |             |               |
| Total %            | 0.6%                 | 0.2%     | 2.1%       | 0.0%     | 2.8%       | 1.1%                | 36.9%       | 1.3%      | 0.6%      | 39.8%       | 0.3%                 | 0.2%      | 0.9%      | 0.0%     | 1.4%      | 1.8%                | 52.0%       | 1.4%      | 0.7%      | 55.9%       | 100.0%      |               |

| AM PEAK HOUR                                      | Valley St Southbound |          |           |          |           | Grand Ave Westbound |            |          |          |            | Valley St Northbound |          |          |          |           | Grand Ave Eastbound |            |           |           |            | Total       |  |
|---|----------------------|----------|-----------|----------|-----------|---------------------|------------|----------|----------|------------|----------------------|----------|----------|----------|-----------|---------------------|------------|-----------|-----------|------------|-------------|--|
| START TIME  | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT    | UTURNS   | APP.TOTAL  | LEFT                 | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT     | UTURNS    | APP.TOTAL  |             |  |
| Peak Hour Analysis From 08:00 to 09:00            |                      |          |           |          |           |                     |            |          |          |            |                      |          |          |          |           |                     |            |           |           |            |             |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                      |          |           |          |           |                     |            |          |          |            |                      |          |          |          |           |                     |            |           |           |            |             |  |
| 8:00  | 1                    | 0        | 5         | 0        | 6         | 3                   | 120        | 3        | 1        | 127        | 1                    | 0        | 3        | 0        | 4         | 6                   | 169        | 3         | 3         | 181        | 318         |  |
| 8:15  | 0                    | 2        | 6         | 0        | 8         | 3                   | 102        | 2        | 0        | 107        | 0                    | 1        | 1        | 0        | 2         | 3                   | 148        | 3         | 5         | 159        | 276         |  |
| 8:30  | 0                    | 1        | 4         | 0        | 5         | 4                   | 125        | 4        | 3        | 136        | 0                    | 3        | 0        | 0        | 3         | 3                   | 175        | 5         | 1         | 184        | 328         |  |
| 8:45  | 2                    | 1        | 5         | 0        | 8         | 3                   | 105        | 0        | 3        | 111        | 1                    | 0        | 4        | 0        | 5         | 5                   | 164        | 4         | 1         | 174        | 298         |  |
| <b>Total Volume</b>                               | <b>3</b>             | <b>4</b> | <b>20</b> | <b>0</b> | <b>27</b> | <b>13</b>           | <b>452</b> | <b>9</b> | <b>7</b> | <b>481</b> | <b>2</b>             | <b>4</b> | <b>8</b> | <b>0</b> | <b>14</b> | <b>17</b>           | <b>656</b> | <b>15</b> | <b>10</b> | <b>698</b> | <b>1220</b> |  |
| % App Total                                       | 11.1%                | 14.8%    | 74.1%     | 0.0%     |           | 2.7%                | 94.0%      | 1.9%     | 1.5%     |            | 14.3%                | 28.6%    | 57.1%    | 0.0%     |           | 2.4%                | 94.0%      | 2.1%      | 1.4%      |            |             |  |
| PHF   | .375                 | .500     | .833      | .000     | .844      | .813                | .904       | .563     | .583     | .884       | .500                 | .333     | .500     | .000     | .700      | .708                | .937       | .750      | .500      | .948       | .930        |  |

| PM PEAK HOUR                                      | Valley St Southbound |          |           |          |           | Grand Ave Westbound |            |           |          |            | Valley St Northbound |          |           |          |           | Grand Ave Eastbound |            |           |          |            | Total       |  |
|---|----------------------|----------|-----------|----------|-----------|---------------------|------------|-----------|----------|------------|----------------------|----------|-----------|----------|-----------|---------------------|------------|-----------|----------|------------|-------------|--|
| START TIME  | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT     | UTURNS   | APP.TOTAL  |             |  |
| Peak Hour Analysis From 17:00 to 18:00            |                      |          |           |          |           |                     |            |           |          |            |                      |          |           |          |           |                     |            |           |          |            |             |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                      |          |           |          |           |                     |            |           |          |            |                      |          |           |          |           |                     |            |           |          |            |             |  |
| 17:00   | 7                    | 1        | 11        | 0        | 19        | 5                   | 134        | 4         | 1        | 144        | 1                    | 0        | 8         | 0        | 9         | 4                   | 214        | 7         | 3        | 228        | 400         |  |
| 17:15   | 4                    | 0        | 7         | 0        | 11        | 3                   | 145        | 9         | 1        | 158        | 4                    | 1        | 3         | 0        | 8         | 7                   | 215        | 5         | 1        | 228        | 405         |  |
| 17:30   | 0                    | 0        | 11        | 0        | 11        | 3                   | 124        | 7         | 0        | 134        | 1                    | 1        | 5         | 0        | 7         | 10                  | 226        | 8         | 3        | 247        | 399         |  |
| 17:45   | 4                    | 0        | 6         | 0        | 10        | 3                   | 142        | 9         | 1        | 155        | 4                    | 1        | 3         | 0        | 8         | 11                  | 214        | 5         | 0        | 230        | 403         |  |
| <b>Total Volume</b>                               | <b>15</b>            | <b>1</b> | <b>35</b> | <b>0</b> | <b>51</b> | <b>14</b>           | <b>545</b> | <b>29</b> | <b>3</b> | <b>591</b> | <b>10</b>            | <b>3</b> | <b>19</b> | <b>0</b> | <b>32</b> | <b>32</b>           | <b>869</b> | <b>25</b> | <b>7</b> | <b>933</b> | <b>1607</b> |  |
| % App Total                                       | 29.4%                | 2.0%     | 68.6%     | 0.0%     |           | 2.4%                | 92.2%      | 4.9%      | 0.5%     |            | 31.3%                | 9.4%     | 59.4%     | 0.0%     |           | 3.4%                | 93.1%      | 2.7%      | 0.8%     |            |             |  |
| PHF   | .536                 | .250     | .795      | .000     | .671      | .700                | .940       | .806      | .750     | .935       | .625                 | .750     | .594      | .000     | .889      | .727                | .961       | .781      | .583     | .944       | .992        |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-004 Valley St & Grand Ave

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Valley St Southbound |          |          |            |           | Grand Ave Westbound |           |          |            |           | Valley St Northbound |          |          |            |           | Grand Ave Eastbound |            |          |           |            | Total      | Peds Total |
|--------------------|----------------------|----------|----------|------------|-----------|---------------------|-----------|----------|------------|-----------|----------------------|----------|----------|------------|-----------|---------------------|------------|----------|-----------|------------|------------|------------|
|                    | LEFT                 | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                 | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  |            |            |
| 7:00               | 0                    | 1        | 0        | 5          | 1         | 0                   | 1         | 0        | 1          | 1         | 0                    | 0        | 0        | 0          | 0         | 1                   | 1          | 0        | 2         | 2          | 4          | 8          |
| 7:15               | 1                    | 0        | 0        | 6          | 1         | 0                   | 1         | 0        | 10         | 1         | 0                    | 0        | 0        | 7          | 0         | 1                   | 6          | 0        | 6         | 7          | 9          | 29         |
| 7:30               | 0                    | 1        | 0        | 7          | 1         | 0                   | 1         | 0        | 7          | 1         | 0                    | 0        | 1        | 12         | 0         | 2                   | 0          | 0        | 5         | 2          | 4          | 31         |
| 7:45               | 0                    | 0        | 0        | 6          | 0         | 1                   | 7         | 0        | 13         | 8         | 0                    | 0        | 0        | 10         | 0         | 7                   | 0          | 0        | 3         | 7          | 15         | 32         |
| <b>Total</b>       | <b>1</b>             | <b>2</b> | <b>0</b> | <b>24</b>  | <b>3</b>  | <b>1</b>            | <b>10</b> | <b>0</b> | <b>31</b>  | <b>11</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>29</b>  | <b>0</b>  | <b>2</b>            | <b>16</b>  | <b>0</b> | <b>16</b> | <b>18</b>  | <b>32</b>  | <b>100</b> |
| 8:00               | 1                    | 0        | 0        | 4          | 1         | 0                   | 1         | 0        | 12         | 1         | 0                    | 0        | 0        | 7          | 0         | 0                   | 3          | 0        | 8         | 3          | 5          | 31         |
| 8:15               | 0                    | 0        | 0        | 4          | 0         | 0                   | 10        | 1        | 8          | 11        | 0                    | 0        | 0        | 9          | 0         | 0                   | 11         | 0        | 4         | 11         | 22         | 25         |
| 8:30               | 0                    | 0        | 0        | 8          | 0         | 1                   | 1         | 1        | 7          | 3         | 0                    | 0        | 0        | 8          | 0         | 0                   | 8          | 2        | 9         | 10         | 13         | 32         |
| 8:45               | 2                    | 0        | 0        | 4          | 2         | 0                   | 2         | 0        | 8          | 2         | 0                    | 0        | 0        | 12         | 0         | 0                   | 3          | 1        | 1         | 4          | 8          | 25         |
| <b>Total</b>       | <b>3</b>             | <b>0</b> | <b>0</b> | <b>20</b>  | <b>3</b>  | <b>1</b>            | <b>14</b> | <b>2</b> | <b>35</b>  | <b>17</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>36</b>  | <b>0</b>  | <b>0</b>            | <b>25</b>  | <b>3</b> | <b>22</b> | <b>28</b>  | <b>48</b>  | <b>113</b> |
| 16:00              | 0                    | 0        | 0        | 15         | 0         | 0                   | 4         | 0        | 3          | 4         | 0                    | 0        | 0        | 13         | 0         | 1                   | 4          | 0        | 7         | 5          | 9          | 38         |
| 16:15              | 0                    | 0        | 0        | 13         | 0         | 0                   | 9         | 0        | 7          | 9         | 0                    | 0        | 0        | 9          | 0         | 0                   | 5          | 0        | 5         | 5          | 14         | 34         |
| 16:30              | 0                    | 0        | 0        | 11         | 0         | 0                   | 5         | 1        | 10         | 6         | 1                    | 2        | 0        | 17         | 3         | 0                   | 7          | 0        | 4         | 7          | 16         | 42         |
| 16:45              | 0                    | 0        | 0        | 20         | 0         | 2                   | 7         | 0        | 7          | 9         | 0                    | 0        | 0        | 12         | 0         | 0                   | 15         | 0        | 5         | 15         | 24         | 44         |
| <b>Total</b>       | <b>0</b>             | <b>0</b> | <b>0</b> | <b>59</b>  | <b>0</b>  | <b>2</b>            | <b>25</b> | <b>1</b> | <b>27</b>  | <b>28</b> | <b>1</b>             | <b>2</b> | <b>0</b> | <b>51</b>  | <b>3</b>  | <b>1</b>            | <b>31</b>  | <b>0</b> | <b>21</b> | <b>32</b>  | <b>63</b>  | <b>158</b> |
| 17:00              | 0                    | 1        | 0        | 19         | 1         | 0                   | 6         | 0        | 9          | 6         | 1                    | 0        | 0        | 12         | 1         | 0                   | 14         | 0        | 10        | 14         | 22         | 50         |
| 17:15              | 0                    | 0        | 0        | 12         | 0         | 1                   | 8         | 0        | 4          | 9         | 0                    | 0        | 0        | 12         | 0         | 0                   | 6          | 0        | 4         | 6          | 15         | 32         |
| 17:30              | 1                    | 1        | 0        | 11         | 2         | 0                   | 12        | 1        | 13         | 13        | 0                    | 1        | 0        | 18         | 1         | 0                   | 11         | 0        | 12        | 11         | 27         | 54         |
| 17:45              | 0                    | 0        | 0        | 12         | 0         | 1                   | 9         | 0        | 4          | 10        | 0                    | 0        | 0        | 15         | 0         | 0                   | 4          | 0        | 4         | 4          | 14         | 35         |
| <b>Total</b>       | <b>1</b>             | <b>2</b> | <b>0</b> | <b>54</b>  | <b>3</b>  | <b>2</b>            | <b>35</b> | <b>1</b> | <b>30</b>  | <b>38</b> | <b>1</b>             | <b>1</b> | <b>0</b> | <b>57</b>  | <b>2</b>  | <b>0</b>            | <b>35</b>  | <b>0</b> | <b>30</b> | <b>35</b>  | <b>78</b>  | <b>171</b> |
| <b>Grand Total</b> | <b>5</b>             | <b>4</b> | <b>0</b> | <b>157</b> | <b>9</b>  | <b>6</b>            | <b>84</b> | <b>4</b> | <b>123</b> | <b>94</b> | <b>2</b>             | <b>3</b> | <b>0</b> | <b>173</b> | <b>5</b>  | <b>3</b>            | <b>107</b> | <b>3</b> | <b>89</b> | <b>113</b> | <b>221</b> | <b>542</b> |
| Apprch %           | 55.6%                | 44.4%    | 0.0%     |            |           | 6.4%                | 89.4%     | 4.3%     |            |           | 40.0%                | 60.0%    | 0.0%     |            |           | 2.7%                | 94.7%      | 2.7%     |           |            |            |            |
| Total %            | 2.3%                 | 1.8%     | 0.0%     |            | 4.1%      | 2.7%                | 38.0%     | 1.8%     |            | 42.5%     | 0.9%                 | 1.4%     | 0.0%     |            | 2.3%      | 1.4%                | 48.4%      | 1.4%     |           | 51.1%      | 100.0%     |            |

| AM PEAK HOUR                                      | Valley St Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | Valley St Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                 | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                 | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                      |      |       |      |           |                     |       |       |      |           |                      |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                      |      |       |      |           |                     |       |       |      |           |                      |      |       |      |           |                     |       |       |      |           |       |
| 8:00  | 1                    | 0    | 0     | 4    | 1         | 0                   | 1     | 0     | 12   | 1         | 0                    | 0    | 0     | 7    | 0         | 0                   | 3     | 0     | 8    | 3         | 5     |
| 8:15  | 0                    | 0    | 0     | 4    | 0         | 0                   | 10    | 1     | 8    | 11        | 0                    | 0    | 0     | 9    | 0         | 0                   | 11    | 0     | 4    | 11        | 22    |
| 8:30  | 0                    | 0    | 0     | 8    | 0         | 1                   | 1     | 1     | 7    | 3         | 0                    | 0    | 0     | 8    | 0         | 0                   | 8     | 2     | 9    | 10        | 13    |
| 8:45  | 2                    | 0    | 0     | 4    | 2         | 0                   | 2     | 0     | 8    | 2         | 0                    | 0    | 0     | 12   | 0         | 0                   | 3     | 1     | 1    | 4         | 8     |
| Total Volume                                      | 3                    | 0    | 0     | 20   | 3         | 1                   | 14    | 2     | 35   | 17        | 0                    | 0    | 0     | 36   | 0         | 0                   | 25    | 3     | 22   | 28        | 48    |
| % App Total                                       | 100.0%               | 0.0% | 0.0%  |      |           | 5.9%                | 82.4% | 11.8% |      |           | 0.0%                 | 0.0% | 0.0%  |      |           | 0.0%                | 89.3% | 10.7% |      |           |       |
| PHF   | .375                 | .000 | .000  |      | .375      | .250                | .350  | .500  |      | .386      | .000                 | .000 | .000  |      | .000      | .000                | .568  | .375  |      | .636      | .545  |

| PM PEAK HOUR                                      | Valley St Southbound |       |       |      |           | Grand Ave Westbound |       |       |      |           | Valley St Northbound |       |       |      |           | Grand Ave Eastbound |        |       |      |           | Total |
|---|----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|----------------------|-------|-------|------|-----------|---------------------|--------|-------|------|-----------|-------|
| START TIME  | LEFT                 | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                 | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |                      |       |       |      |           |                     |       |       |      |           |                      |       |       |      |           |                     |        |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                      |       |       |      |           |                     |       |       |      |           |                      |       |       |      |           |                     |        |       |      |           |       |
| 17:00   | 0                    | 1     | 0     | 19   | 1         | 0                   | 6     | 0     | 9    | 6         | 1                    | 0     | 0     | 12   | 1         | 0                   | 14     | 0     | 10   | 14        | 22    |
| 17:15   | 0                    | 0     | 0     | 12   | 0         | 1                   | 8     | 0     | 4    | 9         | 0                    | 0     | 0     | 12   | 0         | 0                   | 6      | 0     | 4    | 6         | 15    |
| 17:30   | 1                    | 1     | 0     | 11   | 2         | 0                   | 12    | 1     | 13   | 13        | 0                    | 1     | 0     | 18   | 1         | 0                   | 11     | 0     | 12   | 11        | 27    |
| 17:45   | 0                    | 0     | 0     | 12   | 0         | 1                   | 9     | 0     | 4    | 10        | 0                    | 0     | 0     | 15   | 0         | 0                   | 4      | 0     | 4    | 4         | 14    |
| Total Volume                                      | 1                    | 2     | 0     | 54   | 3         | 2                   | 35    | 1     | 30   | 38        | 1                    | 1     | 0     | 57   | 2         | 0                   | 35     | 0     | 30   | 35        | 78    |
| % App Total                                       | 33.3%                | 66.7% | 0.0%  |      |           | 5.3%                | 92.1% | 2.6%  |      |           | 50.0%                | 50.0% | 0.0%  |      |           | 0.0%                | 100.0% | 0.0%  |      |           |       |
| PHF   | .250                 | .500  | .000  |      | .375      | .500                | .729  | .250  |      | .731      | .250                 | .250  | .000  |      | .500      | .000                | .625   | .000  |      | .625      | .722  |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-008 Broadway & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

## Unshifted Count = All Vehicles & Turns

| START TIME         | Broadway Southbound |              |              |             |              | Grand Avenue Westbound |              |             |             |              | Broadway Northbound |              |              |             |              | Grand Avenue Eastbound |              |              |             |              | Total         | UtURNS Total |
|--------------------|---------------------|--------------|--------------|-------------|--------------|------------------------|--------------|-------------|-------------|--------------|---------------------|--------------|--------------|-------------|--------------|------------------------|--------------|--------------|-------------|--------------|---------------|--------------|
|                    | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL    | LEFT                   | THRU         | RIGHT       | UTURNS      | APP.TOTAL    | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL    | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL    |               |              |
| 7:00               | 3                   | 29           | 18           | 0           | 50           | 13                     | 42           | 3           | 0           | 58           | 10                  | 43           | 17           | 0           | 70           | 6                      | 68           | 9            | 1           | 84           | 262           | 1            |
| 7:15               | 8                   | 39           | 18           | 0           | 65           | 13                     | 65           | 8           | 0           | 86           | 18                  | 51           | 24           | 1           | 94           | 5                      | 100          | 11           | 2           | 118          | 363           | 3            |
| 7:30               | 7                   | 42           | 12           | 0           | 61           | 12                     | 86           | 2           | 0           | 100          | 16                  | 50           | 26           | 1           | 93           | 6                      | 103          | 9            | 4           | 122          | 376           | 5            |
| 7:45               | 3                   | 59           | 9            | 0           | 71           | 31                     | 73           | 4           | 0           | 108          | 20                  | 74           | 36           | 0           | 130          | 10                     | 114          | 12           | 3           | 139          | 448           | 3            |
| <b>Total</b>       | <b>21</b>           | <b>169</b>   | <b>57</b>    | <b>0</b>    | <b>247</b>   | <b>69</b>              | <b>266</b>   | <b>17</b>   | <b>0</b>    | <b>352</b>   | <b>64</b>           | <b>218</b>   | <b>103</b>   | <b>2</b>    | <b>387</b>   | <b>27</b>              | <b>385</b>   | <b>41</b>    | <b>10</b>   | <b>463</b>   | <b>1449</b>   | <b>12</b>    |
| 8:00               | 6                   | 58           | 15           | 0           | 79           | 31                     | 87           | 2           | 0           | 120          | 25                  | 101          | 22           | 0           | 148          | 11                     | 133          | 17           | 3           | 164          | 511           | 3            |
| 8:15               | 8                   | 89           | 11           | 0           | 108          | 21                     | 79           | 7           | 0           | 107          | 18                  | 82           | 38           | 0           | 138          | 10                     | 124          | 22           | 2           | 158          | 511           | 2            |
| 8:30               | 12                  | 79           | 13           | 0           | 104          | 25                     | 103          | 9           | 0           | 137          | 24                  | 90           | 37           | 0           | 151          | 18                     | 142          | 22           | 1           | 183          | 575           | 1            |
| 8:45               | 24                  | 81           | 16           | 0           | 121          | 24                     | 75           | 7           | 0           | 106          | 32                  | 80           | 27           | 0           | 139          | 11                     | 130          | 14           | 1           | 156          | 522           | 1            |
| <b>Total</b>       | <b>50</b>           | <b>307</b>   | <b>55</b>    | <b>0</b>    | <b>412</b>   | <b>101</b>             | <b>344</b>   | <b>25</b>   | <b>0</b>    | <b>470</b>   | <b>99</b>           | <b>353</b>   | <b>124</b>   | <b>0</b>    | <b>576</b>   | <b>50</b>              | <b>529</b>   | <b>75</b>    | <b>7</b>    | <b>661</b>   | <b>2119</b>   | <b>7</b>     |
| 16:00              | 18                  | 80           | 32           | 0           | 130          | 14                     | 67           | 9           | 0           | 90           | 50                  | 140          | 37           | 0           | 227          | 22                     | 100          | 16           | 1           | 139          | 586           | 1            |
| 16:15              | 23                  | 76           | 23           | 0           | 122          | 10                     | 75           | 10          | 0           | 95           | 49                  | 143          | 41           | 0           | 233          | 15                     | 127          | 23           | 0           | 165          | 615           | 0            |
| 16:30              | 10                  | 93           | 20           | 0           | 123          | 18                     | 86           | 6           | 0           | 110          | 48                  | 155          | 36           | 0           | 239          | 18                     | 145          | 14           | 2           | 179          | 651           | 2            |
| 16:45              | 15                  | 84           | 20           | 0           | 119          | 9                      | 62           | 11          | 0           | 82           | 61                  | 141          | 47           | 0           | 249          | 23                     | 150          | 16           | 0           | 189          | 639           | 0            |
| <b>Total</b>       | <b>66</b>           | <b>333</b>   | <b>95</b>    | <b>0</b>    | <b>494</b>   | <b>51</b>              | <b>290</b>   | <b>36</b>   | <b>0</b>    | <b>377</b>   | <b>208</b>          | <b>579</b>   | <b>161</b>   | <b>0</b>    | <b>948</b>   | <b>78</b>              | <b>522</b>   | <b>69</b>    | <b>3</b>    | <b>672</b>   | <b>2491</b>   | <b>3</b>     |
| 17:00              | 22                  | 90           | 30           | 0           | 142          | 18                     | 89           | 10          | 0           | 117          | 43                  | 173          | 43           | 0           | 259          | 40                     | 186          | 23           | 2           | 251          | 769           | 2            |
| 17:15              | 19                  | 72           | 34           | 0           | 125          | 14                     | 83           | 17          | 0           | 114          | 52                  | 180          | 46           | 0           | 278          | 24                     | 169          | 15           | 0           | 208          | 725           | 0            |
| 17:30              | 29                  | 79           | 29           | 0           | 137          | 16                     | 83           | 10          | 0           | 109          | 53                  | 150          | 49           | 0           | 252          | 32                     | 161          | 30           | 1           | 224          | 722           | 1            |
| 17:45              | 19                  | 96           | 47           | 1           | 163          | 15                     | 92           | 16          | 0           | 123          | 44                  | 147          | 54           | 0           | 245          | 26                     | 182          | 28           | 1           | 237          | 768           | 2            |
| <b>Total</b>       | <b>89</b>           | <b>337</b>   | <b>140</b>   | <b>1</b>    | <b>567</b>   | <b>63</b>              | <b>347</b>   | <b>53</b>   | <b>0</b>    | <b>463</b>   | <b>192</b>          | <b>650</b>   | <b>192</b>   | <b>0</b>    | <b>1034</b>  | <b>122</b>             | <b>698</b>   | <b>96</b>    | <b>4</b>    | <b>920</b>   | <b>2984</b>   | <b>5</b>     |
| <b>Grand Total</b> | <b>226</b>          | <b>1146</b>  | <b>347</b>   | <b>1</b>    | <b>1720</b>  | <b>284</b>             | <b>1247</b>  | <b>131</b>  | <b>0</b>    | <b>1662</b>  | <b>563</b>          | <b>1800</b>  | <b>580</b>   | <b>2</b>    | <b>2945</b>  | <b>277</b>             | <b>2134</b>  | <b>281</b>   | <b>24</b>   | <b>2716</b>  | <b>9043</b>   | <b>27</b>    |
| <b>Apprch %</b>    | <b>13.1%</b>        | <b>66.6%</b> | <b>20.2%</b> | <b>0.1%</b> |              | <b>17.1%</b>           | <b>75.0%</b> | <b>7.9%</b> | <b>0.0%</b> |              | <b>19.1%</b>        | <b>61.1%</b> | <b>19.7%</b> | <b>0.1%</b> |              | <b>10.2%</b>           | <b>78.6%</b> | <b>10.3%</b> | <b>0.9%</b> |              |               |              |
| <b>Total %</b>     | <b>2.5%</b>         | <b>12.7%</b> | <b>3.8%</b>  | <b>0.0%</b> | <b>19.0%</b> | <b>3.1%</b>            | <b>13.8%</b> | <b>1.4%</b> | <b>0.0%</b> | <b>18.4%</b> | <b>6.2%</b>         | <b>19.9%</b> | <b>6.4%</b>  | <b>0.0%</b> | <b>32.6%</b> | <b>3.1%</b>            | <b>23.6%</b> | <b>3.1%</b>  | <b>0.3%</b> | <b>30.0%</b> | <b>100.0%</b> |              |

| AM PEAK HOUR                                      | Broadway Southbound |              |              |             |             | Grand Avenue Westbound |              |             |             |             | Broadway Northbound |              |              |             |             | Grand Avenue Eastbound |              |              |             |             | Total       |
|---|---------------------|--------------|--------------|-------------|-------------|------------------------|--------------|-------------|-------------|-------------|---------------------|--------------|--------------|-------------|-------------|------------------------|--------------|--------------|-------------|-------------|-------------|
|   | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL   |             |
| Peak Hour Analysis From 08:00 to 09:00            |                     |              |              |             |             |                        |              |             |             |             |                     |              |              |             |             |                        |              |              |             |             |             |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |              |              |             |             |                        |              |             |             |             |                     |              |              |             |             |                        |              |              |             |             |             |
| 8:00  | 6                   | 58           | 15           | 0           | 79          | 31                     | 87           | 2           | 0           | 120         | 25                  | 101          | 22           | 0           | 148         | 11                     | 133          | 17           | 3           | 164         | 511         |
| 8:15  | 8                   | 89           | 11           | 0           | 108         | 21                     | 79           | 7           | 0           | 107         | 18                  | 82           | 38           | 0           | 138         | 10                     | 124          | 22           | 2           | 158         | 511         |
| 8:30  | 12                  | 79           | 13           | 0           | 104         | 25                     | 103          | 9           | 0           | 137         | 24                  | 90           | 37           | 0           | 151         | 18                     | 142          | 22           | 1           | 183         | 575         |
| 8:45  | 24                  | 81           | 16           | 0           | 121         | 24                     | 75           | 7           | 0           | 106         | 32                  | 80           | 27           | 0           | 139         | 11                     | 130          | 14           | 1           | 156         | 522         |
| <b>Total Volume</b>                               | <b>50</b>           | <b>307</b>   | <b>55</b>    | <b>0</b>    | <b>412</b>  | <b>101</b>             | <b>344</b>   | <b>25</b>   | <b>0</b>    | <b>470</b>  | <b>99</b>           | <b>353</b>   | <b>124</b>   | <b>0</b>    | <b>576</b>  | <b>50</b>              | <b>529</b>   | <b>75</b>    | <b>7</b>    | <b>661</b>  | <b>2119</b> |
| <b>% App Total</b>                                | <b>12.1%</b>        | <b>74.5%</b> | <b>13.3%</b> | <b>0.0%</b> |             | <b>21.5%</b>           | <b>73.2%</b> | <b>5.3%</b> | <b>0.0%</b> |             | <b>17.2%</b>        | <b>61.3%</b> | <b>21.5%</b> | <b>0.0%</b> |             | <b>7.6%</b>            | <b>80.0%</b> | <b>11.3%</b> | <b>1.1%</b> |             |             |
| <b>PHF</b>  | <b>.521</b>         | <b>.862</b>  | <b>.859</b>  | <b>.000</b> | <b>.851</b> | <b>.815</b>            | <b>.835</b>  | <b>.694</b> | <b>.000</b> | <b>.858</b> | <b>.773</b>         | <b>.874</b>  | <b>.816</b>  | <b>.000</b> | <b>.954</b> | <b>.694</b>            | <b>.931</b>  | <b>.852</b>  | <b>.583</b> | <b>.903</b> | <b>.921</b> |

| PM PEAK HOUR                                      | Broadway Southbound |              |              |             |             | Grand Avenue Westbound |              |              |             |             | Broadway Northbound |              |              |             |             | Grand Avenue Eastbound |              |              |             |             | Total       |
|---|---------------------|--------------|--------------|-------------|-------------|------------------------|--------------|--------------|-------------|-------------|---------------------|--------------|--------------|-------------|-------------|------------------------|--------------|--------------|-------------|-------------|-------------|
|   | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL   |             |
| Peak Hour Analysis From 17:00 to 18:00            |                     |              |              |             |             |                        |              |              |             |             |                     |              |              |             |             |                        |              |              |             |             |             |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |              |              |             |             |                        |              |              |             |             |                     |              |              |             |             |                        |              |              |             |             |             |
| 17:00   | 22                  | 90           | 30           | 0           | 142         | 18                     | 89           | 10           | 0           | 117         | 43                  | 173          | 43           | 0           | 259         | 40                     | 186          | 23           | 2           | 251         | 769         |
| 17:15   | 19                  | 72           | 34           | 0           | 125         | 14                     | 83           | 17           | 0           | 114         | 52                  | 180          | 46           | 0           | 278         | 24                     | 169          | 15           | 0           | 208         | 725         |
| 17:30   | 29                  | 79           | 29           | 0           | 137         | 16                     | 83           | 10           | 0           | 109         | 53                  | 150          | 49           | 0           | 252         | 32                     | 161          | 30           | 1           | 224         | 722         |
| 17:45   | 19                  | 96           | 47           | 1           | 163         | 15                     | 92           | 16           | 0           | 123         | 44                  | 147          | 54           | 0           | 245         | 26                     | 182          | 28           | 1           | 237         | 768         |
| <b>Total Volume</b>                               | <b>89</b>           | <b>337</b>   | <b>140</b>   | <b>1</b>    | <b>567</b>  | <b>63</b>              | <b>347</b>   | <b>53</b>    | <b>0</b>    | <b>463</b>  | <b>192</b>          | <b>650</b>   | <b>192</b>   | <b>0</b>    | <b>1034</b> | <b>122</b>             | <b>698</b>   | <b>96</b>    | <b>4</b>    | <b>920</b>  | <b>2984</b> |
| <b>% App Total</b>                                | <b>15.7%</b>        | <b>59.4%</b> | <b>24.7%</b> | <b>0.2%</b> |             | <b>13.6%</b>           | <b>74.9%</b> | <b>11.4%</b> | <b>0.0%</b> |             | <b>18.6%</b>        | <b>62.9%</b> | <b>18.6%</b> | <b>0.0%</b> |             | <b>13.3%</b>           | <b>75.9%</b> | <b>10.4%</b> | <b>0.4%</b> |             |             |
| <b>PHF</b>  | <b>.767</b>         | <b>.878</b>  | <b>.745</b>  | <b>.250</b> | <b>.870</b> | <b>.875</b>            | <b>.943</b>  | <b>.779</b>  | <b>.000</b> | <b>.941</b> | <b>.906</b>         | <b>.903</b>  | <b>.889</b>  | <b>.000</b> | <b>.930</b> | <b>.763</b>            | <b>.938</b>  | <b>.800</b>  | <b>.500</b> | <b>.916</b> | <b>.970</b> |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-008 Broadway & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

## Bank 1 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |            |            | Grand Avenue Westbound |           |           |            |            | Broadway Northbound |            |           |            |            | Grand Avenue Eastbound |           |          |            |           | Total      | Peds Total  |
|--------------------|---------------------|------------|----------|------------|------------|------------------------|-----------|-----------|------------|------------|---------------------|------------|-----------|------------|------------|------------------------|-----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                   | THRU      | RIGHT     | PEDS       | APP.TOTAL  | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                   | THRU      | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                   | 3          | 0        | 13         | 3          | 0                      | 0         | 1         | 19         | 1          | 1                   | 1          | 0         | 14         | 2          | 1                      | 3         | 0        | 18         | 4         | 10         | 64          |
| 7:15               | 0                   | 8          | 0        | 5          | 8          | 3                      | 1         | 3         | 15         | 7          | 1                   | 0          | 0         | 8          | 1          | 0                      | 1         | 0        | 25         | 1         | 17         | 53          |
| 7:30               | 1                   | 8          | 0        | 10         | 9          | 1                      | 1         | 1         | 26         | 3          | 2                   | 4          | 0         | 7          | 6          | 0                      | 1         | 0        | 23         | 1         | 19         | 66          |
| 7:45               | 1                   | 12         | 0        | 20         | 13         | 1                      | 4         | 0         | 25         | 5          | 1                   | 1          | 0         | 18         | 2          | 0                      | 4         | 1        | 41         | 5         | 25         | 104         |
| <b>Total</b>       | <b>2</b>            | <b>31</b>  | <b>0</b> | <b>48</b>  | <b>33</b>  | <b>5</b>               | <b>6</b>  | <b>5</b>  | <b>85</b>  | <b>16</b>  | <b>5</b>            | <b>6</b>   | <b>0</b>  | <b>47</b>  | <b>11</b>  | <b>1</b>               | <b>9</b>  | <b>1</b> | <b>107</b> | <b>11</b> | <b>71</b>  | <b>287</b>  |
| 8:00               | 0                   | 14         | 1        | 15         | 15         | 3                      | 2         | 3         | 34         | 8          | 0                   | 0          | 0         | 13         | 0          | 1                      | 3         | 1        | 48         | 5         | 28         | 110         |
| 8:15               | 2                   | 10         | 0        | 11         | 12         | 7                      | 7         | 5         | 49         | 19         | 1                   | 4          | 0         | 14         | 5          | 1                      | 4         | 0        | 55         | 5         | 41         | 129         |
| 8:30               | 0                   | 13         | 0        | 10         | 13         | 2                      | 2         | 3         | 33         | 7          | 0                   | 5          | 0         | 16         | 5          | 2                      | 1         | 0        | 44         | 3         | 28         | 103         |
| 8:45               | 1                   | 18         | 0        | 17         | 19         | 4                      | 4         | 9         | 43         | 17         | 2                   | 1          | 0         | 23         | 3          | 1                      | 4         | 1        | 54         | 6         | 45         | 137         |
| <b>Total</b>       | <b>3</b>            | <b>55</b>  | <b>1</b> | <b>53</b>  | <b>59</b>  | <b>16</b>              | <b>15</b> | <b>20</b> | <b>159</b> | <b>51</b>  | <b>3</b>            | <b>10</b>  | <b>0</b>  | <b>66</b>  | <b>13</b>  | <b>5</b>               | <b>12</b> | <b>2</b> | <b>201</b> | <b>19</b> | <b>142</b> | <b>479</b>  |
| 16:00              | 0                   | 2          | 0        | 16         | 2          | 1                      | 5         | 0         | 48         | 6          | 1                   | 10         | 2         | 43         | 13         | 1                      | 4         | 0        | 63         | 5         | 26         | 170         |
| 16:15              | 1                   | 6          | 0        | 16         | 7          | 2                      | 1         | 0         | 35         | 3          | 0                   | 10         | 0         | 26         | 10         | 1                      | 4         | 0        | 38         | 5         | 25         | 115         |
| 16:30              | 0                   | 4          | 0        | 22         | 4          | 0                      | 8         | 1         | 40         | 9          | 0                   | 15         | 2         | 33         | 17         | 0                      | 4         | 1        | 48         | 5         | 35         | 143         |
| 16:45              | 1                   | 9          | 0        | 14         | 10         | 0                      | 5         | 0         | 44         | 5          | 3                   | 24         | 3         | 36         | 30         | 0                      | 7         | 0        | 54         | 7         | 52         | 148         |
| <b>Total</b>       | <b>2</b>            | <b>21</b>  | <b>0</b> | <b>68</b>  | <b>23</b>  | <b>3</b>               | <b>19</b> | <b>1</b>  | <b>167</b> | <b>23</b>  | <b>4</b>            | <b>59</b>  | <b>7</b>  | <b>138</b> | <b>70</b>  | <b>2</b>               | <b>19</b> | <b>1</b> | <b>203</b> | <b>22</b> | <b>138</b> | <b>576</b>  |
| 17:00              | 0                   | 4          | 1        | 19         | 5          | 1                      | 5         | 1         | 54         | 7          | 1                   | 24         | 0         | 38         | 25         | 1                      | 6         | 0        | 64         | 7         | 44         | 175         |
| 17:15              | 0                   | 4          | 0        | 24         | 4          | 0                      | 4         | 0         | 43         | 4          | 3                   | 34         | 1         | 40         | 38         | 2                      | 8         | 0        | 53         | 10        | 56         | 160         |
| 17:30              | 0                   | 2          | 0        | 29         | 2          | 0                      | 6         | 0         | 54         | 6          | 0                   | 26         | 1         | 28         | 27         | 1                      | 5         | 0        | 73         | 6         | 41         | 184         |
| 17:45              | 1                   | 2          | 0        | 46         | 3          | 0                      | 5         | 0         | 53         | 5          | 0                   | 27         | 2         | 38         | 29         | 1                      | 8         | 0        | 61         | 9         | 46         | 198         |
| <b>Total</b>       | <b>1</b>            | <b>12</b>  | <b>1</b> | <b>118</b> | <b>14</b>  | <b>1</b>               | <b>20</b> | <b>1</b>  | <b>204</b> | <b>22</b>  | <b>4</b>            | <b>111</b> | <b>4</b>  | <b>144</b> | <b>119</b> | <b>5</b>               | <b>27</b> | <b>0</b> | <b>251</b> | <b>32</b> | <b>187</b> | <b>717</b>  |
| <b>Grand Total</b> | <b>8</b>            | <b>119</b> | <b>2</b> | <b>287</b> | <b>129</b> | <b>25</b>              | <b>60</b> | <b>27</b> | <b>615</b> | <b>112</b> | <b>16</b>           | <b>186</b> | <b>11</b> | <b>395</b> | <b>213</b> | <b>13</b>              | <b>67</b> | <b>4</b> | <b>762</b> | <b>84</b> | <b>538</b> | <b>2059</b> |
| Apprch %           | 6.2%                | 92.2%      | 1.6%     |            |            | 22.3%                  | 53.6%     | 24.1%     |            |            | 7.5%                | 87.3%      | 5.2%      |            |            | 15.5%                  | 79.8%     | 4.8%     |            |           |            |             |
| Total %            | 1.5%                | 22.1%      | 0.4%     |            | 24.0%      | 4.6%                   | 11.2%     | 5.0%      |            | 20.8%      | 3.0%                | 34.6%      | 2.0%      |            | 39.6%      | 2.4%                   | 12.5%     | 0.7%     |            | 15.6%     |            | 100.0%      |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                        |       |       |      |           |                     |       |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                        |       |       |      |           |                     |       |       |      |           |                        |       |       |      |           |       |  |
| 8:00  | 0                   | 14    | 1     | 15   | 15        | 3                      | 2     | 3     | 34   | 8         | 0                   | 0     | 0     | 13   | 0         | 1                      | 3     | 1     | 48   | 5         | 28    |  |
| 8:15  | 2                   | 10    | 0     | 11   | 12        | 7                      | 7     | 5     | 49   | 19        | 1                   | 4     | 0     | 14   | 5         | 1                      | 4     | 0     | 55   | 5         | 41    |  |
| 8:30  | 0                   | 13    | 0     | 10   | 13        | 2                      | 2     | 3     | 33   | 7         | 0                   | 5     | 0     | 16   | 5         | 2                      | 1     | 0     | 44   | 3         | 28    |  |
| 8:45  | 1                   | 18    | 0     | 17   | 19        | 4                      | 4     | 9     | 43   | 17        | 2                   | 1     | 0     | 23   | 3         | 1                      | 4     | 1     | 54   | 6         | 45    |  |
| Total Volume                                      | 3                   | 55    | 1     | 53   | 59        | 16                     | 15    | 20    | 159  | 51        | 3                   | 10    | 0     | 66   | 13        | 5                      | 12    | 2     | 201  | 19        | 142   |  |
| % App Total                                       | 5.1%                | 93.2% | 1.7%  |      |           | 31.4%                  | 29.4% | 39.2% |      |           | 23.1%               | 76.9% | 0.0%  |      |           | 26.3%                  | 63.2% | 10.5% |      |           |       |  |
| PHF   | .375                | .764  | .250  |      | .776      | .571                   | .536  | .556  |      | .671      | .375                | .500  | .000  |      | .650      | .625                   | .750  | .500  |      | .792      | .789  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |      |           |                        |       |       |      |           |                     |       |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |      |           |                        |       |       |      |           |                     |       |       |      |           |                        |       |       |      |           |       |  |
| 17:00   | 0                   | 4     | 1     | 19   | 5         | 1                      | 5     | 1     | 54   | 7         | 1                   | 24    | 0     | 38   | 25        | 1                      | 6     | 0     | 64   | 7         | 44    |  |
| 17:15   | 0                   | 4     | 0     | 24   | 4         | 0                      | 4     | 0     | 43   | 4         | 3                   | 34    | 1     | 40   | 38        | 2                      | 8     | 0     | 53   | 10        | 56    |  |
| 17:30   | 0                   | 2     | 0     | 29   | 2         | 0                      | 6     | 0     | 54   | 6         | 0                   | 26    | 1     | 28   | 27        | 1                      | 5     | 0     | 73   | 6         | 41    |  |
| 17:45   | 1                   | 2     | 0     | 46   | 3         | 0                      | 5     | 0     | 53   | 5         | 0                   | 27    | 2     | 38   | 29        | 1                      | 8     | 0     | 61   | 9         | 46    |  |
| Total Volume                                      | 1                   | 12    | 1     | 118  | 14        | 1                      | 20    | 1     | 204  | 22        | 4                   | 111   | 4     | 144  | 119       | 5                      | 27    | 0     | 251  | 32        | 187   |  |
| % App Total                                       | 7.1%                | 85.7% | 7.1%  |      |           | 4.5%                   | 90.9% | 4.5%  |      |           | 3.4%                | 93.3% | 3.4%  |      |           | 15.6%                  | 84.4% | 0.0%  |      |           |       |  |
| PHF   | .250                | .750  | .250  |      | .700      | .250                   | .833  | .250  |      | .786      | .333                | .816  | .500  |      | .783      | .625                   | .844  | .000  |      | .800      | .835  |  |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-009 Webster Street & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Utturns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Webster Street Southbound |              |              |             |              | Grand Avenue Westbound |              |             |             |              | Webster Street Northbound |             |             |             |             | Grand Avenue Eastbound |              |              |             |              | Total         | Utturns Total |
|--------------------|---------------------------|--------------|--------------|-------------|--------------|------------------------|--------------|-------------|-------------|--------------|---------------------------|-------------|-------------|-------------|-------------|------------------------|--------------|--------------|-------------|--------------|---------------|---------------|
|                    | LEFT                      | THRU         | RIGHT        | UTURNS      | APP.TOTAL    | LEFT                   | THRU         | RIGHT       | UTURNS      | APP.TOTAL    | LEFT                      | THRU        | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL    |               |               |
| 7:00               | 4                         | 13           | 4            | 0           | 21           | 12                     | 55           | 7           | 2           | 76           | 0                         | 0           | 0           | 0           | 0           | 11                     | 37           | 37           | 0           | 85           | 182           | 2             |
| 7:15               | 4                         | 23           | 6            | 0           | 33           | 13                     | 74           | 3           | 0           | 90           | 0                         | 0           | 0           | 0           | 0           | 7                      | 68           | 52           | 0           | 127          | 250           | 0             |
| 7:30               | 7                         | 34           | 6            | 0           | 47           | 28                     | 96           | 6           | 0           | 130          | 0                         | 0           | 0           | 0           | 0           | 16                     | 64           | 48           | 0           | 128          | 305           | 0             |
| 7:45               | 4                         | 35           | 4            | 0           | 43           | 23                     | 114          | 4           | 0           | 141          | 0                         | 0           | 0           | 0           | 0           | 10                     | 82           | 69           | 0           | 161          | 345           | 0             |
| <b>Total</b>       | <b>19</b>                 | <b>105</b>   | <b>20</b>    | <b>0</b>    | <b>144</b>   | <b>76</b>              | <b>339</b>   | <b>20</b>   | <b>2</b>    | <b>437</b>   | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>44</b>              | <b>251</b>   | <b>206</b>   | <b>0</b>    | <b>501</b>   | <b>1082</b>   | <b>2</b>      |
| 8:00               | 8                         | 29           | 7            | 0           | 44           | 24                     | 112          | 9           | 0           | 145          | 0                         | 0           | 0           | 0           | 0           | 17                     | 90           | 51           | 1           | 159          | 348           | 1             |
| 8:15               | 9                         | 45           | 2            | 0           | 56           | 32                     | 106          | 11          | 0           | 149          | 0                         | 0           | 0           | 0           | 0           | 14                     | 79           | 63           | 0           | 156          | 361           | 0             |
| 8:30               | 10                        | 54           | 6            | 0           | 70           | 34                     | 131          | 11          | 1           | 177          | 0                         | 0           | 0           | 0           | 0           | 15                     | 98           | 92           | 0           | 205          | 452           | 1             |
| 8:45               | 6                         | 59           | 6            | 0           | 71           | 28                     | 108          | 17          | 2           | 155          | 0                         | 0           | 0           | 0           | 0           | 12                     | 81           | 77           | 0           | 170          | 396           | 2             |
| <b>Total</b>       | <b>33</b>                 | <b>187</b>   | <b>21</b>    | <b>0</b>    | <b>241</b>   | <b>118</b>             | <b>457</b>   | <b>48</b>   | <b>3</b>    | <b>626</b>   | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>58</b>              | <b>348</b>   | <b>283</b>   | <b>1</b>    | <b>690</b>   | <b>1557</b>   | <b>4</b>      |
| 16:00              | 12                        | 39           | 15           | 0           | 66           | 22                     | 74           | 3           | 2           | 101          | 0                         | 0           | 0           | 0           | 0           | 10                     | 110          | 43           | 0           | 163          | 330           | 2             |
| 16:15              | 8                         | 41           | 19           | 0           | 68           | 23                     | 84           | 5           | 1           | 113          | 0                         | 0           | 0           | 0           | 0           | 10                     | 123          | 49           | 0           | 182          | 363           | 1             |
| 16:30              | 12                        | 49           | 15           | 0           | 76           | 18                     | 90           | 5           | 0           | 113          | 0                         | 0           | 0           | 0           | 0           | 4                      | 145          | 37           | 0           | 186          | 375           | 0             |
| 16:45              | 20                        | 51           | 23           | 0           | 94           | 28                     | 63           | 4           | 0           | 95           | 0                         | 0           | 0           | 0           | 0           | 8                      | 164          | 48           | 0           | 220          | 409           | 0             |
| <b>Total</b>       | <b>52</b>                 | <b>180</b>   | <b>72</b>    | <b>0</b>    | <b>304</b>   | <b>91</b>              | <b>311</b>   | <b>17</b>   | <b>3</b>    | <b>422</b>   | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>32</b>              | <b>542</b>   | <b>177</b>   | <b>0</b>    | <b>751</b>   | <b>1477</b>   | <b>3</b>      |
| 17:00              | 16                        | 52           | 26           | 0           | 94           | 29                     | 93           | 6           | 0           | 128          | 0                         | 0           | 0           | 0           | 0           | 8                      | 171          | 55           | 1           | 235          | 457           | 1             |
| 17:15              | 16                        | 50           | 12           | 0           | 78           | 36                     | 98           | 4           | 1           | 139          | 0                         | 0           | 0           | 0           | 0           | 11                     | 192          | 37           | 0           | 240          | 457           | 1             |
| 17:30              | 22                        | 52           | 25           | 0           | 99           | 23                     | 89           | 11          | 0           | 123          | 0                         | 0           | 0           | 0           | 0           | 7                      | 179          | 38           | 0           | 224          | 446           | 0             |
| 17:45              | 19                        | 49           | 17           | 0           | 85           | 17                     | 99           | 10          | 0           | 126          | 0                         | 0           | 0           | 0           | 0           | 8                      | 204          | 51           | 0           | 263          | 474           | 0             |
| <b>Total</b>       | <b>73</b>                 | <b>203</b>   | <b>80</b>    | <b>0</b>    | <b>356</b>   | <b>105</b>             | <b>379</b>   | <b>31</b>   | <b>1</b>    | <b>516</b>   | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>34</b>              | <b>746</b>   | <b>181</b>   | <b>1</b>    | <b>962</b>   | <b>1834</b>   | <b>2</b>      |
| <b>Grand Total</b> | <b>177</b>                | <b>675</b>   | <b>193</b>   | <b>0</b>    | <b>1045</b>  | <b>390</b>             | <b>1486</b>  | <b>116</b>  | <b>9</b>    | <b>2001</b>  | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>168</b>             | <b>1887</b>  | <b>847</b>   | <b>2</b>    | <b>2904</b>  | <b>5950</b>   | <b>11</b>     |
| <b>Apprch %</b>    | <b>16.9%</b>              | <b>64.6%</b> | <b>18.5%</b> | <b>0.0%</b> | <b>17.6%</b> | <b>19.5%</b>           | <b>74.3%</b> | <b>5.8%</b> | <b>0.4%</b> | <b>33.6%</b> | <b>0.0%</b>               | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> | <b>5.8%</b>            | <b>65.0%</b> | <b>29.2%</b> | <b>0.1%</b> | <b>48.8%</b> | <b>100.0%</b> |               |
| <b>Total %</b>     | <b>3.0%</b>               | <b>11.3%</b> | <b>3.2%</b>  | <b>0.0%</b> | <b>17.6%</b> | <b>6.6%</b>            | <b>25.0%</b> | <b>1.9%</b> | <b>0.2%</b> | <b>33.6%</b> | <b>0.0%</b>               | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> | <b>2.8%</b>            | <b>31.7%</b> | <b>14.2%</b> | <b>0.0%</b> | <b>48.8%</b> | <b>100.0%</b> |               |

| AM PEAK HOUR                                      | Webster Street Southbound |              |             |             |             | Grand Avenue Westbound |              |             |             |             | Webster Street Northbound |             |             |             |             | Grand Avenue Eastbound |              |              |             |             | Total       |
|---|---------------------------|--------------|-------------|-------------|-------------|------------------------|--------------|-------------|-------------|-------------|---------------------------|-------------|-------------|-------------|-------------|------------------------|--------------|--------------|-------------|-------------|-------------|
|   | LEFT                      | THRU         | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                      | THRU        | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL   |             |
| Peak Hour Analysis From 08:00 to 09:00            |                           |              |             |             |             |                        |              |             |             |             |                           |             |             |             |             |                        |              |              |             |             |             |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |              |             |             |             |                        |              |             |             |             |                           |             |             |             |             |                        |              |              |             |             |             |
| 8:00  | 8                         | 29           | 7           | 0           | 44          | 24                     | 112          | 9           | 0           | 145         | 0                         | 0           | 0           | 0           | 0           | 17                     | 90           | 51           | 1           | 159         | 348         |
| 8:15  | 9                         | 45           | 2           | 0           | 56          | 32                     | 106          | 11          | 0           | 149         | 0                         | 0           | 0           | 0           | 0           | 14                     | 79           | 63           | 0           | 156         | 361         |
| 8:30  | 10                        | 54           | 6           | 0           | 70          | 34                     | 131          | 11          | 1           | 177         | 0                         | 0           | 0           | 0           | 0           | 15                     | 98           | 92           | 0           | 205         | 452         |
| 8:45  | 6                         | 59           | 6           | 0           | 71          | 28                     | 108          | 17          | 2           | 155         | 0                         | 0           | 0           | 0           | 0           | 12                     | 81           | 77           | 0           | 170         | 396         |
| <b>Total Volume</b>                               | <b>33</b>                 | <b>187</b>   | <b>21</b>   | <b>0</b>    | <b>241</b>  | <b>118</b>             | <b>457</b>   | <b>48</b>   | <b>3</b>    | <b>626</b>  | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>58</b>              | <b>348</b>   | <b>283</b>   | <b>1</b>    | <b>690</b>  | <b>1557</b> |
| <b>% App Total</b>                                | <b>13.7%</b>              | <b>77.6%</b> | <b>8.7%</b> | <b>0.0%</b> |             | <b>18.8%</b>           | <b>73.0%</b> | <b>7.7%</b> | <b>0.5%</b> |             | <b>0.0%</b>               | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> |             | <b>8.4%</b>            | <b>50.4%</b> | <b>41.0%</b> | <b>0.1%</b> |             |             |
| <b>PHF</b>  | <b>.825</b>               | <b>.792</b>  | <b>.750</b> | <b>.000</b> | <b>.849</b> | <b>.868</b>            | <b>.872</b>  | <b>.706</b> | <b>.375</b> | <b>.884</b> | <b>.000</b>               | <b>.000</b> | <b>.000</b> | <b>.000</b> | <b>.000</b> | <b>.853</b>            | <b>.888</b>  | <b>.769</b>  | <b>.250</b> | <b>.841</b> | <b>.861</b> |

| PM PEAK HOUR                                      | Webster Street Southbound |              |              |             |             | Grand Avenue Westbound |              |             |             |             | Webster Street Northbound |             |             |             |             | Grand Avenue Eastbound |              |              |             |             | Total       |
|---|---------------------------|--------------|--------------|-------------|-------------|------------------------|--------------|-------------|-------------|-------------|---------------------------|-------------|-------------|-------------|-------------|------------------------|--------------|--------------|-------------|-------------|-------------|
|   | LEFT                      | THRU         | RIGHT        | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                      | THRU        | RIGHT       | UTURNS      | APP.TOTAL   | LEFT                   | THRU         | RIGHT        | UTURNS      | APP.TOTAL   |             |
| Peak Hour Analysis From 17:00 to 18:00            |                           |              |              |             |             |                        |              |             |             |             |                           |             |             |             |             |                        |              |              |             |             |             |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |              |              |             |             |                        |              |             |             |             |                           |             |             |             |             |                        |              |              |             |             |             |
| 17:00   | 16                        | 52           | 26           | 0           | 94          | 29                     | 93           | 6           | 0           | 128         | 0                         | 0           | 0           | 0           | 0           | 8                      | 171          | 55           | 1           | 235         | 457         |
| 17:15   | 16                        | 50           | 12           | 0           | 78          | 36                     | 98           | 4           | 1           | 139         | 0                         | 0           | 0           | 0           | 0           | 11                     | 192          | 37           | 0           | 240         | 457         |
| 17:30   | 22                        | 52           | 25           | 0           | 99          | 23                     | 89           | 11          | 0           | 123         | 0                         | 0           | 0           | 0           | 0           | 7                      | 179          | 38           | 0           | 224         | 446         |
| 17:45   | 19                        | 49           | 17           | 0           | 85          | 17                     | 99           | 10          | 0           | 126         | 0                         | 0           | 0           | 0           | 0           | 8                      | 204          | 51           | 0           | 263         | 474         |
| <b>Total Volume</b>                               | <b>73</b>                 | <b>203</b>   | <b>80</b>    | <b>0</b>    | <b>356</b>  | <b>105</b>             | <b>379</b>   | <b>31</b>   | <b>1</b>    | <b>516</b>  | <b>0</b>                  | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>0</b>    | <b>34</b>              | <b>746</b>   | <b>181</b>   | <b>1</b>    | <b>962</b>  | <b>1834</b> |
| <b>% App Total</b>                                | <b>20.5%</b>              | <b>57.0%</b> | <b>22.5%</b> | <b>0.0%</b> |             | <b>20.3%</b>           | <b>73.4%</b> | <b>6.0%</b> | <b>0.2%</b> |             | <b>0.0%</b>               | <b>0.0%</b> | <b>0.0%</b> | <b>0.0%</b> |             | <b>3.5%</b>            | <b>77.5%</b> | <b>18.8%</b> | <b>0.1%</b> |             |             |
| <b>PHF</b>  | <b>.830</b>               | <b>.976</b>  | <b>.769</b>  | <b>.000</b> | <b>.899</b> | <b>.729</b>            | <b>.957</b>  | <b>.705</b> | <b>.250</b> | <b>.928</b> | <b>.000</b>               | <b>.000</b> | <b>.000</b> | <b>.000</b> | <b>.000</b> | <b>.773</b>            | <b>.914</b>  | <b>.823</b>  | <b>.250</b> | <b>.914</b> | <b>.967</b> |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-009 Webster Street & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Bank 1 Count = Bikes & Peds

| START TIME         | Webster Street Southbound |            |          |            |            | Grand Avenue Westbound |            |           |            |            | Webster Street Northbound |           |          |            |           | Grand Avenue Eastbound |           |           |            |           | Total      | Peds Total  |
|--------------------|---------------------------|------------|----------|------------|------------|------------------------|------------|-----------|------------|------------|---------------------------|-----------|----------|------------|-----------|------------------------|-----------|-----------|------------|-----------|------------|-------------|
|                    | LEFT                      | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                   | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                      | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                   | THRU      | RIGHT     | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                         | 4          | 0        | 16         | 4          | 2                      | 2          | 0         | 20         | 4          | 0                         | 0         | 0        | 15         | 0         | 1                      | 0         | 2         | 27         | 3         | 11         | 78          |
| 7:15               | 0                         | 2          | 1        | 10         | 3          | 5                      | 6          | 1         | 18         | 12         | 0                         | 2         | 0        | 27         | 2         | 0                      | 0         | 1         | 28         | 1         | 18         | 83          |
| 7:30               | 0                         | 3          | 0        | 15         | 3          | 6                      | 4          | 0         | 27         | 10         | 0                         | 0         | 0        | 33         | 0         | 0                      | 2         | 0         | 36         | 2         | 15         | 111         |
| 7:45               | 1                         | 11         | 2        | 23         | 14         | 8                      | 5          | 0         | 30         | 13         | 0                         | 0         | 0        | 39         | 0         | 2                      | 2         | 1         | 45         | 5         | 32         | 137         |
| <b>Total</b>       | <b>1</b>                  | <b>20</b>  | <b>3</b> | <b>64</b>  | <b>24</b>  | <b>21</b>              | <b>17</b>  | <b>1</b>  | <b>95</b>  | <b>39</b>  | <b>0</b>                  | <b>2</b>  | <b>0</b> | <b>114</b> | <b>2</b>  | <b>3</b>               | <b>4</b>  | <b>4</b>  | <b>136</b> | <b>11</b> | <b>76</b>  | <b>409</b>  |
| 8:00               | 0                         | 6          | 0        | 26         | 6          | 7                      | 7          | 2         | 27         | 16         | 0                         | 1         | 0        | 35         | 1         | 1                      | 3         | 1         | 52         | 5         | 28         | 140         |
| 8:15               | 0                         | 17         | 0        | 22         | 17         | 12                     | 17         | 1         | 36         | 30         | 0                         | 0         | 0        | 37         | 0         | 0                      | 3         | 2         | 54         | 5         | 52         | 149         |
| 8:30               | 0                         | 17         | 1        | 18         | 18         | 4                      | 11         | 0         | 27         | 15         | 0                         | 0         | 0        | 40         | 0         | 0                      | 0         | 3         | 49         | 3         | 36         | 134         |
| 8:45               | 0                         | 24         | 0        | 21         | 24         | 13                     | 15         | 1         | 43         | 29         | 0                         | 0         | 0        | 51         | 0         | 0                      | 5         | 0         | 60         | 5         | 58         | 175         |
| <b>Total</b>       | <b>0</b>                  | <b>64</b>  | <b>1</b> | <b>87</b>  | <b>65</b>  | <b>36</b>              | <b>50</b>  | <b>4</b>  | <b>133</b> | <b>90</b>  | <b>0</b>                  | <b>1</b>  | <b>0</b> | <b>163</b> | <b>1</b>  | <b>1</b>               | <b>11</b> | <b>6</b>  | <b>215</b> | <b>18</b> | <b>174</b> | <b>598</b>  |
| 16:00              | 0                         | 1          | 0        | 8          | 1          | 0                      | 7          | 2         | 24         | 9          | 0                         | 1         | 2        | 35         | 3         | 0                      | 4         | 2         | 35         | 6         | 19         | 102         |
| 16:15              | 0                         | 3          | 0        | 23         | 3          | 1                      | 2          | 0         | 33         | 3          | 0                         | 0         | 0        | 44         | 0         | 0                      | 6         | 0         | 43         | 6         | 12         | 143         |
| 16:30              | 0                         | 1          | 0        | 22         | 1          | 0                      | 8          | 0         | 21         | 8          | 1                         | 3         | 0        | 30         | 4         | 0                      | 4         | 1         | 58         | 5         | 18         | 131         |
| 16:45              | 0                         | 5          | 0        | 13         | 5          | 1                      | 6          | 0         | 24         | 7          | 0                         | 1         | 1        | 33         | 2         | 0                      | 10        | 2         | 30         | 12        | 26         | 100         |
| <b>Total</b>       | <b>0</b>                  | <b>10</b>  | <b>0</b> | <b>66</b>  | <b>10</b>  | <b>2</b>               | <b>23</b>  | <b>2</b>  | <b>102</b> | <b>27</b>  | <b>1</b>                  | <b>5</b>  | <b>3</b> | <b>142</b> | <b>9</b>  | <b>0</b>               | <b>24</b> | <b>5</b>  | <b>166</b> | <b>29</b> | <b>75</b>  | <b>476</b>  |
| 17:00              | 0                         | 2          | 0        | 27         | 2          | 1                      | 5          | 1         | 33         | 7          | 0                         | 1         | 0        | 57         | 1         | 0                      | 6         | 1         | 66         | 7         | 17         | 183         |
| 17:15              | 1                         | 2          | 1        | 25         | 4          | 0                      | 4          | 1         | 23         | 5          | 0                         | 2         | 2        | 44         | 4         | 0                      | 7         | 1         | 53         | 8         | 21         | 145         |
| 17:30              | 0                         | 3          | 0        | 35         | 3          | 2                      | 4          | 1         | 29         | 7          | 1                         | 1         | 1        | 32         | 3         | 0                      | 4         | 1         | 67         | 5         | 18         | 163         |
| 17:45              | 0                         | 2          | 2        | 26         | 4          | 0                      | 4          | 0         | 29         | 4          | 0                         | 1         | 1        | 56         | 2         | 0                      | 9         | 3         | 67         | 12        | 22         | 178         |
| <b>Total</b>       | <b>1</b>                  | <b>9</b>   | <b>3</b> | <b>113</b> | <b>13</b>  | <b>3</b>               | <b>17</b>  | <b>3</b>  | <b>114</b> | <b>23</b>  | <b>1</b>                  | <b>5</b>  | <b>4</b> | <b>189</b> | <b>10</b> | <b>0</b>               | <b>26</b> | <b>6</b>  | <b>253</b> | <b>32</b> | <b>78</b>  | <b>669</b>  |
| <b>Grand Total</b> | <b>2</b>                  | <b>103</b> | <b>7</b> | <b>330</b> | <b>112</b> | <b>62</b>              | <b>107</b> | <b>10</b> | <b>444</b> | <b>179</b> | <b>2</b>                  | <b>13</b> | <b>7</b> | <b>608</b> | <b>22</b> | <b>4</b>               | <b>65</b> | <b>21</b> | <b>770</b> | <b>90</b> | <b>403</b> | <b>2152</b> |
| Apprch %           | 1.8%                      | 92.0%      | 6.3%     |            |            | 34.6%                  | 59.8%      | 5.6%      |            |            | 9.1%                      | 59.1%     | 31.8%    |            |           | 4.4%                   | 72.2%     | 23.3%     |            |           |            |             |
| Total %            | 0.5%                      | 25.6%      | 1.7%     |            | 27.8%      | 15.4%                  | 26.6%      | 2.5%      |            | 44.4%      | 0.5%                      | 3.2%      | 1.7%     |            | 5.5%      | 1.0%                   | 16.1%     | 5.2%      |            | 22.3%     | 100.0%     |             |

| AM PEAK HOUR                                      | Webster Street Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Webster Street Northbound |        |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|---------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|---------------------------|--------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                      | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                           |       |       |      |           |                        |       |       |      |           |                           |        |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |       |       |      |           |                        |       |       |      |           |                           |        |       |      |           |                        |       |       |      |           |       |  |
| 8:00  | 0                         | 6     | 0     | 26   | 6         | 7                      | 7     | 2     | 27   | 16        | 0                         | 1      | 0     | 35   | 1         | 1                      | 3     | 1     | 52   | 5         | 28    |  |
| 8:15  | 0                         | 17    | 0     | 22   | 17        | 12                     | 17    | 1     | 36   | 30        | 0                         | 0      | 0     | 37   | 0         | 0                      | 3     | 2     | 54   | 5         | 52    |  |
| 8:30  | 0                         | 17    | 1     | 18   | 18        | 4                      | 11    | 0     | 27   | 15        | 0                         | 0      | 0     | 40   | 0         | 0                      | 0     | 3     | 49   | 3         | 36    |  |
| 8:45  | 0                         | 24    | 0     | 21   | 24        | 13                     | 15    | 1     | 43   | 29        | 0                         | 0      | 0     | 51   | 0         | 0                      | 5     | 0     | 60   | 5         | 58    |  |
| Total Volume                                      | 0                         | 64    | 1     | 87   | 65        | 36                     | 50    | 4     | 133  | 90        | 0                         | 1      | 0     | 163  | 1         | 1                      | 11    | 6     | 215  | 18        | 174   |  |
| % App Total                                       | 0.0%                      | 98.5% | 1.5%  |      |           | 40.0%                  | 55.6% | 4.4%  |      |           | 0.0%                      | 100.0% | 0.0%  |      |           | 5.6%                   | 61.1% | 33.3% |      |           |       |  |
| PHF   | .000                      | .667  | .250  |      | .677      | .692                   | .735  | .500  |      | .750      | .000                      | .250   | .000  |      | .250      | .250                   | .550  | .500  |      | .900      | .750  |  |

| PM PEAK HOUR                                      | Webster Street Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Webster Street Northbound |       |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|---------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|---------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                      | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                           |       |       |      |           |                        |       |       |      |           |                           |       |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |       |       |      |           |                        |       |       |      |           |                           |       |       |      |           |                        |       |       |      |           |       |  |
| 17:00   | 0                         | 2     | 0     | 27   | 2         | 1                      | 5     | 1     | 33   | 7         | 0                         | 1     | 0     | 57   | 1         | 0                      | 6     | 1     | 66   | 7         | 17    |  |
| 17:15   | 1                         | 2     | 1     | 25   | 4         | 0                      | 4     | 1     | 23   | 5         | 0                         | 2     | 2     | 44   | 4         | 0                      | 7     | 1     | 53   | 8         | 21    |  |
| 17:30   | 0                         | 3     | 0     | 35   | 3         | 2                      | 4     | 1     | 29   | 7         | 1                         | 1     | 1     | 32   | 3         | 0                      | 4     | 1     | 67   | 5         | 18    |  |
| 17:45   | 0                         | 2     | 2     | 26   | 4         | 0                      | 4     | 0     | 29   | 4         | 0                         | 1     | 1     | 56   | 2         | 0                      | 9     | 3     | 67   | 12        | 22    |  |
| Total Volume                                      | 1                         | 9     | 3     | 113  | 13        | 3                      | 17    | 3     | 114  | 23        | 1                         | 5     | 4     | 189  | 10        | 0                      | 26    | 6     | 253  | 32        | 78    |  |
| % App Total                                       | 7.7%                      | 69.2% | 23.1% |      |           | 13.0%                  | 73.9% | 13.0% |      |           | 10.0%                     | 50.0% | 40.0% |      |           | 0.0%                   | 81.3% | 18.8% |      |           |       |  |
| PHF   | .250                      | .750  | .375  |      | .813      | .375                   | .850  | .750  |      | .821      | .250                      | .625  | .500  |      | .625      | .000                   | .722  | .500  |      | .667      | .886  |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-004 Valdez St & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Valdez St Southbound |          |            |          |            | Grand Ave Westbound |             |           |          |             | Valdez St Northbound |          |           |          |           | Grand Ave Eastbound |             |           |           |             | Total       | Utturns Total |
|--------------------|----------------------|----------|------------|----------|------------|---------------------|-------------|-----------|----------|-------------|----------------------|----------|-----------|----------|-----------|---------------------|-------------|-----------|-----------|-------------|-------------|---------------|
|                    | LEFT                 | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   |             |               |
| 7:00               | 4                    | 0        | 10         | 0        | 14         | 1                   | 67          | 2         | 0        | 70          | 1                    | 0        | 1         | 0        | 2         | 8                   | 45          | 0         | 1         | 54          | 140         | 1             |
| 7:15               | 2                    | 0        | 2          | 0        | 4          | 1                   | 99          | 3         | 1        | 104         | 2                    | 0        | 1         | 0        | 3         | 5                   | 45          | 1         | 0         | 51          | 162         | 1             |
| 7:30               | 4                    | 0        | 5          | 0        | 9          | 5                   | 95          | 6         | 1        | 107         | 1                    | 0        | 2         | 0        | 3         | 5                   | 59          | 1         | 1         | 66          | 185         | 2             |
| 7:45               | 2                    | 0        | 5          | 0        | 7          | 1                   | 144         | 6         | 1        | 152         | 3                    | 0        | 0         | 0        | 3         | 7                   | 65          | 0         | 1         | 73          | 235         | 2             |
| <b>Total</b>       | <b>12</b>            | <b>0</b> | <b>22</b>  | <b>0</b> | <b>34</b>  | <b>8</b>            | <b>405</b>  | <b>17</b> | <b>3</b> | <b>433</b>  | <b>7</b>             | <b>0</b> | <b>4</b>  | <b>0</b> | <b>11</b> | <b>25</b>           | <b>214</b>  | <b>2</b>  | <b>3</b>  | <b>244</b>  | <b>722</b>  | <b>6</b>      |
| 8:00               | 3                    | 0        | 8          | 0        | 11         | 0                   | 145         | 6         | 0        | 151         | 0                    | 0        | 0         | 0        | 0         | 4                   | 89          | 0         | 0         | 93          | 255         | 0             |
| 8:15               | 2                    | 0        | 9          | 0        | 11         | 4                   | 183         | 9         | 1        | 197         | 2                    | 1        | 0         | 0        | 3         | 7                   | 77          | 0         | 2         | 86          | 297         | 3             |
| 8:30               | 4                    | 0        | 8          | 0        | 12         | 5                   | 197         | 6         | 0        | 208         | 4                    | 0        | 3         | 0        | 7         | 11                  | 72          | 0         | 1         | 84          | 311         | 1             |
| 8:45               | 4                    | 0        | 13         | 0        | 17         | 1                   | 155         | 4         | 0        | 160         | 1                    | 0        | 0         | 0        | 1         | 15                  | 86          | 0         | 1         | 102         | 280         | 1             |
| <b>Total</b>       | <b>13</b>            | <b>0</b> | <b>38</b>  | <b>0</b> | <b>51</b>  | <b>10</b>           | <b>680</b>  | <b>25</b> | <b>1</b> | <b>716</b>  | <b>7</b>             | <b>1</b> | <b>3</b>  | <b>0</b> | <b>11</b> | <b>37</b>           | <b>324</b>  | <b>0</b>  | <b>4</b>  | <b>365</b>  | <b>1143</b> | <b>5</b>      |
| 16:00              | 10                   | 0        | 13         | 0        | 23         | 0                   | 89          | 4         | 0        | 93          | 0                    | 0        | 1         | 0        | 1         | 6                   | 132         | 1         | 0         | 139         | 256         | 0             |
| 16:15              | 12                   | 0        | 10         | 0        | 22         | 0                   | 82          | 4         | 0        | 86          | 0                    | 0        | 1         | 0        | 1         | 4                   | 145         | 1         | 0         | 150         | 259         | 0             |
| 16:30              | 14                   | 1        | 8          | 0        | 23         | 0                   | 95          | 5         | 1        | 101         | 0                    | 0        | 1         | 0        | 1         | 3                   | 150         | 0         | 2         | 155         | 280         | 3             |
| 16:45              | 8                    | 0        | 9          | 0        | 17         | 0                   | 84          | 3         | 0        | 87          | 0                    | 0        | 1         | 0        | 1         | 5                   | 151         | 1         | 1         | 158         | 263         | 1             |
| <b>Total</b>       | <b>44</b>            | <b>1</b> | <b>40</b>  | <b>0</b> | <b>85</b>  | <b>0</b>            | <b>350</b>  | <b>16</b> | <b>1</b> | <b>367</b>  | <b>0</b>             | <b>0</b> | <b>4</b>  | <b>0</b> | <b>4</b>  | <b>18</b>           | <b>578</b>  | <b>3</b>  | <b>3</b>  | <b>602</b>  | <b>1058</b> | <b>4</b>      |
| 17:00              | 21                   | 0        | 17         | 0        | 38         | 1                   | 107         | 6         | 1        | 115         | 1                    | 0        | 2         | 0        | 3         | 10                  | 197         | 2         | 0         | 209         | 365         | 1             |
| 17:15              | 21                   | 0        | 20         | 0        | 41         | 1                   | 114         | 4         | 1        | 120         | 0                    | 1        | 0         | 0        | 1         | 5                   | 217         | 0         | 2         | 224         | 386         | 3             |
| 17:30              | 16                   | 0        | 12         | 0        | 28         | 0                   | 94          | 4         | 0        | 98          | 1                    | 0        | 1         | 0        | 2         | 8                   | 188         | 2         | 0         | 198         | 326         | 0             |
| 17:45              | 20                   | 0        | 10         | 0        | 30         | 1                   | 127         | 9         | 0        | 137         | 1                    | 1        | 1         | 0        | 3         | 7                   | 205         | 1         | 1         | 214         | 384         | 1             |
| <b>Total</b>       | <b>78</b>            | <b>0</b> | <b>59</b>  | <b>0</b> | <b>137</b> | <b>3</b>            | <b>442</b>  | <b>23</b> | <b>2</b> | <b>470</b>  | <b>3</b>             | <b>2</b> | <b>4</b>  | <b>0</b> | <b>9</b>  | <b>30</b>           | <b>807</b>  | <b>5</b>  | <b>3</b>  | <b>845</b>  | <b>1461</b> | <b>5</b>      |
| <b>Grand Total</b> | <b>147</b>           | <b>1</b> | <b>159</b> | <b>0</b> | <b>307</b> | <b>21</b>           | <b>1877</b> | <b>81</b> | <b>7</b> | <b>1986</b> | <b>17</b>            | <b>3</b> | <b>15</b> | <b>0</b> | <b>35</b> | <b>110</b>          | <b>1923</b> | <b>10</b> | <b>13</b> | <b>2056</b> | <b>4384</b> | <b>20</b>     |
| Apprch %           | 47.9%                | 0.3%     | 51.8%      | 0.0%     |            | 1.1%                | 94.5%       | 4.1%      | 0.4%     |             | 48.6%                | 8.6%     | 42.9%     | 0.0%     |           | 5.4%                | 93.5%       | 0.5%      | 0.6%      |             |             |               |
| Total %            | 3.4%                 | 0.0%     | 3.6%       | 0.0%     | 7.0%       | 0.5%                | 42.8%       | 1.8%      | 0.2%     | 45.3%       | 0.4%                 | 0.1%     | 0.3%      | 0.0%     | 0.8%      | 2.5%                | 43.9%       | 0.2%      | 0.3%      | 46.9%       | 100.0%      |               |

| AM PEAK HOUR                                      | Valdez St Southbound |          |           |          |           | Grand Ave Westbound |            |           |          |            | Valdez St Northbound |          |          |          |           | Grand Ave Eastbound |            |          |          |            | Total       |  |
|---|----------------------|----------|-----------|----------|-----------|---------------------|------------|-----------|----------|------------|----------------------|----------|----------|----------|-----------|---------------------|------------|----------|----------|------------|-------------|--|
|   | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                 | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT    | UTURNS   | APP.TOTAL  |             |  |
| Peak Hour Analysis From 08:00 to 09:00            |                      |          |           |          |           |                     |            |           |          |            |                      |          |          |          |           |                     |            |          |          |            |             |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                      |          |           |          |           |                     |            |           |          |            |                      |          |          |          |           |                     |            |          |          |            |             |  |
| 8:00  | 3                    | 0        | 8         | 0        | 11        | 0                   | 145        | 6         | 0        | 151        | 0                    | 0        | 0        | 0        | 0         | 4                   | 89         | 0        | 0        | 93         | 255         |  |
| 8:15  | 2                    | 0        | 9         | 0        | 11        | 4                   | 183        | 9         | 1        | 197        | 2                    | 1        | 0        | 0        | 3         | 7                   | 77         | 0        | 2        | 86         | 297         |  |
| 8:30  | 4                    | 0        | 8         | 0        | 12        | 5                   | 197        | 6         | 0        | 208        | 4                    | 0        | 3        | 0        | 7         | 11                  | 72         | 0        | 1        | 84         | 311         |  |
| 8:45  | 4                    | 0        | 13        | 0        | 17        | 1                   | 155        | 4         | 0        | 160        | 1                    | 0        | 0        | 0        | 1         | 15                  | 86         | 0        | 1        | 102        | 280         |  |
| <b>Total Volume</b>                               | <b>13</b>            | <b>0</b> | <b>38</b> | <b>0</b> | <b>51</b> | <b>10</b>           | <b>680</b> | <b>25</b> | <b>1</b> | <b>716</b> | <b>7</b>             | <b>1</b> | <b>3</b> | <b>0</b> | <b>11</b> | <b>37</b>           | <b>324</b> | <b>0</b> | <b>4</b> | <b>365</b> | <b>1143</b> |  |
| % App Total                                       | 25.5%                | 0.0%     | 74.5%     | 0.0%     |           | 1.4%                | 95.0%      | 3.5%      | 0.1%     |            | 63.6%                | 9.1%     | 27.3%    | 0.0%     |           | 10.1%               | 88.8%      | 0.0%     | 1.1%     |            |             |  |
| PHF   | .813                 | .000     | .731      | .000     | .750      | .500                | .863       | .694      | .250     | .861       | .438                 | .250     | .250     | .000     | .393      | .617                | .910       | .000     | .500     | .895       | .919        |  |

| PM PEAK HOUR                                      | Valdez St Southbound |          |           |          |            | Grand Ave Westbound |            |           |          |            | Valdez St Northbound |          |          |          |           | Grand Ave Eastbound |            |          |          |            | Total       |  |
|---|----------------------|----------|-----------|----------|------------|---------------------|------------|-----------|----------|------------|----------------------|----------|----------|----------|-----------|---------------------|------------|----------|----------|------------|-------------|--|
|   | LEFT                 | THRU     | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                | THRU       | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                 | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT    | UTURNS   | APP.TOTAL  |             |  |
| Peak Hour Analysis From 17:00 to 18:00            |                      |          |           |          |            |                     |            |           |          |            |                      |          |          |          |           |                     |            |          |          |            |             |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                      |          |           |          |            |                     |            |           |          |            |                      |          |          |          |           |                     |            |          |          |            |             |  |
| 17:00   | 21                   | 0        | 17        | 0        | 38         | 1                   | 107        | 6         | 1        | 115        | 1                    | 0        | 2        | 0        | 3         | 10                  | 197        | 2        | 0        | 209        | 365         |  |
| 17:15   | 21                   | 0        | 20        | 0        | 41         | 1                   | 114        | 4         | 1        | 120        | 0                    | 1        | 0        | 0        | 1         | 5                   | 217        | 0        | 2        | 224        | 386         |  |
| 17:30   | 16                   | 0        | 12        | 0        | 28         | 0                   | 94         | 4         | 0        | 98         | 1                    | 0        | 1        | 0        | 2         | 8                   | 188        | 2        | 0        | 198        | 326         |  |
| 17:45   | 20                   | 0        | 10        | 0        | 30         | 1                   | 127        | 9         | 0        | 137        | 1                    | 1        | 1        | 0        | 3         | 7                   | 205        | 1        | 1        | 214        | 384         |  |
| <b>Total Volume</b>                               | <b>78</b>            | <b>0</b> | <b>59</b> | <b>0</b> | <b>137</b> | <b>3</b>            | <b>442</b> | <b>23</b> | <b>2</b> | <b>470</b> | <b>3</b>             | <b>2</b> | <b>4</b> | <b>0</b> | <b>9</b>  | <b>30</b>           | <b>807</b> | <b>5</b> | <b>3</b> | <b>845</b> | <b>1461</b> |  |
| % App Total                                       | 56.9%                | 0.0%     | 43.1%     | 0.0%     |            | 0.6%                | 94.0%      | 4.9%      | 0.4%     |            | 33.3%                | 22.2%    | 44.4%    | 0.0%     |           | 3.6%                | 95.5%      | 0.6%     | 0.4%     |            |             |  |
| PHF   | .929                 | .000     | .738      | .000     | .835       | .750                | .870       | .639      | .500     | .858       | .750                 | .500     | .500     | .000     | .750      | .750                | .930       | .625     | .375     | .943       | .946        |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-004 Valdez St & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Valdez St Southbound |          |          |            |           | Grand Ave Westbound |            |           |            |            | Valdez St Northbound |           |          |           |           | Grand Ave Eastbound |           |            |            |           | Total      | Peds Total  |
|--------------------|----------------------|----------|----------|------------|-----------|---------------------|------------|-----------|------------|------------|----------------------|-----------|----------|-----------|-----------|---------------------|-----------|------------|------------|-----------|------------|-------------|
|                    | LEFT                 | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                 | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT                | THRU      | RIGHT      | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                    | 0        | 0        | 7          | 0         | 0                   | 4          | 1         | 15         | 5          | 0                    | 0         | 0        | 2         | 0         | 0                   | 1         | 0          | 6          | 1         | 6          | 30          |
| 7:15               | 0                    | 1        | 1        | 21         | 2         | 0                   | 4          | 0         | 14         | 4          | 0                    | 0         | 0        | 5         | 0         | 0                   | 1         | 13         | 1          | 7         | 53         |             |
| 7:30               | 0                    | 0        | 0        | 9          | 0         | 0                   | 7          | 0         | 14         | 7          | 0                    | 0         | 0        | 2         | 0         | 2                   | 0         | 18         | 2          | 9         | 43         |             |
| 7:45               | 1                    | 1        | 0        | 18         | 2         | 1                   | 9          | 0         | 27         | 10         | 0                    | 0         | 0        | 3         | 0         | 0                   | 1         | 16         | 1          | 13        | 64         |             |
| <b>Total</b>       | <b>1</b>             | <b>2</b> | <b>1</b> | <b>55</b>  | <b>4</b>  | <b>1</b>            | <b>24</b>  | <b>1</b>  | <b>70</b>  | <b>26</b>  | <b>0</b>             | <b>0</b>  | <b>0</b> | <b>12</b> | <b>0</b>  | <b>4</b>            | <b>1</b>  | <b>53</b>  | <b>5</b>   | <b>35</b> | <b>190</b> |             |
| 8:00               | 1                    | 1        | 0        | 24         | 2         | 3                   | 15         | 1         | 31         | 19         | 0                    | 0         | 0        | 7         | 0         | 1                   | 0         | 20         | 1          | 22        | 82         |             |
| 8:15               | 1                    | 0        | 0        | 36         | 1         | 0                   | 29         | 1         | 31         | 30         | 0                    | 0         | 0        | 5         | 0         | 0                   | 0         | 30         | 0          | 31        | 102        |             |
| 8:30               | 1                    | 0        | 1        | 35         | 2         | 0                   | 25         | 2         | 29         | 27         | 0                    | 0         | 0        | 1         | 0         | 0                   | 0         | 25         | 0          | 29        | 90         |             |
| 8:45               | 0                    | 1        | 0        | 27         | 1         | 1                   | 11         | 1         | 34         | 13         | 0                    | 0         | 0        | 8         | 0         | 1                   | 1         | 28         | 2          | 16        | 97         |             |
| <b>Total</b>       | <b>3</b>             | <b>2</b> | <b>1</b> | <b>122</b> | <b>6</b>  | <b>4</b>            | <b>80</b>  | <b>5</b>  | <b>125</b> | <b>89</b>  | <b>0</b>             | <b>0</b>  | <b>0</b> | <b>21</b> | <b>0</b>  | <b>2</b>            | <b>0</b>  | <b>103</b> | <b>3</b>   | <b>98</b> | <b>371</b> |             |
| 16:00              | 2                    | 0        | 0        | 18         | 2         | 0                   | 4          | 0         | 25         | 4          | 1                    | 1         | 0        | 8         | 2         | 0                   | 6         | 0          | 21         | 6         | 14         | 72          |
| 16:15              | 0                    | 0        | 1        | 21         | 1         | 0                   | 2          | 1         | 18         | 3          | 2                    | 2         | 0        | 0         | 4         | 1                   | 8         | 0          | 27         | 9         | 17         | 66          |
| 16:30              | 0                    | 0        | 0        | 41         | 0         | 0                   | 1          | 0         | 23         | 1          | 1                    | 2         | 2        | 4         | 5         | 0                   | 6         | 0          | 27         | 6         | 12         | 95          |
| 16:45              | 0                    | 0        | 1        | 33         | 1         | 0                   | 4          | 1         | 20         | 5          | 0                    | 2         | 0        | 4         | 2         | 0                   | 4         | 0          | 23         | 4         | 12         | 80          |
| <b>Total</b>       | <b>2</b>             | <b>0</b> | <b>2</b> | <b>113</b> | <b>4</b>  | <b>0</b>            | <b>11</b>  | <b>2</b>  | <b>86</b>  | <b>13</b>  | <b>4</b>             | <b>7</b>  | <b>2</b> | <b>16</b> | <b>13</b> | <b>1</b>            | <b>24</b> | <b>0</b>   | <b>98</b>  | <b>25</b> | <b>55</b>  | <b>313</b>  |
| 17:00              | 3                    | 1        | 0        | 27         | 4         | 0                   | 2          | 0         | 24         | 2          | 2                    | 1         | 0        | 4         | 3         | 0                   | 6         | 0          | 39         | 6         | 15         | 94          |
| 17:15              | 0                    | 1        | 0        | 32         | 1         | 0                   | 5          | 2         | 13         | 7          | 0                    | 1         | 0        | 1         | 1         | 0                   | 13        | 0          | 28         | 13        | 22         | 74          |
| 17:30              | 1                    | 1        | 0        | 36         | 2         | 0                   | 11         | 2         | 23         | 13         | 1                    | 0         | 0        | 5         | 1         | 0                   | 7         | 0          | 27         | 7         | 23         | 91          |
| 17:45              | 1                    | 0        | 0        | 38         | 1         | 0                   | 2          | 0         | 10         | 2          | 0                    | 1         | 1        | 4         | 2         | 0                   | 18        | 0          | 28         | 18        | 23         | 80          |
| <b>Total</b>       | <b>5</b>             | <b>3</b> | <b>0</b> | <b>133</b> | <b>8</b>  | <b>0</b>            | <b>20</b>  | <b>4</b>  | <b>70</b>  | <b>24</b>  | <b>3</b>             | <b>3</b>  | <b>1</b> | <b>14</b> | <b>7</b>  | <b>0</b>            | <b>44</b> | <b>0</b>   | <b>122</b> | <b>44</b> | <b>83</b>  | <b>339</b>  |
| <b>Grand Total</b> | <b>11</b>            | <b>7</b> | <b>4</b> | <b>423</b> | <b>22</b> | <b>5</b>            | <b>135</b> | <b>12</b> | <b>351</b> | <b>152</b> | <b>7</b>             | <b>10</b> | <b>3</b> | <b>63</b> | <b>20</b> | <b>2</b>            | <b>74</b> | <b>1</b>   | <b>376</b> | <b>77</b> | <b>271</b> | <b>1213</b> |
| Apprch %           | 50.0%                | 31.8%    | 18.2%    |            |           | 3.3%                | 88.8%      | 7.9%      |            |            | 35.0%                | 50.0%     | 15.0%    |           |           | 2.6%                | 96.1%     | 1.3%       |            |           |            |             |
| Total %            | 4.1%                 | 2.6%     | 1.5%     |            | 8.1%      | 1.8%                | 49.8%      | 4.4%      |            | 56.1%      | 2.6%                 | 3.7%      | 1.1%     |           | 7.4%      | 0.7%                | 27.3%     | 0.4%       |            | 28.4%     |            | 100.0%      |

| AM PEAK HOUR                                      | Valdez St Southbound |          |          |            |           | Grand Ave Westbound |           |          |            |           | Valdez St Northbound |          |          |           |           | Grand Ave Eastbound |          |          |            |           | Total     |
|---|----------------------|----------|----------|------------|-----------|---------------------|-----------|----------|------------|-----------|----------------------|----------|----------|-----------|-----------|---------------------|----------|----------|------------|-----------|-----------|
|   | LEFT                 | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                 | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT                | THRU     | RIGHT    | PEDS       | APP.TOTAL |           |
| Peak Hour Analysis From 08:00 to 09:00            |                      |          |          |            |           |                     |           |          |            |           |                      |          |          |           |           |                     |          |          |            |           |           |
| Peak Hour For Entire Intersection Begins at 08:00 |                      |          |          |            |           |                     |           |          |            |           |                      |          |          |           |           |                     |          |          |            |           |           |
| 8:00  | 1                    | 1        | 0        | 24         | 2         | 3                   | 15        | 1        | 31         | 19        | 0                    | 0        | 0        | 7         | 0         | 0                   | 1        | 0        | 20         | 1         | 22        |
| 8:15  | 1                    | 0        | 0        | 36         | 1         | 0                   | 29        | 1        | 31         | 30        | 0                    | 0        | 0        | 5         | 0         | 0                   | 0        | 0        | 30         | 0         | 31        |
| 8:30  | 1                    | 0        | 1        | 35         | 2         | 0                   | 25        | 2        | 29         | 27        | 0                    | 0        | 0        | 1         | 0         | 0                   | 0        | 25       | 0          | 29        | 90        |
| 8:45  | 0                    | 1        | 0        | 27         | 1         | 1                   | 11        | 1        | 34         | 13        | 0                    | 0        | 0        | 8         | 0         | 1                   | 1        | 28       | 2          | 16        | 97        |
| <b>Total Volume</b>                               | <b>3</b>             | <b>2</b> | <b>1</b> | <b>122</b> | <b>6</b>  | <b>4</b>            | <b>80</b> | <b>5</b> | <b>125</b> | <b>89</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>21</b> | <b>0</b>  | <b>1</b>            | <b>2</b> | <b>0</b> | <b>103</b> | <b>3</b>  | <b>98</b> |
| % App Total                                       | 50.0%                | 33.3%    | 16.7%    |            |           | 4.5%                | 89.9%     | 5.6%     |            |           | 0.0%                 | 0.0%     | 0.0%     |           |           | 33.3%               | 66.7%    | 0.0%     |            |           |           |
| PHF   | .750                 | .500     | .250     |            | .750      | .333                | .690      | .625     |            | .742      | .000                 | .000     | .000     |           | .000      | .250                | .500     | .000     |            | .375      | .790      |

| PM PEAK HOUR                                      | Valdez St Southbound |          |          |            |           | Grand Ave Westbound |           |          |           |           | Valdez St Northbound |          |          |           |           | Grand Ave Eastbound |           |          |            |           | Total     |
|---|----------------------|----------|----------|------------|-----------|---------------------|-----------|----------|-----------|-----------|----------------------|----------|----------|-----------|-----------|---------------------|-----------|----------|------------|-----------|-----------|
|   | LEFT                 | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT                 | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS       | APP.TOTAL |           |
| Peak Hour Analysis From 17:00 to 18:00            |                      |          |          |            |           |                     |           |          |           |           |                      |          |          |           |           |                     |           |          |            |           |           |
| Peak Hour For Entire Intersection Begins at 17:00 |                      |          |          |            |           |                     |           |          |           |           |                      |          |          |           |           |                     |           |          |            |           |           |
| 17:00   | 3                    | 1        | 0        | 27         | 4         | 0                   | 2         | 0        | 24        | 2         | 2                    | 1        | 0        | 4         | 3         | 0                   | 6         | 0        | 39         | 6         | 15        |
| 17:15   | 0                    | 1        | 0        | 32         | 1         | 0                   | 5         | 2        | 13        | 7         | 0                    | 1        | 0        | 1         | 1         | 0                   | 13        | 0        | 28         | 13        | 22        |
| 17:30   | 1                    | 1        | 0        | 36         | 2         | 0                   | 11        | 2        | 23        | 13        | 1                    | 0        | 0        | 5         | 1         | 0                   | 7         | 0        | 27         | 7         | 23        |
| 17:45   | 1                    | 0        | 0        | 38         | 1         | 0                   | 2         | 0        | 10        | 2         | 0                    | 1        | 1        | 4         | 2         | 0                   | 18        | 0        | 28         | 18        | 23        |
| <b>Total Volume</b>                               | <b>5</b>             | <b>3</b> | <b>0</b> | <b>133</b> | <b>8</b>  | <b>0</b>            | <b>20</b> | <b>4</b> | <b>70</b> | <b>24</b> | <b>3</b>             | <b>3</b> | <b>1</b> | <b>14</b> | <b>7</b>  | <b>0</b>            | <b>44</b> | <b>0</b> | <b>122</b> | <b>44</b> | <b>83</b> |
| % App Total                                       | 62.5%                | 37.5%    | 0.0%     |            |           | 0.0%                | 83.3%     | 16.7%    |           |           | 42.9%                | 42.9%    | 14.3%    |           |           | 0.0%                | 100.0%    | 0.0%     |            |           |           |
| PHF   | .417                 | .750     | .000     |            | .500      | .000                | .455      | .500     |           | .462      | .375                 | .750     | .250     |           | .583      | .000                | .611      | .000     |            | .611      | .902      |



# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-010 Harrison Street & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Utturns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Harrison Street Southbound |             |            |          |             | Grand Avenue Westbound |             |            |          |             | Harrison Street Northbound |             |             |          |             | Grand Avenue Eastbound |             |            |          |             | Total        | Utturns Total |
|--------------------|----------------------------|-------------|------------|----------|-------------|------------------------|-------------|------------|----------|-------------|----------------------------|-------------|-------------|----------|-------------|------------------------|-------------|------------|----------|-------------|--------------|---------------|
|                    | LEFT                       | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                   | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                       | THRU        | RIGHT       | UTURNS   | APP.TOTAL   | LEFT                   | THRU        | RIGHT      | UTURNS   | APP.TOTAL   |              |               |
| 7:00               | 0                          | 105         | 13         | 0        | 118         | 52                     | 55          | 1          | 0        | 108         | 12                         | 52          | 36          | 0        | 100         | 8                      | 19          | 8          | 0        | 35          | 361          | 0             |
| 7:15               | 1                          | 116         | 16         | 0        | 133         | 71                     | 76          | 2          | 0        | 149         | 12                         | 74          | 34          | 0        | 120         | 12                     | 31          | 14         | 0        | 57          | 459          | 0             |
| 7:30               | 0                          | 116         | 12         | 0        | 128         | 66                     | 118         | 7          | 0        | 191         | 9                          | 89          | 41          | 0        | 139         | 13                     | 35          | 9          | 0        | 57          | 515          | 0             |
| 7:45               | 4                          | 158         | 25         | 0        | 187         | 100                    | 117         | 7          | 0        | 224         | 15                         | 141         | 50          | 0        | 206         | 13                     | 42          | 22         | 0        | 77          | 694          | 0             |
| <b>Total</b>       | <b>5</b>                   | <b>495</b>  | <b>66</b>  | <b>0</b> | <b>566</b>  | <b>289</b>             | <b>366</b>  | <b>17</b>  | <b>0</b> | <b>672</b>  | <b>48</b>                  | <b>356</b>  | <b>161</b>  | <b>0</b> | <b>565</b>  | <b>46</b>              | <b>127</b>  | <b>53</b>  | <b>0</b> | <b>226</b>  | <b>2029</b>  | <b>0</b>      |
| 8:00               | 7                          | 175         | 20         | 0        | 202         | 110                    | 125         | 24         | 0        | 259         | 10                         | 163         | 63          | 0        | 236         | 20                     | 42          | 28         | 0        | 90          | 787          | 0             |
| 8:15               | 1                          | 193         | 18         | 0        | 212         | 128                    | 156         | 75         | 1        | 360         | 17                         | 143         | 69          | 0        | 229         | 12                     | 38          | 22         | 0        | 72          | 873          | 1             |
| 8:30               | 1                          | 209         | 20         | 0        | 230         | 106                    | 135         | 11         | 1        | 253         | 16                         | 155         | 72          | 0        | 243         | 11                     | 56          | 29         | 0        | 96          | 822          | 1             |
| 8:45               | 0                          | 214         | 22         | 0        | 236         | 105                    | 132         | 10         | 2        | 249         | 10                         | 136         | 49          | 0        | 195         | 13                     | 32          | 30         | 0        | 75          | 755          | 2             |
| <b>Total</b>       | <b>9</b>                   | <b>791</b>  | <b>80</b>  | <b>0</b> | <b>880</b>  | <b>449</b>             | <b>548</b>  | <b>120</b> | <b>4</b> | <b>1121</b> | <b>53</b>                  | <b>597</b>  | <b>253</b>  | <b>0</b> | <b>903</b>  | <b>56</b>              | <b>168</b>  | <b>109</b> | <b>0</b> | <b>333</b>  | <b>3237</b>  | <b>4</b>      |
| 16:00              | 0                          | 89          | 19         | 0        | 108         | 44                     | 74          | 11         | 0        | 129         | 3                          | 196         | 137         | 0        | 336         | 18                     | 84          | 36         | 0        | 138         | 711          | 0             |
| 16:15              | 1                          | 91          | 17         | 0        | 109         | 62                     | 81          | 10         | 0        | 153         | 1                          | 172         | 142         | 0        | 315         | 21                     | 93          | 30         | 0        | 144         | 721          | 0             |
| 16:30              | 2                          | 86          | 13         | 0        | 101         | 55                     | 62          | 7          | 0        | 124         | 3                          | 245         | 169         | 0        | 417         | 23                     | 116         | 27         | 0        | 166         | 808          | 0             |
| 16:45              | 0                          | 88          | 14         | 0        | 102         | 51                     | 70          | 5          | 1        | 127         | 4                          | 248         | 173         | 0        | 425         | 17                     | 152         | 35         | 0        | 204         | 858          | 1             |
| <b>Total</b>       | <b>3</b>                   | <b>354</b>  | <b>63</b>  | <b>0</b> | <b>420</b>  | <b>212</b>             | <b>287</b>  | <b>33</b>  | <b>1</b> | <b>533</b>  | <b>11</b>                  | <b>861</b>  | <b>621</b>  | <b>0</b> | <b>1493</b> | <b>79</b>              | <b>445</b>  | <b>128</b> | <b>0</b> | <b>652</b>  | <b>3098</b>  | <b>1</b>      |
| 17:00              | 1                          | 109         | 17         | 0        | 127         | 60                     | 89          | 5          | 0        | 154         | 2                          | 276         | 191         | 0        | 469         | 29                     | 153         | 34         | 0        | 216         | 966          | 0             |
| 17:15              | 0                          | 98          | 26         | 0        | 124         | 63                     | 90          | 6          | 0        | 159         | 2                          | 258         | 192         | 1        | 453         | 31                     | 161         | 33         | 0        | 225         | 961          | 1             |
| 17:30              | 0                          | 90          | 24         | 0        | 114         | 63                     | 90          | 8          | 2        | 163         | 3                          | 259         | 163         | 0        | 425         | 25                     | 146         | 37         | 0        | 208         | 910          | 2             |
| 17:45              | 1                          | 97          | 30         | 0        | 128         | 44                     | 74          | 3          | 0        | 121         | 6                          | 245         | 148         | 0        | 399         | 41                     | 176         | 25         | 0        | 242         | 890          | 0             |
| <b>Total</b>       | <b>2</b>                   | <b>394</b>  | <b>97</b>  | <b>0</b> | <b>493</b>  | <b>230</b>             | <b>343</b>  | <b>22</b>  | <b>2</b> | <b>597</b>  | <b>13</b>                  | <b>1038</b> | <b>694</b>  | <b>1</b> | <b>1746</b> | <b>126</b>             | <b>636</b>  | <b>129</b> | <b>0</b> | <b>891</b>  | <b>3727</b>  | <b>3</b>      |
| <b>Grand Total</b> | <b>19</b>                  | <b>2034</b> | <b>306</b> | <b>0</b> | <b>2359</b> | <b>1180</b>            | <b>1544</b> | <b>192</b> | <b>7</b> | <b>2923</b> | <b>125</b>                 | <b>2852</b> | <b>1729</b> | <b>1</b> | <b>4707</b> | <b>307</b>             | <b>1376</b> | <b>419</b> | <b>0</b> | <b>2102</b> | <b>12091</b> | <b>8</b>      |
| Apprch %           | 0.8%                       | 86.2%       | 13.0%      | 0.0%     | 19.5%       | 40.4%                  | 52.8%       | 6.6%       | 0.2%     | 24.2%       | 2.7%                       | 60.6%       | 36.7%       | 0.0%     | 38.9%       | 14.6%                  | 65.5%       | 19.9%      | 0.0%     | 17.4%       | 100.0%       |               |
| Total %            | 0.2%                       | 16.8%       | 2.5%       | 0.0%     | 19.5%       | 9.8%                   | 12.8%       | 1.6%       | 0.1%     | 24.2%       | 1.0%                       | 23.6%       | 14.3%       | 0.0%     | 38.9%       | 2.5%                   | 11.4%       | 3.5%       | 0.0%     | 17.4%       | 100.0%       |               |

| AM PEAK HOUR                                      | Harrison Street Southbound |       |       |        |           | Grand Avenue Westbound |       |       |        |           | Harrison Street Northbound |       |       |        |           | Grand Avenue Eastbound |       |       |        |           | Total  |  |
|---|----------------------------|-------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|----------------------------|-------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                       | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                       | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 08:00 to 09:00            |                            |       |       |        |           |                        |       |       |        |           |                            |       |       |        |           |                        |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                            |       |       |        |           |                        |       |       |        |           |                            |       |       |        |           |                        |       |       |        |           |        |  |
| 8:00  | 7                          | 175   | 20    | 0      | 202       | 110                    | 125   | 24    | 0      | 259       | 10                         | 163   | 63    | 0      | 236       | 20                     | 42    | 28    | 0      | 90        | 787    |  |
| 8:15  | 1                          | 193   | 18    | 0      | 212       | 128                    | 156   | 75    | 1      | 360       | 17                         | 143   | 69    | 0      | 229       | 12                     | 38    | 22    | 0      | 72        | 873    |  |
| 8:30  | 1                          | 209   | 20    | 0      | 230       | 106                    | 135   | 11    | 1      | 253       | 16                         | 155   | 72    | 0      | 243       | 11                     | 56    | 29    | 0      | 96        | 822    |  |
| 8:45  | 0                          | 214   | 22    | 0      | 236       | 105                    | 132   | 10    | 2      | 249       | 10                         | 136   | 49    | 0      | 195       | 13                     | 32    | 30    | 0      | 75        | 755    |  |
| Total Volume                                      | 9                          | 791   | 80    | 0      | 880       | 449                    | 548   | 120   | 4      | 1121      | 53                         | 597   | 253   | 0      | 903       | 56                     | 168   | 109   | 0      | 333       | 3237   |  |
| % App Total                                       | 1.0%                       | 89.9% | 9.1%  | 0.0%   | 19.5%     | 40.1%                  | 48.9% | 10.7% | 0.4%   | 24.2%     | 5.9%                       | 66.1% | 28.0% | 0.0%   | 38.9%     | 16.8%                  | 50.5% | 32.7% | 0.0%   | 17.4%     | 100.0% |  |
| PHF   | .321                       | .924  | .909  | .000   | .932      | .877                   | .878  | .400  | .500   | .778      | .779                       | .916  | .878  | .000   | .929      | .700                   | .750  | .908  | .000   | .867      | .927   |  |

| PM PEAK HOUR                                      | Harrison Street Southbound |       |       |        |           | Grand Avenue Westbound |       |       |        |           | Harrison Street Northbound |       |       |        |           | Grand Avenue Eastbound |       |       |        |           | Total  |  |
|---|----------------------------|-------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|----------------------------|-------|-------|--------|-----------|------------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                       | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                       | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                   | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 17:00 to 18:00            |                            |       |       |        |           |                        |       |       |        |           |                            |       |       |        |           |                        |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                            |       |       |        |           |                        |       |       |        |           |                            |       |       |        |           |                        |       |       |        |           |        |  |
| 17:00   | 1                          | 109   | 17    | 0      | 127       | 60                     | 89    | 5     | 0      | 154       | 2                          | 276   | 191   | 0      | 469       | 29                     | 153   | 34    | 0      | 216       | 966    |  |
| 17:15   | 0                          | 98    | 26    | 0      | 124       | 63                     | 90    | 6     | 0      | 159       | 2                          | 258   | 192   | 1      | 453       | 31                     | 161   | 33    | 0      | 225       | 961    |  |
| 17:30   | 0                          | 90    | 24    | 0      | 114       | 63                     | 90    | 8     | 2      | 163       | 3                          | 259   | 163   | 0      | 425       | 25                     | 146   | 37    | 0      | 208       | 910    |  |
| 17:45   | 1                          | 97    | 30    | 0      | 128       | 44                     | 74    | 3     | 0      | 121       | 6                          | 245   | 148   | 0      | 399       | 41                     | 176   | 25    | 0      | 242       | 890    |  |
| Total Volume                                      | 2                          | 394   | 97    | 0      | 493       | 230                    | 343   | 22    | 2      | 597       | 13                         | 1038  | 694   | 1      | 1746      | 126                    | 636   | 129   | 0      | 891       | 3727   |  |
| % App Total                                       | 0.4%                       | 79.9% | 19.7% | 0.0%   | 19.5%     | 38.5%                  | 57.5% | 3.7%  | 0.3%   | 24.2%     | 0.7%                       | 59.5% | 39.7% | 0.1%   | 38.9%     | 14.1%                  | 71.4% | 14.5% | 0.0%   | 17.4%     | 100.0% |  |
| PHF   | .500                       | .904  | .808  | .000   | .963      | .913                   | .953  | .688  | .250   | .916      | .542                       | .940  | .904  | .250   | .931      | .768                   | .903  | .872  | .000   | .920      | .965   |  |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-010 Harrison Street & Grand Avenue

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Bank 1 Count = Bikes & Peds

| START TIME         | Harrison Street Southbound |           |           |            |           | Grand Avenue Westbound |            |           |            |            | Harrison Street Northbound |           |            |            |            | Grand Avenue Eastbound |           |          |            |           | Total      | Peds Total  |
|--------------------|----------------------------|-----------|-----------|------------|-----------|------------------------|------------|-----------|------------|------------|----------------------------|-----------|------------|------------|------------|------------------------|-----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                       | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                   | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                       | THRU      | RIGHT      | PEDS       | APP.TOTAL  | LEFT                   | THRU      | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 1                          | 6         | 2         | 11         | 9         | 6                      | 3          | 0         | 9          | 9          | 0                          | 1         | 0          | 15         | 1          | 0                      | 1         | 0        | 17         | 1         | 20         | 52          |
| 7:15               | 0                          | 3         | 1         | 22         | 4         | 4                      | 10         | 2         | 18         | 16         | 0                          | 0         | 0          | 26         | 0          | 0                      | 1         | 0        | 26         | 1         | 21         | 92          |
| 7:30               | 0                          | 6         | 1         | 37         | 7         | 6                      | 10         | 0         | 11         | 16         | 1                          | 0         | 0          | 18         | 1          | 0                      | 1         | 0        | 40         | 1         | 25         | 106         |
| 7:45               | 0                          | 2         | 3         | 54         | 5         | 19                     | 9          | 0         | 43         | 28         | 1                          | 1         | 1          | 55         | 3          | 1                      | 2         | 0        | 74         | 3         | 39         | 226         |
| <b>Total</b>       | <b>1</b>                   | <b>17</b> | <b>7</b>  | <b>124</b> | <b>25</b> | <b>35</b>              | <b>32</b>  | <b>2</b>  | <b>81</b>  | <b>69</b>  | <b>2</b>                   | <b>2</b>  | <b>1</b>   | <b>114</b> | <b>5</b>   | <b>1</b>               | <b>5</b>  | <b>0</b> | <b>157</b> | <b>6</b>  | <b>105</b> | <b>476</b>  |
| 8:00               | 0                          | 5         | 1         | 48         | 6         | 13                     | 16         | 1         | 31         | 30         | 0                          | 1         | 2          | 30         | 3          | 0                      | 2         | 1        | 48         | 3         | 42         | 157         |
| 8:15               | 0                          | 12        | 2         | 69         | 14        | 14                     | 25         | 0         | 41         | 39         | 1                          | 3         | 2          | 60         | 6          | 0                      | 3         | 0        | 64         | 3         | 62         | 234         |
| 8:30               | 1                          | 7         | 1         | 45         | 9         | 19                     | 19         | 0         | 49         | 38         | 0                          | 4         | 2          | 52         | 6          | 0                      | 2         | 0        | 50         | 2         | 55         | 196         |
| 8:45               | 0                          | 12        | 3         | 42         | 15        | 9                      | 22         | 0         | 36         | 31         | 0                          | 0         | 3          | 36         | 3          | 0                      | 1         | 0        | 56         | 1         | 50         | 170         |
| <b>Total</b>       | <b>1</b>                   | <b>36</b> | <b>7</b>  | <b>204</b> | <b>44</b> | <b>55</b>              | <b>82</b>  | <b>1</b>  | <b>157</b> | <b>138</b> | <b>1</b>                   | <b>8</b>  | <b>9</b>   | <b>178</b> | <b>18</b>  | <b>0</b>               | <b>8</b>  | <b>1</b> | <b>218</b> | <b>9</b>  | <b>209</b> | <b>757</b>  |
| 16:00              | 0                          | 4         | 0         | 18         | 4         | 0                      | 3          | 0         | 16         | 3          | 0                          | 6         | 11         | 24         | 17         | 0                      | 8         | 1        | 22         | 9         | 33         | 80          |
| 16:15              | 1                          | 2         | 0         | 28         | 3         | 2                      | 2          | 0         | 27         | 4          | 0                          | 6         | 10         | 44         | 16         | 0                      | 7         | 0        | 31         | 7         | 30         | 130         |
| 16:30              | 1                          | 2         | 1         | 19         | 4         | 4                      | 11         | 0         | 28         | 15         | 0                          | 2         | 11         | 39         | 13         | 0                      | 3         | 2        | 42         | 5         | 37         | 128         |
| 16:45              | 0                          | 4         | 0         | 25         | 4         | 2                      | 5          | 0         | 42         | 7          | 0                          | 2         | 16         | 42         | 18         | 3                      | 9         | 0        | 24         | 12        | 41         | 133         |
| <b>Total</b>       | <b>2</b>                   | <b>12</b> | <b>1</b>  | <b>90</b>  | <b>15</b> | <b>8</b>               | <b>21</b>  | <b>0</b>  | <b>113</b> | <b>29</b>  | <b>0</b>                   | <b>16</b> | <b>48</b>  | <b>149</b> | <b>64</b>  | <b>3</b>               | <b>27</b> | <b>3</b> | <b>119</b> | <b>33</b> | <b>141</b> | <b>471</b>  |
| 17:00              | 0                          | 2         | 2         | 41         | 4         | 1                      | 9          | 2         | 33         | 12         | 1                          | 5         | 21         | 39         | 27         | 1                      | 10        | 0        | 48         | 11        | 54         | 161         |
| 17:15              | 0                          | 1         | 1         | 54         | 2         | 3                      | 3          | 4         | 30         | 10         | 0                          | 6         | 22         | 46         | 28         | 2                      | 12        | 1        | 43         | 15        | 55         | 173         |
| 17:30              | 0                          | 0         | 0         | 46         | 0         | 3                      | 7          | 0         | 23         | 10         | 1                          | 4         | 20         | 56         | 25         | 1                      | 5         | 0        | 54         | 6         | 41         | 179         |
| 17:45              | 2                          | 2         | 1         | 45         | 5         | 2                      | 5          | 1         | 35         | 8          | 1                          | 4         | 22         | 57         | 27         | 1                      | 12        | 0        | 35         | 13        | 53         | 172         |
| <b>Total</b>       | <b>2</b>                   | <b>5</b>  | <b>4</b>  | <b>186</b> | <b>11</b> | <b>9</b>               | <b>24</b>  | <b>7</b>  | <b>121</b> | <b>40</b>  | <b>3</b>                   | <b>19</b> | <b>85</b>  | <b>198</b> | <b>107</b> | <b>5</b>               | <b>39</b> | <b>1</b> | <b>180</b> | <b>45</b> | <b>203</b> | <b>685</b>  |
| <b>Grand Total</b> | <b>6</b>                   | <b>70</b> | <b>19</b> | <b>604</b> | <b>95</b> | <b>107</b>             | <b>159</b> | <b>10</b> | <b>472</b> | <b>276</b> | <b>6</b>                   | <b>45</b> | <b>143</b> | <b>639</b> | <b>194</b> | <b>9</b>               | <b>79</b> | <b>5</b> | <b>674</b> | <b>93</b> | <b>658</b> | <b>2389</b> |
| Apprch %           | 6.3%                       | 73.7%     | 20.0%     |            |           | 38.8%                  | 57.6%      | 3.6%      |            |            | 3.1%                       | 23.2%     | 73.7%      |            |            | 9.7%                   | 84.9%     | 5.4%     |            |           |            |             |
| Total %            | 0.9%                       | 10.6%     | 2.9%      |            | 14.4%     | 16.3%                  | 24.2%      | 1.5%      |            | 41.9%      | 0.9%                       | 6.8%      | 21.7%      |            | 29.5%      | 1.4%                   | 12.0%     | 0.8%     |            | 14.1%     |            | 100.0%      |

| AM PEAK HOUR                                      | Harrison Street Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Harrison Street Northbound |       |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|----------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|----------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                       | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                       | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                            |       |       |      |           |                        |       |       |      |           |                            |       |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                            |       |       |      |           |                        |       |       |      |           |                            |       |       |      |           |                        |       |       |      |           |       |  |
| 8:00  | 0                          | 5     | 1     | 48   | 6         | 13                     | 16    | 1     | 31   | 30        | 0                          | 1     | 2     | 30   | 3         | 0                      | 2     | 1     | 48   | 3         | 42    |  |
| 8:15  | 0                          | 12    | 2     | 69   | 14        | 14                     | 25    | 0     | 41   | 39        | 1                          | 3     | 2     | 60   | 6         | 0                      | 3     | 0     | 64   | 3         | 62    |  |
| 8:30  | 1                          | 7     | 1     | 45   | 9         | 19                     | 19    | 0     | 49   | 38        | 0                          | 4     | 2     | 52   | 6         | 0                      | 2     | 0     | 50   | 2         | 55    |  |
| 8:45  | 0                          | 12    | 3     | 42   | 15        | 9                      | 22    | 0     | 36   | 31        | 0                          | 0     | 3     | 36   | 3         | 0                      | 1     | 0     | 56   | 1         | 50    |  |
| Total Volume                                      | 1                          | 36    | 7     | 204  | 44        | 55                     | 82    | 1     | 157  | 138       | 1                          | 8     | 9     | 178  | 18        | 0                      | 8     | 1     | 218  | 9         | 209   |  |
| % App Total                                       | 2.3%                       | 81.8% | 15.9% |      |           | 39.9%                  | 59.4% | 0.7%  |      |           | 5.6%                       | 44.4% | 50.0% |      |           | 0.0%                   | 88.9% | 11.1% |      |           |       |  |
| PHF   | .250                       | .750  | .583  |      | .733      | .724                   | .820  | .250  |      | .885      | .250                       | .500  | .750  |      | .750      | .000                   | .667  | .250  |      | .750      | .843  |  |

| PM PEAK HOUR                                      | Harrison Street Southbound |       |       |      |           | Grand Avenue Westbound |       |       |      |           | Harrison Street Northbound |       |       |      |           | Grand Avenue Eastbound |       |       |      |           | Total |  |
|---|----------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|----------------------------|-------|-------|------|-----------|------------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                       | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                       | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                   | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                            |       |       |      |           |                        |       |       |      |           |                            |       |       |      |           |                        |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                            |       |       |      |           |                        |       |       |      |           |                            |       |       |      |           |                        |       |       |      |           |       |  |
| 17:00   | 0                          | 2     | 2     | 41   | 4         | 1                      | 9     | 2     | 33   | 12        | 1                          | 5     | 21    | 39   | 27        | 1                      | 10    | 0     | 48   | 11        | 54    |  |
| 17:15   | 0                          | 1     | 1     | 54   | 2         | 3                      | 3     | 4     | 30   | 10        | 0                          | 6     | 22    | 46   | 28        | 2                      | 12    | 1     | 43   | 15        | 55    |  |
| 17:30   | 0                          | 0     | 0     | 46   | 0         | 3                      | 7     | 0     | 23   | 10        | 1                          | 4     | 20    | 56   | 25        | 1                      | 5     | 0     | 54   | 6         | 41    |  |
| 17:45   | 2                          | 2     | 1     | 45   | 5         | 2                      | 5     | 1     | 35   | 8         | 1                          | 4     | 22    | 57   | 27        | 1                      | 12    | 0     | 35   | 13        | 53    |  |
| Total Volume                                      | 2                          | 5     | 4     | 186  | 11        | 9                      | 24    | 7     | 121  | 40        | 3                          | 19    | 85    | 198  | 107       | 5                      | 39    | 1     | 180  | 45        | 203   |  |
| % App Total                                       | 18.2%                      | 45.5% | 36.4% |      |           | 22.5%                  | 60.0% | 17.5% |      |           | 2.8%                       | 17.8% | 79.4% |      |           | 11.1%                  | 86.7% | 2.2%  |      |           |       |  |
| PHF   | .250                       | .625  | .500  |      | .550      | .750                   | .667  | .438  |      | .833      | .750                       | .792  | .966  |      | .955      | .625                   | .813  | .250  |      | .750      | .923  |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-005 Bay Pl & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Bay Pl Southbound |          |            |          |            | Grand Ave Westbound |             |            |          |             | Bay Pl Northbound |          |          |          |           | Grand Ave Eastbound |             |          |          |             | Total       | Utturns Total |
|--------------------|-------------------|----------|------------|----------|------------|---------------------|-------------|------------|----------|-------------|-------------------|----------|----------|----------|-----------|---------------------|-------------|----------|----------|-------------|-------------|---------------|
|                    | LEFT              | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT    | UTURNS   | APP.TOTAL   |             |               |
| 7:00               | 12                | 0        | 8          | 0        | 20         | 0                   | 115         | 22         | 1        | 138         | 0                 | 0        | 0        | 0        | 0         | 9                   | 63          | 0        | 0        | 72          | 230         | 1             |
| 7:15               | 9                 | 0        | 9          | 0        | 18         | 0                   | 145         | 24         | 0        | 169         | 0                 | 0        | 0        | 0        | 0         | 5                   | 66          | 0        | 0        | 71          | 258         | 0             |
| 7:30               | 12                | 0        | 18         | 0        | 30         | 0                   | 146         | 46         | 0        | 192         | 0                 | 0        | 0        | 0        | 0         | 8                   | 73          | 0        | 0        | 81          | 303         | 0             |
| 7:45               | 11                | 0        | 19         | 0        | 30         | 0                   | 187         | 43         | 0        | 230         | 0                 | 0        | 0        | 0        | 0         | 15                  | 70          | 0        | 0        | 85          | 345         | 0             |
| <b>Total</b>       | <b>44</b>         | <b>0</b> | <b>54</b>  | <b>0</b> | <b>98</b>  | <b>0</b>            | <b>593</b>  | <b>135</b> | <b>1</b> | <b>729</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>37</b>           | <b>272</b>  | <b>0</b> | <b>0</b> | <b>309</b>  | <b>1136</b> | <b>1</b>      |
| 8:00               | 21                | 0        | 17         | 0        | 38         | 0                   | 232         | 53         | 0        | 285         | 0                 | 0        | 0        | 0        | 0         | 13                  | 125         | 0        | 0        | 138         | 461         | 0             |
| 8:15               | 29                | 0        | 26         | 0        | 55         | 0                   | 234         | 79         | 0        | 313         | 0                 | 0        | 0        | 0        | 0         | 14                  | 103         | 0        | 1        | 118         | 486         | 1             |
| 8:30               | 24                | 0        | 21         | 0        | 45         | 0                   | 263         | 74         | 0        | 337         | 0                 | 0        | 0        | 0        | 0         | 13                  | 91          | 0        | 0        | 104         | 486         | 0             |
| 8:45               | 29                | 0        | 21         | 1        | 51         | 0                   | 198         | 61         | 0        | 259         | 0                 | 0        | 0        | 0        | 0         | 15                  | 95          | 0        | 0        | 110         | 420         | 1             |
| <b>Total</b>       | <b>103</b>        | <b>0</b> | <b>85</b>  | <b>1</b> | <b>189</b> | <b>0</b>            | <b>927</b>  | <b>267</b> | <b>0</b> | <b>1194</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>55</b>           | <b>414</b>  | <b>0</b> | <b>1</b> | <b>470</b>  | <b>1853</b> | <b>2</b>      |
| 16:00              | 58                | 0        | 16         | 0        | 74         | 0                   | 101         | 40         | 0        | 141         | 0                 | 0        | 0        | 0        | 0         | 14                  | 216         | 0        | 0        | 230         | 445         | 0             |
| 16:15              | 65                | 0        | 16         | 0        | 81         | 0                   | 100         | 42         | 0        | 142         | 0                 | 0        | 0        | 0        | 0         | 23                  | 232         | 0        | 0        | 255         | 478         | 0             |
| 16:30              | 60                | 0        | 18         | 0        | 78         | 0                   | 102         | 44         | 0        | 146         | 0                 | 0        | 0        | 0        | 0         | 20                  | 244         | 0        | 0        | 264         | 488         | 0             |
| 16:45              | 48                | 0        | 22         | 0        | 70         | 0                   | 91          | 56         | 0        | 147         | 0                 | 0        | 0        | 0        | 0         | 26                  | 233         | 0        | 1        | 260         | 477         | 1             |
| <b>Total</b>       | <b>231</b>        | <b>0</b> | <b>72</b>  | <b>0</b> | <b>303</b> | <b>0</b>            | <b>394</b>  | <b>182</b> | <b>0</b> | <b>576</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>83</b>           | <b>925</b>  | <b>0</b> | <b>1</b> | <b>1009</b> | <b>1888</b> | <b>1</b>      |
| 17:00              | 78                | 0        | 21         | 0        | 99         | 0                   | 114         | 49         | 0        | 163         | 0                 | 0        | 0        | 0        | 0         | 31                  | 303         | 0        | 0        | 334         | 596         | 0             |
| 17:15              | 86                | 0        | 18         | 0        | 104        | 0                   | 129         | 65         | 0        | 194         | 0                 | 0        | 0        | 0        | 0         | 46                  | 321         | 0        | 0        | 367         | 665         | 0             |
| 17:30              | 65                | 0        | 19         | 0        | 84         | 0                   | 125         | 60         | 0        | 185         | 0                 | 0        | 0        | 0        | 0         | 46                  | 308         | 0        | 0        | 354         | 623         | 0             |
| 17:45              | 65                | 0        | 27         | 0        | 92         | 0                   | 95          | 55         | 0        | 150         | 0                 | 0        | 0        | 0        | 0         | 39                  | 327         | 0        | 0        | 366         | 608         | 0             |
| <b>Total</b>       | <b>294</b>        | <b>0</b> | <b>85</b>  | <b>0</b> | <b>379</b> | <b>0</b>            | <b>463</b>  | <b>229</b> | <b>0</b> | <b>692</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>162</b>          | <b>1259</b> | <b>0</b> | <b>0</b> | <b>1421</b> | <b>2492</b> | <b>0</b>      |
| <b>Grand Total</b> | <b>672</b>        | <b>0</b> | <b>296</b> | <b>1</b> | <b>969</b> | <b>0</b>            | <b>2377</b> | <b>813</b> | <b>1</b> | <b>3191</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>337</b>          | <b>2870</b> | <b>0</b> | <b>2</b> | <b>3209</b> | <b>7369</b> | <b>4</b>      |
| Apprch %           | 69.3%             | 0.0%     | 30.5%      | 0.1%     |            | 0.0%                | 74.5%       | 25.5%      | 0.0%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     |           | 10.5%               | 89.4%       | 0.0%     | 0.1%     |             |             |               |
| Total %            | 9.1%              | 0.0%     | 4.0%       | 0.0%     | 13.1%      | 0.0%                | 32.3%       | 11.0%      | 0.0%     | 43.3%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 4.6%                | 38.9%       | 0.0%     | 0.0%     | 43.5%       | 100.0%      |               |

| AM PEAK HOUR                                      | Bay Pl Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Bay Pl Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                   |      |       |        |           |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                   |      |       |        |           |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |       |
| 8:00  | 21                | 0    | 17    | 0      | 38        | 0                   | 232   | 53    | 0      | 285       | 0                 | 0    | 0     | 0      | 0         | 13                  | 125   | 0     | 0      | 138       | 461   |
| 8:15  | 29                | 0    | 26    | 0      | 55        | 0                   | 234   | 79    | 0      | 313       | 0                 | 0    | 0     | 0      | 0         | 14                  | 103   | 0     | 1      | 118       | 486   |
| 8:30  | 24                | 0    | 21    | 0      | 45        | 0                   | 263   | 74    | 0      | 337       | 0                 | 0    | 0     | 0      | 0         | 13                  | 91    | 0     | 0      | 104       | 486   |
| 8:45  | 29                | 0    | 21    | 1      | 51        | 0                   | 198   | 61    | 0      | 259       | 0                 | 0    | 0     | 0      | 0         | 15                  | 95    | 0     | 0      | 110       | 420   |
| Total Volume                                      | 103               | 0    | 85    | 1      | 189       | 0                   | 927   | 267   | 0      | 1194      | 0                 | 0    | 0     | 0      | 0         | 55                  | 414   | 0     | 1      | 470       | 1853  |
| % App Total                                       | 54.5%             | 0.0% | 45.0% | 0.5%   |           | 0.0%                | 77.6% | 22.4% | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   |           | 11.7%               | 88.1% | 0.0%  | 0.2%   |           |       |
| PHF   | .888              | .000 | .817  | .250   | .859      | .000                | .881  | .845  | .000   | .886      | .000              | .000 | .000  | .000   | .000      | .917                | .828  | .000  | .250   | .851      | .953  |

| PM PEAK HOUR                                      | Bay Pl Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Bay Pl Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                   |      |       |        |           |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                   |      |       |        |           |                     |       |       |        |           |                   |      |       |        |           |                     |       |       |        |           |       |
| 17:00   | 78                | 0    | 21    | 0      | 99        | 0                   | 114   | 49    | 0      | 163       | 0                 | 0    | 0     | 0      | 0         | 31                  | 303   | 0     | 0      | 334       | 596   |
| 17:15   | 86                | 0    | 18    | 0      | 104       | 0                   | 129   | 65    | 0      | 194       | 0                 | 0    | 0     | 0      | 0         | 46                  | 321   | 0     | 0      | 367       | 665   |
| 17:30   | 65                | 0    | 19    | 0      | 84        | 0                   | 125   | 60    | 0      | 185       | 0                 | 0    | 0     | 0      | 0         | 46                  | 308   | 0     | 0      | 354       | 623   |
| 17:45   | 65                | 0    | 27    | 0      | 92        | 0                   | 95    | 55    | 0      | 150       | 0                 | 0    | 0     | 0      | 0         | 39                  | 327   | 0     | 0      | 366       | 608   |
| Total Volume                                      | 294               | 0    | 85    | 0      | 379       | 0                   | 463   | 229   | 0      | 692       | 0                 | 0    | 0     | 0      | 0         | 162                 | 1259  | 0     | 0      | 1421      | 2492  |
| % App Total                                       | 77.6%             | 0.0% | 22.4% | 0.0%   |           | 0.0%                | 66.9% | 33.1% | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   |           | 11.4%               | 88.6% | 0.0%  | 0.0%   |           |       |
| PHF   | .855              | .000 | .787  | .000   | .911      | .000                | .897  | .881  | .000   | .892      | .000              | .000 | .000  | .000   | .000      | .880                | .963  | .000  | .000   | .968      | .937  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090

[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-005 Bay Pl & Grand Ave

Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Bay Pl Southbound |          |           |            |           | Grand Ave Westbound |            |           |          |            | Bay Pl Northbound |          |          |          |           | Grand Ave Eastbound |           |            |            |            | Total      | Peds Total |
|--------------------|-------------------|----------|-----------|------------|-----------|---------------------|------------|-----------|----------|------------|-------------------|----------|----------|----------|-----------|---------------------|-----------|------------|------------|------------|------------|------------|
|                    | LEFT              | THRU     | RIGHT     | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT     | PEDS     | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                | THRU      | RIGHT      | PEDS       | APP.TOTAL  |            |            |
| 7:00               | 4                 | 0        | 1         | 9          | 5         | 0                   | 9          | 1         | 0        | 10         | 0                 | 0        | 0        | 0        | 0         | 0                   | 2         | 0          | 4          | 2          | 17         | 13         |
| 7:15               | 1                 | 0        | 1         | 6          | 2         | 0                   | 5          | 6         | 0        | 11         | 0                 | 0        | 0        | 0        | 0         | 0                   | 2         | 0          | 4          | 2          | 15         | 10         |
| 7:30               | 3                 | 0        | 0         | 21         | 3         | 0                   | 13         | 2         | 0        | 15         | 0                 | 0        | 0        | 0        | 0         | 4                   | 0         | 8          | 4          | 22         | 29         |            |
| 7:45               | 3                 | 0        | 3         | 12         | 6         | 0                   | 19         | 1         | 0        | 20         | 0                 | 0        | 0        | 0        | 0         | 4                   | 0         | 11         | 4          | 30         | 23         |            |
| <b>Total</b>       | <b>11</b>         | <b>0</b> | <b>5</b>  | <b>48</b>  | <b>16</b> | <b>0</b>            | <b>46</b>  | <b>10</b> | <b>0</b> | <b>56</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>12</b>           | <b>0</b>  | <b>27</b>  | <b>12</b>  | <b>84</b>  | <b>75</b>  |            |
| 8:00               | 0                 | 0        | 3         | 17         | 3         | 0                   | 21         | 8         | 0        | 29         | 0                 | 0        | 0        | 0        | 0         | 1                   | 6         | 0          | 4          | 7          | 39         | 21         |
| 8:15               | 2                 | 0        | 1         | 25         | 3         | 0                   | 27         | 4         | 0        | 31         | 0                 | 0        | 0        | 0        | 0         | 2                   | 2         | 0          | 13         | 2          | 36         | 38         |
| 8:30               | 2                 | 0        | 2         | 32         | 4         | 0                   | 29         | 3         | 0        | 32         | 0                 | 0        | 0        | 0        | 0         | 3                   | 0         | 20         | 3          | 39         | 52         |            |
| 8:45               | 3                 | 0        | 0         | 19         | 3         | 0                   | 19         | 7         | 0        | 26         | 0                 | 0        | 0        | 0        | 0         | 1                   | 3         | 0          | 60         | 4          | 33         | 79         |
| <b>Total</b>       | <b>7</b>          | <b>0</b> | <b>6</b>  | <b>93</b>  | <b>13</b> | <b>0</b>            | <b>96</b>  | <b>22</b> | <b>0</b> | <b>118</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>2</b>            | <b>14</b> | <b>0</b>   | <b>97</b>  | <b>16</b>  | <b>147</b> | <b>190</b> |
| 16:00              | 4                 | 0        | 2         | 10         | 6         | 0                   | 4          | 2         | 0        | 6          | 0                 | 0        | 0        | 0        | 0         | 18                  | 0         | 23         | 18         | 30         | 33         |            |
| 16:15              | 2                 | 0        | 0         | 6          | 2         | 0                   | 3          | 4         | 0        | 7          | 0                 | 0        | 0        | 0        | 0         | 17                  | 0         | 14         | 17         | 26         | 20         |            |
| 16:30              | 6                 | 0        | 1         | 20         | 7         | 0                   | 4          | 3         | 1        | 7          | 0                 | 0        | 0        | 0        | 5         | 16                  | 0         | 14         | 21         | 35         | 35         |            |
| 16:45              | 4                 | 0        | 0         | 26         | 4         | 0                   | 2          | 1         | 0        | 3          | 0                 | 0        | 0        | 0        | 1         | 21                  | 0         | 19         | 22         | 29         | 45         |            |
| <b>Total</b>       | <b>16</b>         | <b>0</b> | <b>3</b>  | <b>62</b>  | <b>19</b> | <b>0</b>            | <b>13</b>  | <b>10</b> | <b>1</b> | <b>23</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>6</b>  | <b>72</b>           | <b>0</b>  | <b>70</b>  | <b>78</b>  | <b>120</b> | <b>133</b> |            |
| 17:00              | 3                 | 0        | 0         | 28         | 3         | 0                   | 7          | 0         | 0        | 7          | 0                 | 0        | 0        | 0        | 1         | 25                  | 0         | 20         | 26         | 36         | 48         |            |
| 17:15              | 9                 | 0        | 1         | 16         | 10        | 0                   | 2          | 3         | 0        | 5          | 0                 | 0        | 0        | 0        | 1         | 32                  | 0         | 18         | 33         | 48         | 34         |            |
| 17:30              | 4                 | 0        | 0         | 28         | 4         | 0                   | 6          | 0         | 0        | 6          | 0                 | 0        | 0        | 0        | 2         | 26                  | 0         | 19         | 28         | 38         | 47         |            |
| 17:45              | 3                 | 0        | 0         | 37         | 3         | 0                   | 3          | 1         | 0        | 4          | 0                 | 0        | 0        | 0        | 3         | 38                  | 0         | 11         | 41         | 48         | 48         |            |
| <b>Total</b>       | <b>19</b>         | <b>0</b> | <b>1</b>  | <b>109</b> | <b>20</b> | <b>0</b>            | <b>18</b>  | <b>4</b>  | <b>0</b> | <b>22</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>7</b>  | <b>121</b>          | <b>0</b>  | <b>68</b>  | <b>128</b> | <b>170</b> | <b>177</b> |            |
| <b>Grand Total</b> | <b>53</b>         | <b>0</b> | <b>15</b> | <b>312</b> | <b>68</b> | <b>0</b>            | <b>173</b> | <b>46</b> | <b>1</b> | <b>219</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>15</b> | <b>219</b>          | <b>0</b>  | <b>262</b> | <b>234</b> | <b>521</b> | <b>575</b> |            |
| Apprch %           | 77.9%             | 0.0%     | 22.1%     |            |           | 0.0%                | 79.0%      | 21.0%     |          |            | 0.0%              | 0.0%     | 0.0%     |          | 6.4%      | 93.6%               | 0.0%      |            |            |            |            |            |
| Total %            | 10.2%             | 0.0%     | 2.9%      |            | 13.1%     | 0.0%                | 33.2%      | 8.8%      |          | 42.0%      | 0.0%              | 0.0%     | 0.0%     |          | 2.9%      | 42.0%               | 0.0%      |            | 44.9%      |            | 100.0%     |            |

| AM PEAK HOUR                                      | Bay Pl Southbound |          |          |           |           | Grand Ave Westbound |           |           |          |            | Bay Pl Northbound |          |          |          |           | Grand Ave Eastbound |           |          |           |           | Total      |
|---|-------------------|----------|----------|-----------|-----------|---------------------|-----------|-----------|----------|------------|-------------------|----------|----------|----------|-----------|---------------------|-----------|----------|-----------|-----------|------------|
|   | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT                | THRU      | RIGHT     | PEDS     | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS      | APP.TOTAL |            |
| Peak Hour Analysis From 08:00 to 09:00            |                   |          |          |           |           |                     |           |           |          |            |                   |          |          |          |           |                     |           |          |           |           |            |
| Peak Hour For Entire Intersection Begins at 08:00 |                   |          |          |           |           |                     |           |           |          |            |                   |          |          |          |           |                     |           |          |           |           |            |
| 8:00  | 0                 | 0        | 3        | 17        | 3         | 0                   | 21        | 8         | 0        | 29         | 0                 | 0        | 0        | 0        | 0         | 1                   | 6         | 0        | 4         | 7         | 39         |
| 8:15  | 2                 | 0        | 1        | 25        | 3         | 0                   | 27        | 4         | 0        | 31         | 0                 | 0        | 0        | 0        | 0         | 2                   | 2         | 0        | 13        | 2         | 36         |
| 8:30  | 2                 | 0        | 2        | 32        | 4         | 0                   | 29        | 3         | 0        | 32         | 0                 | 0        | 0        | 0        | 0         | 3                   | 0         | 20       | 3         | 39        |            |
| 8:45  | 3                 | 0        | 0        | 19        | 3         | 0                   | 19        | 7         | 0        | 26         | 0                 | 0        | 0        | 0        | 0         | 1                   | 3         | 0        | 60        | 4         | 33         |
| <b>Total Volume</b>                               | <b>7</b>          | <b>0</b> | <b>6</b> | <b>93</b> | <b>13</b> | <b>0</b>            | <b>96</b> | <b>22</b> | <b>0</b> | <b>118</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>2</b>            | <b>14</b> | <b>0</b> | <b>97</b> | <b>16</b> | <b>147</b> |
| % App Total                                       | 53.8%             | 0.0%     | 46.2%    |           |           | 0.0%                | 81.4%     | 18.6%     |          |            | 0.0%              | 0.0%     | 0.0%     |          | 12.5%     | 87.5%               | 0.0%      |          |           |           |            |
| PHF   | .583              | .000     | .500     |           | .813      | .000                | .828      | .688      |          | .922       | .000              | .000     | .000     |          | .000      | .583                | .000      |          | .571      |           | .942       |

| PM PEAK HOUR                                      | Bay Pl Southbound |          |          |            |           | Grand Ave Westbound |           |          |          |           | Bay Pl Northbound |          |          |          |           | Grand Ave Eastbound |          |           |            |            | Total      |
|---|-------------------|----------|----------|------------|-----------|---------------------|-----------|----------|----------|-----------|-------------------|----------|----------|----------|-----------|---------------------|----------|-----------|------------|------------|------------|
|   | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS     | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                | THRU     | RIGHT     | PEDS       | APP.TOTAL  |            |
| Peak Hour Analysis From 17:00 to 18:00            |                   |          |          |            |           |                     |           |          |          |           |                   |          |          |          |           |                     |          |           |            |            |            |
| Peak Hour For Entire Intersection Begins at 17:00 |                   |          |          |            |           |                     |           |          |          |           |                   |          |          |          |           |                     |          |           |            |            |            |
| 17:00   | 3                 | 0        | 0        | 28         | 3         | 0                   | 7         | 0        | 0        | 7         | 0                 | 0        | 0        | 0        | 1         | 25                  | 0        | 20        | 26         | 36         |            |
| 17:15   | 9                 | 0        | 1        | 16         | 10        | 0                   | 2         | 3        | 0        | 5         | 0                 | 0        | 0        | 0        | 1         | 32                  | 0        | 18        | 33         | 48         |            |
| 17:30   | 4                 | 0        | 0        | 28         | 4         | 0                   | 6         | 0        | 0        | 6         | 0                 | 0        | 0        | 0        | 2         | 26                  | 0        | 19        | 28         | 38         |            |
| 17:45   | 3                 | 0        | 0        | 37         | 3         | 0                   | 3         | 1        | 0        | 4         | 0                 | 0        | 0        | 0        | 3         | 38                  | 0        | 11        | 41         | 48         |            |
| <b>Total Volume</b>                               | <b>19</b>         | <b>0</b> | <b>1</b> | <b>109</b> | <b>20</b> | <b>0</b>            | <b>18</b> | <b>4</b> | <b>0</b> | <b>22</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>7</b>  | <b>121</b>          | <b>0</b> | <b>68</b> | <b>128</b> | <b>170</b> | <b>177</b> |
| % App Total                                       | 95.0%             | 0.0%     | 5.0%     |            |           | 0.0%                | 81.8%     | 18.2%    |          |           | 0.0%              | 0.0%     | 0.0%     |          | 5.5%      | 94.5%               | 0.0%     |           |            |            |            |
| PHF   | .528              | .000     | .250     |            | .500      | .000                | .643      | .333     |          | .786      | .000              | .000     | .000     |          | .000      | .796                | .000     |           | .780       |            | .885       |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-006 Park View Terrace & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Park View Terrace Southbound |          |            |          |            | Grand Ave Westbound |             |           |           |             | Park View Terrace Northbound |          |          |          |           | Grand Ave Eastbound |             |            |           |             | Total       | Utturns Total |
|--------------------|------------------------------|----------|------------|----------|------------|---------------------|-------------|-----------|-----------|-------------|------------------------------|----------|----------|----------|-----------|---------------------|-------------|------------|-----------|-------------|-------------|---------------|
|                    | LEFT                         | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT     | UTURNS    | APP.TOTAL   | LEFT                         | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT      | UTURNS    | APP.TOTAL   |             |               |
| 7:00               | 3                            | 0        | 2          | 0        | 5          | 1                   | 140         | 2         | 0         | 143         | 0                            | 0        | 0        | 0        | 0         | 4                   | 65          | 4          | 0         | 73          | 221         | 0             |
| 7:15               | 0                            | 0        | 5          | 0        | 5          | 4                   | 165         | 2         | 0         | 171         | 0                            | 0        | 0        | 0        | 0         | 2                   | 69          | 4          | 0         | 75          | 251         | 0             |
| 7:30               | 4                            | 0        | 6          | 0        | 10         | 3                   | 190         | 2         | 3         | 198         | 0                            | 0        | 0        | 0        | 0         | 1                   | 81          | 0          | 0         | 82          | 290         | 3             |
| 7:45               | 0                            | 0        | 11         | 0        | 11         | 6                   | 237         | 5         | 0         | 248         | 0                            | 0        | 0        | 0        | 0         | 4                   | 79          | 3          | 1         | 87          | 346         | 1             |
| <b>Total</b>       | <b>7</b>                     | <b>0</b> | <b>24</b>  | <b>0</b> | <b>31</b>  | <b>14</b>           | <b>732</b>  | <b>11</b> | <b>3</b>  | <b>760</b>  | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>11</b>           | <b>294</b>  | <b>11</b>  | <b>1</b>  | <b>317</b>  | <b>1108</b> | <b>4</b>      |
| 8:00               | 4                            | 2        | 4          | 0        | 10         | 26                  | 263         | 2         | 0         | 291         | 0                            | 0        | 0        | 0        | 0         | 3                   | 121         | 17         | 0         | 141         | 442         | 0             |
| 8:15               | 3                            | 0        | 12         | 0        | 15         | 4                   | 313         | 5         | 0         | 322         | 0                            | 0        | 0        | 0        | 0         | 1                   | 128         | 4          | 0         | 133         | 470         | 0             |
| 8:30               | 9                            | 0        | 20         | 0        | 29         | 3                   | 294         | 2         | 1         | 300         | 0                            | 0        | 0        | 0        | 0         | 7                   | 100         | 3          | 3         | 113         | 442         | 4             |
| 8:45               | 4                            | 0        | 13         | 0        | 17         | 8                   | 247         | 4         | 0         | 259         | 0                            | 0        | 0        | 0        | 0         | 5                   | 112         | 6          | 0         | 123         | 399         | 0             |
| <b>Total</b>       | <b>20</b>                    | <b>2</b> | <b>49</b>  | <b>0</b> | <b>71</b>  | <b>41</b>           | <b>1117</b> | <b>13</b> | <b>1</b>  | <b>1172</b> | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>16</b>           | <b>461</b>  | <b>30</b>  | <b>3</b>  | <b>510</b>  | <b>1753</b> | <b>4</b>      |
| 16:00              | 9                            | 0        | 7          | 0        | 16         | 3                   | 128         | 6         | 1         | 138         | 0                            | 0        | 0        | 0        | 0         | 6                   | 270         | 4          | 0         | 280         | 434         | 1             |
| 16:15              | 3                            | 0        | 7          | 0        | 10         | 2                   | 136         | 6         | 1         | 145         | 0                            | 0        | 0        | 0        | 0         | 1                   | 291         | 8          | 1         | 301         | 456         | 2             |
| 16:30              | 5                            | 0        | 3          | 0        | 8          | 0                   | 139         | 3         | 0         | 142         | 0                            | 0        | 0        | 0        | 0         | 1                   | 289         | 10         | 1         | 301         | 451         | 1             |
| 16:45              | 8                            | 0        | 7          | 0        | 15         | 6                   | 143         | 4         | 2         | 155         | 0                            | 0        | 0        | 0        | 0         | 3                   | 272         | 4          | 3         | 282         | 452         | 5             |
| <b>Total</b>       | <b>25</b>                    | <b>0</b> | <b>24</b>  | <b>0</b> | <b>49</b>  | <b>11</b>           | <b>546</b>  | <b>19</b> | <b>4</b>  | <b>580</b>  | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>11</b>           | <b>1122</b> | <b>26</b>  | <b>5</b>  | <b>1164</b> | <b>1793</b> | <b>9</b>      |
| 17:00              | 7                            | 0        | 8          | 0        | 15         | 3                   | 152         | 3         | 2         | 160         | 0                            | 0        | 0        | 0        | 0         | 6                   | 348         | 7          | 0         | 361         | 536         | 2             |
| 17:15              | 6                            | 0        | 9          | 0        | 15         | 4                   | 190         | 12        | 2         | 208         | 0                            | 0        | 0        | 0        | 0         | 14                  | 395         | 11         | 3         | 423         | 646         | 5             |
| 17:30              | 8                            | 0        | 6          | 0        | 14         | 7                   | 175         | 4         | 0         | 186         | 0                            | 0        | 0        | 0        | 0         | 12                  | 341         | 18         | 2         | 373         | 573         | 2             |
| 17:45              | 8                            | 0        | 6          | 0        | 14         | 4                   | 139         | 1         | 1         | 145         | 0                            | 0        | 0        | 0        | 0         | 9                   | 353         | 16         | 3         | 381         | 540         | 4             |
| <b>Total</b>       | <b>29</b>                    | <b>0</b> | <b>29</b>  | <b>0</b> | <b>58</b>  | <b>18</b>           | <b>656</b>  | <b>20</b> | <b>5</b>  | <b>699</b>  | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>41</b>           | <b>1437</b> | <b>52</b>  | <b>8</b>  | <b>1538</b> | <b>2295</b> | <b>13</b>     |
| <b>Grand Total</b> | <b>81</b>                    | <b>2</b> | <b>126</b> | <b>0</b> | <b>209</b> | <b>84</b>           | <b>3051</b> | <b>63</b> | <b>13</b> | <b>3211</b> | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>79</b>           | <b>3314</b> | <b>119</b> | <b>17</b> | <b>3529</b> | <b>6949</b> | <b>30</b>     |
| Apprch %           | 38.8%                        | 1.0%     | 60.3%      | 0.0%     |            | 2.6%                | 95.0%       | 2.0%      | 0.4%      |             | 0.0%                         | 0.0%     | 0.0%     | 0.0%     |           | 2.2%                | 93.9%       | 3.4%       | 0.5%      |             |             |               |
| Total %            | 1.2%                         | 0.0%     | 1.8%       | 0.0%     | 3.0%       | 1.2%                | 43.9%       | 0.9%      | 0.2%      | 46.2%       | 0.0%                         | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 1.1%                | 47.7%       | 1.7%       | 0.2%      | 50.8%       | 100.0%      |               |

| AM PEAK HOUR                                      | Park View Terrace Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Park View Terrace Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|------------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|------------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                         | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                         | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                              |      |       |        |           |                     |       |       |        |           |                              |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                              |      |       |        |           |                     |       |       |        |           |                              |      |       |        |           |                     |       |       |        |           |       |
| 8:00  | 4                            | 2    | 4     | 0      | 10        | 26                  | 263   | 2     | 0      | 291       | 0                            | 0    | 0     | 0      | 0         | 3                   | 121   | 17    | 0      | 141       | 442   |
| 8:15  | 3                            | 0    | 12    | 0      | 15        | 4                   | 313   | 5     | 0      | 322       | 0                            | 0    | 0     | 0      | 0         | 1                   | 128   | 4     | 0      | 133       | 470   |
| 8:30  | 9                            | 0    | 20    | 0      | 29        | 3                   | 294   | 2     | 1      | 300       | 0                            | 0    | 0     | 0      | 0         | 7                   | 100   | 3     | 3      | 113       | 442   |
| 8:45  | 4                            | 0    | 13    | 0      | 17        | 8                   | 247   | 4     | 0      | 259       | 0                            | 0    | 0     | 0      | 0         | 5                   | 112   | 6     | 0      | 123       | 399   |
| Total Volume                                      | 20                           | 2    | 49    | 0      | 71        | 41                  | 1117  | 13    | 1      | 1172      | 0                            | 0    | 0     | 0      | 0         | 16                  | 461   | 30    | 3      | 510       | 1753  |
| % App Total                                       | 28.2%                        | 2.8% | 69.0% | 0.0%   |           | 3.5%                | 95.3% | 1.1%  | 0.1%   |           | 0.0%                         | 0.0% | 0.0%  | 0.0%   |           | 3.1%                | 90.4% | 5.9%  | 0.6%   |           |       |
| PHF   | .556                         | .250 | .613  | .000   | .612      | .394                | .892  | .650  | .250   | .910      | .000                         | .000 | .000  | .000   | .000      | .571                | .900  | .441  | .250   | .904      | .932  |

| PM PEAK HOUR                                      | Park View Terrace Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Park View Terrace Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|------------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|------------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                         | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                         | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                              |      |       |        |           |                     |       |       |        |           |                              |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                              |      |       |        |           |                     |       |       |        |           |                              |      |       |        |           |                     |       |       |        |           |       |
| 17:00   | 7                            | 0    | 8     | 0      | 15        | 3                   | 152   | 3     | 2      | 160       | 0                            | 0    | 0     | 0      | 0         | 6                   | 348   | 7     | 0      | 361       | 536   |
| 17:15   | 6                            | 0    | 9     | 0      | 15        | 4                   | 190   | 12    | 2      | 208       | 0                            | 0    | 0     | 0      | 0         | 14                  | 395   | 11    | 3      | 423       | 646   |
| 17:30   | 8                            | 0    | 6     | 0      | 14        | 7                   | 175   | 4     | 0      | 186       | 0                            | 0    | 0     | 0      | 0         | 12                  | 341   | 18    | 2      | 373       | 573   |
| 17:45   | 8                            | 0    | 6     | 0      | 14        | 4                   | 139   | 1     | 1      | 145       | 0                            | 0    | 0     | 0      | 0         | 9                   | 353   | 16    | 3      | 381       | 540   |
| Total Volume                                      | 29                           | 0    | 29    | 0      | 58        | 18                  | 656   | 20    | 5      | 699       | 0                            | 0    | 0     | 0      | 0         | 41                  | 1437  | 52    | 8      | 1538      | 2295  |
| % App Total                                       | 50.0%                        | 0.0% | 50.0% | 0.0%   |           | 2.6%                | 93.8% | 2.9%  | 0.7%   |           | 0.0%                         | 0.0% | 0.0%  | 0.0%   |           | 2.7%                | 93.4% | 3.4%  | 0.5%   |           |       |
| PHF   | .906                         | .000 | .806  | .000   | .967      | .643                | .863  | .417  | .625   | .840      | .000                         | .000 | .000  | .000   | .000      | .732                | .909  | .722  | .667   | .909      | .888  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-006 Park View Terrace & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Park View Terrace Southbound |          |          |            |           | Grand Ave Westbound |            |          |          |            | Park View Terrace Northbound |          |          |            |           | Grand Ave Eastbound |            |           |            |            | Total      | Peds Total  |
|--------------------|------------------------------|----------|----------|------------|-----------|---------------------|------------|----------|----------|------------|------------------------------|----------|----------|------------|-----------|---------------------|------------|-----------|------------|------------|------------|-------------|
|                    | LEFT                         | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS     | APP.TOTAL  | LEFT                         | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  |            |             |
| 7:00               | 0                            | 0        | 0        | 14         | 0         | 0                   | 10         | 0        | 1        | 10         | 0                            | 0        | 0        | 17         | 0         | 0                   | 6          | 0         | 9          | 6          | 16         | 41          |
| 7:15               | 0                            | 0        | 0        | 20         | 0         | 0                   | 7          | 0        | 0        | 7          | 0                            | 0        | 0        | 17         | 0         | 0                   | 3          | 0         | 9          | 3          | 10         | 46          |
| 7:30               | 0                            | 0        | 0        | 16         | 0         | 0                   | 10         | 0        | 0        | 10         | 0                            | 0        | 0        | 36         | 0         | 0                   | 7          | 0         | 5          | 7          | 17         | 57          |
| 7:45               | 0                            | 0        | 1        | 35         | 1         | 0                   | 26         | 0        | 0        | 26         | 0                            | 0        | 0        | 26         | 0         | 0                   | 7          | 0         | 21         | 7          | 34         | 82          |
| <b>Total</b>       | <b>0</b>                     | <b>0</b> | <b>1</b> | <b>85</b>  | <b>1</b>  | <b>0</b>            | <b>53</b>  | <b>0</b> | <b>1</b> | <b>53</b>  | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>96</b>  | <b>0</b>  | <b>0</b>            | <b>23</b>  | <b>0</b>  | <b>44</b>  | <b>23</b>  | <b>77</b>  | <b>226</b>  |
| 8:00               | 0                            | 0        | 1        | 40         | 1         | 0                   | 15         | 0        | 0        | 15         | 1                            | 0        | 0        | 39         | 1         | 0                   | 6          | 0         | 30         | 6          | 23         | 109         |
| 8:15               | 0                            | 0        | 0        | 69         | 0         | 0                   | 22         | 0        | 0        | 22         | 0                            | 0        | 0        | 54         | 0         | 0                   | 3          | 0         | 100        | 3          | 25         | 223         |
| 8:30               | 0                            | 0        | 0        | 46         | 0         | 0                   | 26         | 0        | 0        | 26         | 0                            | 0        | 0        | 62         | 0         | 1                   | 4          | 0         | 39         | 5          | 31         | 147         |
| 8:45               | 0                            | 0        | 0        | 57         | 0         | 0                   | 20         | 0        | 0        | 20         | 0                            | 0        | 0        | 44         | 0         | 0                   | 4          | 0         | 17         | 4          | 24         | 118         |
| <b>Total</b>       | <b>0</b>                     | <b>0</b> | <b>1</b> | <b>212</b> | <b>1</b>  | <b>0</b>            | <b>83</b>  | <b>0</b> | <b>0</b> | <b>83</b>  | <b>1</b>                     | <b>0</b> | <b>0</b> | <b>199</b> | <b>1</b>  | <b>1</b>            | <b>17</b>  | <b>0</b>  | <b>186</b> | <b>18</b>  | <b>103</b> | <b>597</b>  |
| 16:00              | 0                            | 0        | 0        | 26         | 0         | 0                   | 4          | 1        | 0        | 5          | 0                            | 0        | 0        | 50         | 0         | 0                   | 26         | 1         | 12         | 27         | 32         | 88          |
| 16:15              | 0                            | 0        | 0        | 18         | 0         | 0                   | 6          | 0        | 0        | 6          | 0                            | 0        | 0        | 37         | 0         | 0                   | 18         | 1         | 21         | 19         | 25         | 76          |
| 16:30              | 0                            | 0        | 0        | 38         | 0         | 0                   | 7          | 0        | 0        | 7          | 0                            | 0        | 0        | 39         | 0         | 0                   | 21         | 0         | 12         | 21         | 28         | 89          |
| 16:45              | 1                            | 0        | 0        | 46         | 1         | 0                   | 3          | 0        | 0        | 3          | 0                            | 0        | 0        | 48         | 0         | 0                   | 21         | 3         | 25         | 24         | 28         | 119         |
| <b>Total</b>       | <b>1</b>                     | <b>0</b> | <b>0</b> | <b>128</b> | <b>1</b>  | <b>0</b>            | <b>20</b>  | <b>1</b> | <b>0</b> | <b>21</b>  | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>174</b> | <b>0</b>  | <b>0</b>            | <b>86</b>  | <b>5</b>  | <b>70</b>  | <b>91</b>  | <b>113</b> | <b>372</b>  |
| 17:00              | 0                            | 0        | 0        | 53         | 0         | 0                   | 7          | 0        | 0        | 7          | 0                            | 0        | 0        | 35         | 0         | 0                   | 29         | 0         | 11         | 29         | 36         | 99          |
| 17:15              | 2                            | 0        | 0        | 33         | 2         | 0                   | 6          | 0        | 0        | 6          | 0                            | 0        | 1        | 76         | 1         | 0                   | 34         | 1         | 12         | 35         | 44         | 121         |
| 17:30              | 0                            | 0        | 0        | 28         | 0         | 0                   | 1          | 0        | 0        | 1          | 0                            | 0        | 0        | 61         | 0         | 0                   | 28         | 2         | 10         | 30         | 31         | 99          |
| 17:45              | 1                            | 0        | 0        | 36         | 1         | 0                   | 2          | 0        | 0        | 2          | 0                            | 0        | 0        | 106        | 0         | 0                   | 31         | 2         | 25         | 33         | 36         | 167         |
| <b>Total</b>       | <b>3</b>                     | <b>0</b> | <b>0</b> | <b>150</b> | <b>3</b>  | <b>0</b>            | <b>16</b>  | <b>0</b> | <b>0</b> | <b>16</b>  | <b>0</b>                     | <b>0</b> | <b>1</b> | <b>278</b> | <b>1</b>  | <b>0</b>            | <b>122</b> | <b>5</b>  | <b>58</b>  | <b>127</b> | <b>147</b> | <b>486</b>  |
| <b>Grand Total</b> | <b>4</b>                     | <b>0</b> | <b>2</b> | <b>575</b> | <b>6</b>  | <b>0</b>            | <b>172</b> | <b>1</b> | <b>1</b> | <b>173</b> | <b>1</b>                     | <b>0</b> | <b>1</b> | <b>747</b> | <b>2</b>  | <b>1</b>            | <b>248</b> | <b>10</b> | <b>358</b> | <b>259</b> | <b>440</b> | <b>1681</b> |
| Apprch %           | 66.7%                        | 0.0%     | 33.3%    |            |           | 0.0%                | 99.4%      | 0.6%     |          |            | 50.0%                        | 0.0%     | 50.0%    |            |           | 0.4%                | 95.8%      | 3.9%      |            |            |            |             |
| Total %            | 0.9%                         | 0.0%     | 0.5%     |            | 1.4%      | 0.0%                | 39.1%      | 0.2%     |          | 39.3%      | 0.2%                         | 0.0%     | 0.2%     |            | 0.5%      | 0.2%                | 56.4%      | 2.3%      |            | 58.9%      | 100.0%     |             |

| AM PEAK HOUR                                      | Park View Terrace Southbound |      |        |      |           | Grand Ave Westbound |        |       |      |           | Park View Terrace Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |  |
|---|------------------------------|------|--------|------|-----------|---------------------|--------|-------|------|-----------|------------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                         | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                         | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                              |      |        |      |           |                     |        |       |      |           |                              |      |       |      |           |                     |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                              |      |        |      |           |                     |        |       |      |           |                              |      |       |      |           |                     |       |       |      |           |       |  |
| 8:00  | 0                            | 0    | 1      | 40   | 1         | 0                   | 15     | 0     | 0    | 15        | 1                            | 0    | 0     | 39   | 1         | 0                   | 6     | 0     | 30   | 6         | 23    |  |
| 8:15  | 0                            | 0    | 0      | 69   | 0         | 0                   | 22     | 0     | 0    | 22        | 0                            | 0    | 0     | 54   | 0         | 0                   | 3     | 0     | 100  | 3         | 25    |  |
| 8:30  | 0                            | 0    | 0      | 46   | 0         | 0                   | 26     | 0     | 0    | 26        | 0                            | 0    | 0     | 62   | 0         | 1                   | 4     | 0     | 39   | 5         | 31    |  |
| 8:45  | 0                            | 0    | 0      | 57   | 0         | 0                   | 20     | 0     | 0    | 20        | 0                            | 0    | 0     | 44   | 0         | 0                   | 4     | 0     | 17   | 4         | 24    |  |
| Total Volume                                      | 0                            | 0    | 1      | 212  | 1         | 0                   | 83     | 0     | 0    | 83        | 1                            | 0    | 0     | 199  | 1         | 1                   | 17    | 0     | 186  | 18        | 103   |  |
| % App Total                                       | 0.0%                         | 0.0% | 100.0% |      |           | 0.0%                | 100.0% | 0.0%  |      |           | 100.0%                       | 0.0% | 0.0%  |      |           | 5.6%                | 94.4% | 0.0%  |      |           |       |  |
| PHF   | .000                         | .000 | .250   |      | .250      | .000                | .798   | .000  |      | .798      | .250                         | .000 | .000  |      | .250      | .250                | .708  | .000  |      | .750      | .831  |  |

| PM PEAK HOUR                                      | Park View Terrace Southbound |      |       |      |           | Grand Ave Westbound |        |       |      |           | Park View Terrace Northbound |      |        |      |           | Grand Ave Eastbound |       |       |      |           | Total |  |
|---|------------------------------|------|-------|------|-----------|---------------------|--------|-------|------|-----------|------------------------------|------|--------|------|-----------|---------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                         | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                         | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                              |      |       |      |           |                     |        |       |      |           |                              |      |        |      |           |                     |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                              |      |       |      |           |                     |        |       |      |           |                              |      |        |      |           |                     |       |       |      |           |       |  |
| 17:00   | 0                            | 0    | 0     | 53   | 0         | 0                   | 7      | 0     | 0    | 7         | 0                            | 0    | 0      | 35   | 0         | 0                   | 29    | 0     | 11   | 29        | 36    |  |
| 17:15   | 2                            | 0    | 0     | 33   | 2         | 0                   | 6      | 0     | 0    | 6         | 0                            | 0    | 1      | 76   | 1         | 0                   | 34    | 1     | 12   | 35        | 44    |  |
| 17:30   | 0                            | 0    | 0     | 28   | 0         | 0                   | 1      | 0     | 0    | 1         | 0                            | 0    | 0      | 61   | 0         | 0                   | 28    | 2     | 10   | 30        | 31    |  |
| 17:45   | 1                            | 0    | 0     | 36   | 1         | 0                   | 2      | 0     | 0    | 2         | 0                            | 0    | 0      | 106  | 0         | 0                   | 31    | 2     | 25   | 33        | 36    |  |
| Total Volume                                      | 3                            | 0    | 0     | 150  | 3         | 0                   | 16     | 0     | 0    | 16        | 0                            | 0    | 1      | 278  | 1         | 0                   | 122   | 5     | 58   | 127       | 147   |  |
| % App Total                                       | 100.0%                       | 0.0% | 0.0%  |      |           | 0.0%                | 100.0% | 0.0%  |      |           | 0.0%                         | 0.0% | 100.0% |      |           | 0.0%                | 96.1% | 3.9%  |      |           |       |  |
| PHF   | .375                         | .000 | .000  |      | .375      | .000                | .571   | .000  |      | .571      | .000                         | .000 | .250   |      | .250      | .000                | .897  | .625  |      | .907      | .835  |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-009 Perkins St & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | Perkins St Southbound |           |            |          |            | Grand Ave Westbound |             |            |          |             | Perkins St Northbound |           |           |          |            | Grand Ave Eastbound |             |            |          |             | Total       | Utturns Total |
|--------------------|-----------------------|-----------|------------|----------|------------|---------------------|-------------|------------|----------|-------------|-----------------------|-----------|-----------|----------|------------|---------------------|-------------|------------|----------|-------------|-------------|---------------|
|                    | LEFT                  | THRU      | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU      | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   |             |               |
| 7:00               | 1                     | 0         | 23         | 0        | 24         | 4                   | 132         | 6          | 0        | 142         | 3                     | 0         | 1         | 0        | 4          | 6                   | 59          | 2          | 0        | 67          | 237         | 0             |
| 7:15               | 6                     | 1         | 23         | 0        | 30         | 3                   | 135         | 5          | 0        | 143         | 4                     | 0         | 2         | 0        | 6          | 4                   | 59          | 0          | 0        | 63          | 242         | 0             |
| 7:30               | 13                    | 2         | 22         | 0        | 37         | 5                   | 155         | 3          | 0        | 163         | 2                     | 0         | 1         | 0        | 3          | 12                  | 67          | 1          | 0        | 80          | 283         | 0             |
| 7:45               | 12                    | 1         | 25         | 0        | 38         | 7                   | 227         | 6          | 1        | 241         | 3                     | 0         | 2         | 0        | 5          | 9                   | 66          | 6          | 0        | 81          | 365         | 1             |
| <b>Total</b>       | <b>32</b>             | <b>4</b>  | <b>93</b>  | <b>0</b> | <b>129</b> | <b>19</b>           | <b>649</b>  | <b>20</b>  | <b>1</b> | <b>689</b>  | <b>12</b>             | <b>0</b>  | <b>6</b>  | <b>0</b> | <b>18</b>  | <b>31</b>           | <b>251</b>  | <b>9</b>   | <b>0</b> | <b>291</b>  | <b>1127</b> | <b>1</b>      |
| 8:00               | 13                    | 1         | 32         | 0        | 46         | 4                   | 241         | 5          | 0        | 250         | 20                    | 5         | 4         | 0        | 29         | 11                  | 110         | 8          | 0        | 129         | 454         | 0             |
| 8:15               | 10                    | 3         | 31         | 0        | 44         | 6                   | 258         | 6          | 1        | 271         | 16                    | 3         | 3         | 0        | 22         | 6                   | 106         | 2          | 0        | 114         | 451         | 1             |
| 8:30               | 11                    | 2         | 31         | 0        | 44         | 11                  | 242         | 8          | 0        | 261         | 2                     | 1         | 1         | 0        | 4          | 8                   | 86          | 7          | 0        | 101         | 410         | 0             |
| 8:45               | 13                    | 1         | 14         | 0        | 28         | 8                   | 253         | 9          | 1        | 271         | 2                     | 1         | 0         | 0        | 3          | 8                   | 94          | 10         | 0        | 112         | 414         | 1             |
| <b>Total</b>       | <b>47</b>             | <b>7</b>  | <b>108</b> | <b>0</b> | <b>162</b> | <b>29</b>           | <b>994</b>  | <b>28</b>  | <b>2</b> | <b>1053</b> | <b>40</b>             | <b>10</b> | <b>8</b>  | <b>0</b> | <b>58</b>  | <b>33</b>           | <b>396</b>  | <b>27</b>  | <b>0</b> | <b>456</b>  | <b>1729</b> | <b>2</b>      |
| 16:00              | 14                    | 1         | 13         | 0        | 28         | 5                   | 115         | 17         | 0        | 137         | 4                     | 0         | 4         | 0        | 8          | 15                  | 262         | 11         | 1        | 289         | 462         | 1             |
| 16:15              | 18                    | 1         | 10         | 0        | 29         | 7                   | 128         | 13         | 0        | 148         | 4                     | 0         | 2         | 0        | 6          | 12                  | 257         | 5          | 1        | 275         | 458         | 1             |
| 16:30              | 20                    | 1         | 16         | 0        | 37         | 8                   | 134         | 11         | 0        | 153         | 1                     | 2         | 8         | 0        | 11         | 17                  | 291         | 7          | 1        | 316         | 517         | 1             |
| 16:45              | 23                    | 1         | 15         | 0        | 39         | 10                  | 129         | 22         | 0        | 161         | 3                     | 0         | 6         | 0        | 9          | 15                  | 254         | 9          | 0        | 278         | 487         | 0             |
| <b>Total</b>       | <b>75</b>             | <b>4</b>  | <b>54</b>  | <b>0</b> | <b>133</b> | <b>30</b>           | <b>506</b>  | <b>63</b>  | <b>0</b> | <b>599</b>  | <b>12</b>             | <b>2</b>  | <b>20</b> | <b>0</b> | <b>34</b>  | <b>59</b>           | <b>1064</b> | <b>32</b>  | <b>3</b> | <b>1158</b> | <b>1924</b> | <b>3</b>      |
| 17:00              | 25                    | 3         | 19         | 0        | 47         | 12                  | 132         | 9          | 2        | 155         | 8                     | 3         | 8         | 0        | 19         | 14                  | 331         | 8          | 0        | 353         | 574         | 2             |
| 17:15              | 20                    | 4         | 22         | 0        | 46         | 2                   | 157         | 17         | 0        | 176         | 11                    | 1         | 10        | 0        | 22         | 15                  | 329         | 7          | 1        | 352         | 596         | 1             |
| 17:30              | 25                    | 4         | 16         | 0        | 45         | 5                   | 157         | 13         | 0        | 175         | 7                     | 1         | 6         | 0        | 14         | 23                  | 322         | 8          | 0        | 353         | 587         | 0             |
| 17:45              | 24                    | 2         | 10         | 0        | 36         | 10                  | 125         | 17         | 3        | 155         | 11                    | 0         | 12        | 0        | 23         | 21                  | 301         | 10         | 1        | 333         | 547         | 4             |
| <b>Total</b>       | <b>94</b>             | <b>13</b> | <b>67</b>  | <b>0</b> | <b>174</b> | <b>29</b>           | <b>571</b>  | <b>56</b>  | <b>5</b> | <b>661</b>  | <b>37</b>             | <b>5</b>  | <b>36</b> | <b>0</b> | <b>78</b>  | <b>73</b>           | <b>1283</b> | <b>33</b>  | <b>2</b> | <b>1391</b> | <b>2304</b> | <b>7</b>      |
| <b>Grand Total</b> | <b>248</b>            | <b>28</b> | <b>322</b> | <b>0</b> | <b>598</b> | <b>107</b>          | <b>2720</b> | <b>167</b> | <b>8</b> | <b>3002</b> | <b>101</b>            | <b>17</b> | <b>70</b> | <b>0</b> | <b>188</b> | <b>196</b>          | <b>2994</b> | <b>101</b> | <b>5</b> | <b>3296</b> | <b>7084</b> | <b>13</b>     |
| Apprch %           | 41.5%                 | 4.7%      | 53.8%      | 0.0%     |            | 3.6%                | 90.6%       | 5.6%       | 0.3%     |             | 53.7%                 | 9.0%      | 37.2%     | 0.0%     |            | 5.9%                | 90.8%       | 3.1%       | 0.2%     |             |             |               |
| Total %            | 3.5%                  | 0.4%      | 4.5%       | 0.0%     | 8.4%       | 1.5%                | 38.4%       | 2.4%       | 0.1%     | 42.4%       | 1.4%                  | 0.2%      | 1.0%      | 0.0%     | 2.7%       | 2.8%                | 42.3%       | 1.4%       | 0.1%     | 46.5%       | 100.0%      |               |

| AM PEAK HOUR                                      | Perkins St Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Perkins St Northbound |       |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |       |
| 8:00  | 13                    | 1    | 32    | 0      | 46        | 4                   | 241   | 5     | 0      | 250       | 20                    | 5     | 4     | 0      | 29        | 11                  | 110   | 8     | 0      | 129       | 454   |
| 8:15  | 10                    | 3    | 31    | 0      | 44        | 6                   | 258   | 6     | 1      | 271       | 16                    | 3     | 3     | 0      | 22        | 6                   | 106   | 2     | 0      | 114       | 451   |
| 8:30  | 11                    | 2    | 31    | 0      | 44        | 11                  | 242   | 8     | 0      | 261       | 2                     | 1     | 1     | 0      | 4         | 8                   | 86    | 7     | 0      | 101       | 410   |
| 8:45  | 13                    | 1    | 14    | 0      | 28        | 8                   | 253   | 9     | 1      | 271       | 2                     | 1     | 0     | 0      | 3         | 8                   | 94    | 10    | 0      | 112       | 414   |
| Total Volume                                      | 47                    | 7    | 108   | 0      | 162       | 29                  | 994   | 28    | 2      | 1053      | 40                    | 10    | 8     | 0      | 58        | 33                  | 396   | 27    | 0      | 456       | 1729  |
| % App Total                                       | 29.0%                 | 4.3% | 66.7% | 0.0%   |           | 2.8%                | 94.4% | 2.7%  | 0.2%   |           | 69.0%                 | 17.2% | 13.8% | 0.0%   |           | 7.2%                | 86.8% | 5.9%  | 0.0%   |           |       |
| PHF   | .904                  | .583 | .844  | .000   | .880      | .659                | .963  | .778  | .500   | .971      | .500                  | .500  | .500  | .000   | .500      | .750                | .900  | .675  | .000   | .884      | .952  |

| PM PEAK HOUR                                      | Perkins St Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Perkins St Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                       |      |       |        |           |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |      |       |        |           |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |       |
| 17:00   | 25                    | 3    | 19    | 0      | 47        | 12                  | 132   | 9     | 2      | 155       | 8                     | 3    | 8     | 0      | 19        | 14                  | 331   | 8     | 0      | 353       | 574   |
| 17:15   | 20                    | 4    | 22    | 0      | 46        | 2                   | 157   | 17    | 0      | 176       | 11                    | 1    | 10    | 0      | 22        | 15                  | 329   | 7     | 1      | 352       | 596   |
| 17:30   | 25                    | 4    | 16    | 0      | 45        | 5                   | 157   | 13    | 0      | 175       | 7                     | 1    | 6     | 0      | 14        | 23                  | 322   | 8     | 0      | 353       | 587   |
| 17:45   | 24                    | 2    | 10    | 0      | 36        | 10                  | 125   | 17    | 3      | 155       | 11                    | 0    | 12    | 0      | 23        | 21                  | 301   | 10    | 1      | 333       | 547   |
| Total Volume                                      | 94                    | 13   | 67    | 0      | 174       | 29                  | 571   | 56    | 5      | 661       | 37                    | 5    | 36    | 0      | 78        | 73                  | 1283  | 33    | 2      | 1391      | 2304  |
| % App Total                                       | 54.0%                 | 7.5% | 38.5% | 0.0%   |           | 4.4%                | 86.4% | 8.5%  | 0.8%   |           | 47.4%                 | 6.4% | 46.2% | 0.0%   |           | 5.2%                | 92.2% | 2.4%  | 0.1%   |           |       |
| PHF   | .940                  | .813 | .761  | .000   | .926      | .604                | .909  | .824  | .417   | .939      | .841                  | .417 | .750  | .000   | .848      | .793                | .969  | .825  | .500   | .985      | .966  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
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File Name : 17-7003-009 Perkins St & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Perkins St Southbound |          |          |            |           | Grand Ave Westbound |            |          |            |            | Perkins St Northbound |          |          |            |           | Grand Ave Eastbound |            |          |            |            | Total      | Peds Total  |
|--------------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|------------|-------------|
|                    | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  |            |             |
| 7:00               | 0                     | 0        | 1        | 6          | 1         | 0                   | 5          | 0        | 2          | 5          | 0                     | 0        | 0        | 12         | 0         | 0                   | 6          | 0        | 3          | 6          | 12         | 23          |
| 7:15               | 0                     | 0        | 0        | 6          | 0         | 0                   | 5          | 0        | 4          | 5          | 0                     | 0        | 0        | 16         | 0         | 0                   | 3          | 0        | 1          | 3          | 8          | 27          |
| 7:30               | 0                     | 0        | 1        | 9          | 1         | 0                   | 9          | 0        | 5          | 9          | 0                     | 0        | 0        | 21         | 0         | 0                   | 7          | 0        | 12         | 7          | 17         | 47          |
| 7:45               | 0                     | 0        | 1        | 8          | 1         | 0                   | 17         | 0        | 12         | 17         | 0                     | 0        | 0        | 22         | 0         | 0                   | 5          | 0        | 10         | 5          | 23         | 52          |
| <b>Total</b>       | <b>0</b>              | <b>0</b> | <b>3</b> | <b>29</b>  | <b>3</b>  | <b>0</b>            | <b>36</b>  | <b>0</b> | <b>23</b>  | <b>36</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>71</b>  | <b>0</b>  | <b>0</b>            | <b>21</b>  | <b>0</b> | <b>26</b>  | <b>21</b>  | <b>60</b>  | <b>149</b>  |
| 8:00               | 0                     | 0        | 2        | 32         | 2         | 0                   | 28         | 0        | 11         | 28         | 0                     | 0        | 0        | 26         | 0         | 0                   | 6          | 1        | 7          | 7          | 37         | 76          |
| 8:15               | 0                     | 0        | 2        | 26         | 2         | 0                   | 20         | 0        | 6          | 20         | 0                     | 0        | 2        | 39         | 2         | 0                   | 6          | 0        | 8          | 6          | 30         | 79          |
| 8:30               | 0                     | 1        | 0        | 28         | 1         | 0                   | 17         | 0        | 11         | 17         | 0                     | 0        | 0        | 37         | 0         | 0                   | 4          | 0        | 13         | 4          | 22         | 89          |
| 8:45               | 0                     | 0        | 0        | 26         | 0         | 1                   | 22         | 0        | 9          | 23         | 0                     | 0        | 0        | 31         | 0         | 0                   | 6          | 0        | 8          | 6          | 29         | 74          |
| <b>Total</b>       | <b>0</b>              | <b>1</b> | <b>4</b> | <b>112</b> | <b>5</b>  | <b>1</b>            | <b>87</b>  | <b>0</b> | <b>37</b>  | <b>88</b>  | <b>0</b>              | <b>0</b> | <b>2</b> | <b>133</b> | <b>2</b>  | <b>0</b>            | <b>22</b>  | <b>1</b> | <b>36</b>  | <b>23</b>  | <b>118</b> | <b>318</b>  |
| 16:00              | 1                     | 0        | 0        | 12         | 1         | 0                   | 5          | 0        | 13         | 5          | 0                     | 1        | 0        | 31         | 1         | 1                   | 18         | 0        | 9          | 19         | 26         | 65          |
| 16:15              | 0                     | 0        | 0        | 15         | 0         | 0                   | 1          | 0        | 13         | 1          | 0                     | 0        | 0        | 43         | 0         | 2                   | 17         | 0        | 20         | 19         | 20         | 91          |
| 16:30              | 0                     | 0        | 1        | 12         | 1         | 0                   | 2          | 0        | 6          | 2          | 0                     | 0        | 0        | 39         | 0         | 0                   | 16         | 0        | 12         | 16         | 19         | 69          |
| 16:45              | 0                     | 0        | 0        | 26         | 0         | 0                   | 2          | 0        | 16         | 2          | 0                     | 0        | 0        | 57         | 0         | 1                   | 22         | 0        | 25         | 23         | 25         | 124         |
| <b>Total</b>       | <b>1</b>              | <b>0</b> | <b>1</b> | <b>65</b>  | <b>2</b>  | <b>0</b>            | <b>10</b>  | <b>0</b> | <b>48</b>  | <b>10</b>  | <b>0</b>              | <b>1</b> | <b>0</b> | <b>170</b> | <b>1</b>  | <b>4</b>            | <b>73</b>  | <b>0</b> | <b>66</b>  | <b>77</b>  | <b>90</b>  | <b>349</b>  |
| 17:00              | 0                     | 0        | 0        | 31         | 0         | 0                   | 6          | 0        | 5          | 6          | 1                     | 0        | 1        | 49         | 2         | 1                   | 22         | 0        | 14         | 23         | 31         | 99          |
| 17:15              | 0                     | 0        | 0        | 28         | 0         | 0                   | 5          | 0        | 11         | 5          | 0                     | 2        | 0        | 60         | 2         | 0                   | 32         | 0        | 20         | 32         | 39         | 119         |
| 17:30              | 0                     | 0        | 0        | 34         | 0         | 0                   | 8          | 0        | 11         | 8          | 0                     | 0        | 0        | 51         | 0         | 2                   | 21         | 0        | 23         | 23         | 31         | 119         |
| 17:45              | 0                     | 0        | 0        | 18         | 0         | 0                   | 5          | 0        | 17         | 5          | 1                     | 1        | 0        | 92         | 2         | 2                   | 29         | 0        | 13         | 31         | 38         | 140         |
| <b>Total</b>       | <b>0</b>              | <b>0</b> | <b>0</b> | <b>111</b> | <b>0</b>  | <b>0</b>            | <b>24</b>  | <b>0</b> | <b>44</b>  | <b>24</b>  | <b>2</b>              | <b>3</b> | <b>1</b> | <b>252</b> | <b>6</b>  | <b>5</b>            | <b>104</b> | <b>0</b> | <b>70</b>  | <b>109</b> | <b>139</b> | <b>477</b>  |
| <b>Grand Total</b> | <b>1</b>              | <b>1</b> | <b>8</b> | <b>317</b> | <b>10</b> | <b>1</b>            | <b>157</b> | <b>0</b> | <b>152</b> | <b>158</b> | <b>2</b>              | <b>4</b> | <b>3</b> | <b>626</b> | <b>9</b>  | <b>9</b>            | <b>220</b> | <b>1</b> | <b>198</b> | <b>230</b> | <b>407</b> | <b>1293</b> |
| Apprch %           | 10.0%                 | 10.0%    | 80.0%    |            |           | 0.6%                | 99.4%      | 0.0%     |            |            | 22.2%                 | 44.4%    | 33.3%    |            |           | 3.9%                | 95.7%      | 0.4%     |            |            |            |             |
| Total %            | 0.2%                  | 0.2%     | 2.0%     |            | 2.5%      | 0.2%                | 38.6%      | 0.0%     |            | 38.8%      | 0.5%                  | 1.0%     | 0.7%     |            | 2.2%      | 2.2%                | 54.1%      | 0.2%     |            | 56.5%      | 100.0%     |             |

| AM PEAK HOUR                                      | Perkins St Southbound |       |       |      |           | Grand Ave Westbound |       |       |      |           | Perkins St Northbound |      |        |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|------|--------|------|-----------|---------------------|-------|-------|------|-----------|-------|
|   | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                       |       |       |      |           |                     |       |       |      |           |                       |      |        |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |       |       |      |           |                     |       |       |      |           |                       |      |        |      |           |                     |       |       |      |           |       |
| 8:00  | 0                     | 0     | 2     | 32   | 2         | 0                   | 28    | 0     | 11   | 28        | 0                     | 0    | 0      | 26   | 0         | 0                   | 6     | 1     | 7    | 7         | 37    |
| 8:15  | 0                     | 0     | 2     | 26   | 2         | 0                   | 20    | 0     | 6    | 20        | 0                     | 0    | 2      | 39   | 2         | 0                   | 6     | 0     | 8    | 6         | 30    |
| 8:30  | 0                     | 1     | 0     | 28   | 1         | 0                   | 17    | 0     | 11   | 17        | 0                     | 0    | 0      | 37   | 0         | 0                   | 4     | 0     | 13   | 4         | 22    |
| 8:45  | 0                     | 0     | 0     | 26   | 0         | 1                   | 22    | 0     | 9    | 23        | 0                     | 0    | 0      | 31   | 0         | 0                   | 6     | 0     | 8    | 6         | 29    |
| Total Volume                                      | 0                     | 1     | 4     | 112  | 5         | 1                   | 87    | 0     | 37   | 88        | 0                     | 0    | 2      | 133  | 2         | 0                   | 22    | 1     | 36   | 23        | 118   |
| % App Total                                       | 0.0%                  | 20.0% | 80.0% |      |           | 1.1%                | 98.9% | 0.0%  |      |           | 0.0%                  | 0.0% | 100.0% |      |           | 0.0%                | 95.7% | 4.3%  |      |           |       |
| PHF   | .000                  | .250  | .500  |      | .625      | .250                | .777  | .000  |      | .786      | .000                  | .000 | .250   |      | .250      | .000                | .917  | .250  |      | .821      | .797  |

| PM PEAK HOUR                                      | Perkins St Southbound |      |       |      |           | Grand Ave Westbound |        |       |      |           | Perkins St Northbound |       |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|-----------------------|------|-------|------|-----------|---------------------|--------|-------|------|-----------|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                       |      |       |      |           |                     |        |       |      |           |                       |       |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |      |       |      |           |                     |        |       |      |           |                       |       |       |      |           |                     |       |       |      |           |       |
| 17:00   | 0                     | 0    | 0     | 31   | 0         | 0                   | 6      | 0     | 5    | 6         | 1                     | 0     | 1     | 49   | 2         | 1                   | 22    | 0     | 14   | 23        | 31    |
| 17:15   | 0                     | 0    | 0     | 28   | 0         | 0                   | 5      | 0     | 11   | 5         | 0                     | 2     | 0     | 60   | 2         | 0                   | 32    | 0     | 20   | 32        | 39    |
| 17:30   | 0                     | 0    | 0     | 34   | 0         | 0                   | 8      | 0     | 11   | 8         | 0                     | 0     | 0     | 51   | 0         | 2                   | 21    | 0     | 23   | 23        | 31    |
| 17:45   | 0                     | 0    | 0     | 18   | 0         | 0                   | 5      | 0     | 17   | 5         | 1                     | 1     | 0     | 92   | 2         | 2                   | 29    | 0     | 13   | 31        | 38    |
| Total Volume                                      | 0                     | 0    | 0     | 111  | 0         | 0                   | 24     | 0     | 44   | 24        | 2                     | 3     | 1     | 252  | 6         | 5                   | 104   | 0     | 70   | 109       | 139   |
| % App Total                                       | 0.0%                  | 0.0% | 0.0%  |      |           | 0.0%                | 100.0% | 0.0%  |      |           | 33.3%                 | 50.0% | 16.7% |      |           | 4.6%                | 95.4% | 0.0%  |      |           |       |
| PHF   | .000                  | .000 | .000  |      | .000      | .000                | .750   | .000  |      | .750      | .500                  | .375  | .250  |      | .750      | .625                | .813  | .000  |      | .852      | .891  |



## National Data and Surveying Services

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-007 Stalen Ave & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Uturns

| START TIME         | Stalen Ave Southbound |           |            |          |            | Grand Ave Westbound |             |            |          |             | Stalen Ave Northbound |          |           |          |            | Grand Ave Eastbound |             |           |          |             | Total       | Uturns Total |
|--------------------|-----------------------|-----------|------------|----------|------------|---------------------|-------------|------------|----------|-------------|-----------------------|----------|-----------|----------|------------|---------------------|-------------|-----------|----------|-------------|-------------|--------------|
|                    | LEFT                  | THRU      | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU     | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT     | UTURNS   | APP.TOTAL   |             |              |
| 7:00               | 4                     | 0         | 4          | 0        | 8          | 2                   | 126         | 2          | 0        | 130         | 1                     | 0        | 2         | 0        | 3          | 1                   | 61          | 0         | 0        | 62          | 203         | 0            |
| 7:15               | 6                     | 0         | 6          | 0        | 12         | 2                   | 136         | 2          | 0        | 140         | 1                     | 0        | 2         | 0        | 3          | 2                   | 65          | 0         | 0        | 67          | 222         | 0            |
| 7:30               | 6                     | 0         | 4          | 0        | 10         | 2                   | 165         | 6          | 0        | 173         | 1                     | 0        | 3         | 0        | 4          | 5                   | 77          | 0         | 0        | 82          | 269         | 0            |
| 7:45               | 6                     | 0         | 7          | 0        | 13         | 8                   | 234         | 7          | 0        | 249         | 2                     | 0        | 8         | 0        | 10         | 2                   | 81          | 3         | 0        | 86          | 358         | 0            |
| <b>Total</b>       | <b>22</b>             | <b>0</b>  | <b>21</b>  | <b>0</b> | <b>43</b>  | <b>14</b>           | <b>661</b>  | <b>17</b>  | <b>0</b> | <b>692</b>  | <b>5</b>              | <b>0</b> | <b>15</b> | <b>0</b> | <b>20</b>  | <b>10</b>           | <b>284</b>  | <b>3</b>  | <b>0</b> | <b>297</b>  | <b>1052</b> | <b>0</b>     |
| 8:00               | 2                     | 1         | 3          | 0        | 6          | 3                   | 241         | 6          | 0        | 250         | 2                     | 1        | 1         | 0        | 4          | 4                   | 113         | 3         | 0        | 120         | 380         | 0            |
| 8:15               | 7                     | 0         | 6          | 0        | 13         | 8                   | 275         | 7          | 0        | 290         | 5                     | 0        | 6         | 0        | 11         | 4                   | 109         | 1         | 0        | 114         | 428         | 0            |
| 8:30               | 5                     | 0         | 3          | 0        | 8          | 9                   | 269         | 9          | 1        | 288         | 1                     | 1        | 6         | 0        | 8          | 1                   | 111         | 0         | 0        | 112         | 416         | 1            |
| 8:45               | 8                     | 0         | 9          | 0        | 17         | 8                   | 265         | 10         | 0        | 283         | 3                     | 0        | 3         | 0        | 6          | 3                   | 103         | 4         | 0        | 110         | 416         | 0            |
| <b>Total</b>       | <b>22</b>             | <b>1</b>  | <b>21</b>  | <b>0</b> | <b>44</b>  | <b>28</b>           | <b>1050</b> | <b>32</b>  | <b>1</b> | <b>1111</b> | <b>11</b>             | <b>2</b> | <b>16</b> | <b>0</b> | <b>29</b>  | <b>12</b>           | <b>436</b>  | <b>8</b>  | <b>0</b> | <b>456</b>  | <b>1640</b> | <b>1</b>     |
| 16:00              | 5                     | 2         | 9          | 0        | 16         | 6                   | 129         | 9          | 0        | 144         | 5                     | 0        | 4         | 0        | 9          | 7                   | 270         | 3         | 0        | 280         | 449         | 0            |
| 16:15              | 8                     | 0         | 6          | 0        | 14         | 4                   | 146         | 9          | 0        | 159         | 3                     | 0        | 10        | 0        | 13         | 7                   | 280         | 2         | 1        | 290         | 476         | 1            |
| 16:30              | 9                     | 2         | 3          | 0        | 14         | 5                   | 154         | 8          | 1        | 168         | 6                     | 0        | 6         | 0        | 12         | 5                   | 315         | 3         | 0        | 323         | 517         | 1            |
| 16:45              | 5                     | 2         | 8          | 0        | 15         | 6                   | 171         | 9          | 1        | 187         | 2                     | 1        | 5         | 0        | 8          | 3                   | 283         | 2         | 0        | 288         | 498         | 1            |
| <b>Total</b>       | <b>27</b>             | <b>6</b>  | <b>26</b>  | <b>0</b> | <b>59</b>  | <b>21</b>           | <b>600</b>  | <b>35</b>  | <b>2</b> | <b>658</b>  | <b>16</b>             | <b>1</b> | <b>25</b> | <b>0</b> | <b>42</b>  | <b>22</b>           | <b>1148</b> | <b>10</b> | <b>1</b> | <b>1181</b> | <b>1940</b> | <b>3</b>     |
| 17:00              | 3                     | 2         | 5          | 0        | 10         | 9                   | 159         | 17         | 0        | 185         | 4                     | 1        | 10        | 0        | 15         | 7                   | 336         | 4         | 0        | 347         | 557         | 0            |
| 17:15              | 12                    | 2         | 7          | 0        | 21         | 10                  | 158         | 14         | 0        | 182         | 10                    | 1        | 11        | 0        | 22         | 8                   | 320         | 3         | 1        | 332         | 557         | 1            |
| 17:30              | 3                     | 1         | 13         | 0        | 17         | 3                   | 155         | 7          | 0        | 165         | 5                     | 1        | 8         | 0        | 14         | 12                  | 331         | 0         | 1        | 344         | 540         | 1            |
| 17:45              | 6                     | 2         | 8          | 0        | 16         | 3                   | 148         | 11         | 1        | 163         | 5                     | 1        | 7         | 0        | 13         | 7                   | 323         | 4         | 0        | 334         | 526         | 1            |
| <b>Total</b>       | <b>24</b>             | <b>7</b>  | <b>33</b>  | <b>0</b> | <b>64</b>  | <b>25</b>           | <b>620</b>  | <b>49</b>  | <b>1</b> | <b>695</b>  | <b>24</b>             | <b>4</b> | <b>36</b> | <b>0</b> | <b>64</b>  | <b>34</b>           | <b>1310</b> | <b>11</b> | <b>2</b> | <b>1357</b> | <b>2180</b> | <b>3</b>     |
| <b>Grand Total</b> | <b>95</b>             | <b>14</b> | <b>101</b> | <b>0</b> | <b>210</b> | <b>88</b>           | <b>2931</b> | <b>133</b> | <b>4</b> | <b>3156</b> | <b>56</b>             | <b>7</b> | <b>92</b> | <b>0</b> | <b>155</b> | <b>78</b>           | <b>3178</b> | <b>32</b> | <b>3</b> | <b>3291</b> | <b>6812</b> | <b>7</b>     |
| Apprch %           | 45.2%                 | 6.7%      | 48.1%      | 0.0%     |            | 2.8%                | 92.9%       | 4.2%       | 0.1%     |             | 36.1%                 | 4.5%     | 59.4%     | 0.0%     |            | 2.4%                | 96.6%       | 1.0%      | 0.1%     |             |             |              |
| Total %            | 1.4%                  | 0.2%      | 1.5%       | 0.0%     | 3.1%       | 1.3%                | 43.0%       | 2.0%       | 0.1%     | 46.3%       | 0.8%                  | 0.1%     | 1.4%      | 0.0%     | 2.3%       | 1.1%                | 46.7%       | 0.5%      | 0.0%     | 48.3%       | 100.0%      |              |

| AM PEAK HOUR                                      | Stalen Ave Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | Stalen Ave Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                       |      |       |        |           |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |      |       |        |           |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |       |
| 8:00  | 2                     | 1    | 3     | 0      | 6         | 3                   | 241   | 6     | 0      | 250       | 2                     | 1    | 1     | 0      | 4         | 4                   | 113   | 3     | 0      | 120       | 380   |
| 8:15  | 7                     | 0    | 6     | 0      | 13        | 8                   | 275   | 7     | 0      | 290       | 5                     | 0    | 6     | 0      | 11        | 4                   | 109   | 1     | 0      | 114       | 428   |
| 8:30  | 5                     | 0    | 3     | 0      | 8         | 9                   | 269   | 9     | 1      | 288       | 1                     | 1    | 6     | 0      | 8         | 1                   | 111   | 0     | 0      | 112       | 416   |
| 8:45  | 8                     | 0    | 9     | 0      | 17        | 8                   | 265   | 10    | 0      | 283       | 3                     | 0    | 3     | 0      | 6         | 3                   | 103   | 4     | 0      | 110       | 416   |
| Total Volume                                      | 22                    | 1    | 21    | 0      | 44        | 28                  | 1050  | 32    | 1      | 1111      | 11                    | 2    | 16    | 0      | 29        | 12                  | 436   | 8     | 0      | 456       | 1640  |
| % App Total                                       | 50.0%                 | 2.3% | 47.7% | 0.0%   |           | 2.5%                | 94.5% | 2.9%  | 0.1%   |           | 37.9%                 | 6.9% | 55.2% | 0.0%   |           | 2.6%                | 95.6% | 1.8%  | 0.0%   |           |       |
| PHF   | .688                  | .250 | .583  | .000   | .647      | .778                | .955  | .800  | .250   | .958      | .550                  | .500 | .667  | .000   | .659      | .750                | .965  | .500  | .000   | .958      | .958  |

| PM PEAK HOUR                                      | Stalen Ave Southbound |       |       |        |           | Grand Ave Westbound |       |       |        |           | Stalen Ave Northbound |       |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|-----------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
|   | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                       |       |       |        |           |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |       |       |        |           |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |       |
| 17:00   | 3                     | 2     | 5     | 0      | 10        | 9                   | 159   | 17    | 0      | 185       | 4                     | 1     | 10    | 0      | 15        | 7                   | 336   | 4     | 0      | 347       | 557   |
| 17:15   | 12                    | 2     | 7     | 0      | 21        | 10                  | 158   | 14    | 0      | 182       | 10                    | 1     | 11    | 0      | 22        | 8                   | 320   | 3     | 1      | 332       | 557   |
| 17:30   | 3                     | 1     | 13    | 0      | 17        | 3                   | 155   | 7     | 0      | 165       | 5                     | 1     | 8     | 0      | 14        | 12                  | 331   | 0     | 1      | 344       | 540   |
| 17:45   | 6                     | 2     | 8     | 0      | 16        | 3                   | 148   | 11    | 1      | 163       | 5                     | 1     | 7     | 0      | 13        | 7                   | 323   | 4     | 0      | 334       | 526   |
| Total Volume                                      | 24                    | 7     | 33    | 0      | 64        | 25                  | 620   | 49    | 1      | 695       | 24                    | 4     | 36    | 0      | 64        | 34                  | 1310  | 11    | 2      | 1357      | 2180  |
| % App Total                                       | 37.5%                 | 10.9% | 51.6% | 0.0%   |           | 3.6%                | 89.2% | 7.1%  | 0.1%   |           | 37.5%                 | 6.3%  | 56.3% | 0.0%   |           | 2.5%                | 96.5% | 0.8%  | 0.1%   |           |       |
| PHF   | .500                  | .875  | .635  | .000   | .762      | .625                | .975  | .721  | .250   | .939      | .600                  | 1.000 | .818  | .000   | .727      | .708                | .975  | .688  | .500   | .978      | .978  |

# National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-007 Stalen Ave & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Stalen Ave Southbound |          |          |            |           | Grand Ave Westbound |            |          |            |            | Stalen Ave Northbound |          |          |            |           | Grand Ave Eastbound |            |          |            |            | Total      | Peds Total  |
|--------------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|------------|-------------|
|                    | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  |            |             |
| 7:00               | 0                     | 0        | 0        | 7          | 0         | 0                   | 7          | 0        | 1          | 7          | 0                     | 0        | 0        | 11         | 0         | 0                   | 8          | 0        | 4          | 8          | 15         | 23          |
| 7:15               | 0                     | 0        | 0        | 5          | 0         | 0                   | 7          | 0        | 1          | 7          | 0                     | 1        | 0        | 15         | 1         | 0                   | 3          | 0        | 1          | 3          | 11         | 22          |
| 7:30               | 0                     | 0        | 2        | 5          | 2         | 0                   | 9          | 0        | 4          | 9          | 0                     | 0        | 0        | 21         | 0         | 0                   | 6          | 0        | 4          | 6          | 17         | 34          |
| 7:45               | 1                     | 0        | 0        | 15         | 1         | 0                   | 28         | 0        | 2          | 28         | 0                     | 0        | 0        | 21         | 0         | 0                   | 6          | 0        | 8          | 6          | 35         | 46          |
| <b>Total</b>       | <b>1</b>              | <b>0</b> | <b>2</b> | <b>32</b>  | <b>3</b>  | <b>0</b>            | <b>51</b>  | <b>0</b> | <b>8</b>   | <b>51</b>  | <b>0</b>              | <b>1</b> | <b>0</b> | <b>68</b>  | <b>1</b>  | <b>0</b>            | <b>23</b>  | <b>0</b> | <b>17</b>  | <b>23</b>  | <b>78</b>  | <b>125</b>  |
|                    |                       |          |          |            |           |                     |            |          |            |            |                       |          |          |            |           |                     |            |          |            |            |            |             |
| 8:00               | 0                     | 0        | 2        | 27         | 2         | 0                   | 30         | 0        | 6          | 30         | 0                     | 0        | 0        | 28         | 0         | 0                   | 6          | 0        | 1          | 6          | 38         | 62          |
| 8:15               | 0                     | 0        | 1        | 32         | 1         | 0                   | 25         | 0        | 7          | 25         | 0                     | 0        | 0        | 32         | 0         | 0                   | 5          | 0        | 12         | 5          | 31         | 83          |
| 8:30               | 0                     | 0        | 1        | 18         | 1         | 0                   | 28         | 0        | 4          | 28         | 0                     | 0        | 0        | 25         | 0         | 0                   | 4          | 0        | 1          | 4          | 33         | 48          |
| 8:45               | 1                     | 0        | 3        | 25         | 4         | 0                   | 28         | 0        | 7          | 28         | 0                     | 0        | 0        | 27         | 0         | 0                   | 7          | 0        | 11         | 7          | 39         | 70          |
| <b>Total</b>       | <b>1</b>              | <b>0</b> | <b>7</b> | <b>102</b> | <b>8</b>  | <b>0</b>            | <b>111</b> | <b>0</b> | <b>24</b>  | <b>111</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>112</b> | <b>0</b>  | <b>0</b>            | <b>22</b>  | <b>0</b> | <b>25</b>  | <b>22</b>  | <b>141</b> | <b>263</b>  |
|                    |                       |          |          |            |           |                     |            |          |            |            |                       |          |          |            |           |                     |            |          |            |            |            |             |
| 16:00              | 0                     | 0        | 0        | 24         | 0         | 0                   | 1          | 0        | 5          | 1          | 0                     | 0        | 0        | 24         | 0         | 0                   | 23         | 0        | 1          | 23         | 24         | 54          |
| 16:15              | 0                     | 0        | 0        | 19         | 0         | 0                   | 6          | 0        | 4          | 6          | 0                     | 0        | 0        | 46         | 0         | 0                   | 15         | 0        | 14         | 15         | 21         | 83          |
| 16:30              | 0                     | 0        | 0        | 31         | 0         | 0                   | 5          | 1        | 16         | 6          | 0                     | 0        | 0        | 42         | 0         | 0                   | 18         | 0        | 10         | 18         | 24         | 99          |
| 16:45              | 0                     | 0        | 0        | 40         | 0         | 0                   | 4          | 0        | 4          | 4          | 0                     | 1        | 0        | 48         | 1         | 0                   | 22         | 0        | 23         | 22         | 27         | 115         |
| <b>Total</b>       | <b>0</b>              | <b>0</b> | <b>0</b> | <b>114</b> | <b>0</b>  | <b>0</b>            | <b>16</b>  | <b>1</b> | <b>29</b>  | <b>17</b>  | <b>0</b>              | <b>1</b> | <b>0</b> | <b>160</b> | <b>1</b>  | <b>0</b>            | <b>78</b>  | <b>0</b> | <b>48</b>  | <b>78</b>  | <b>96</b>  | <b>351</b>  |
|                    |                       |          |          |            |           |                     |            |          |            |            |                       |          |          |            |           |                     |            |          |            |            |            |             |
| 17:00              | 0                     | 0        | 0        | 53         | 0         | 0                   | 5          | 1        | 21         | 6          | 1                     | 0        | 0        | 48         | 1         | 0                   | 18         | 0        | 18         | 18         | 25         | 140         |
| 17:15              | 0                     | 0        | 0        | 30         | 0         | 1                   | 6          | 0        | 14         | 7          | 0                     | 0        | 0        | 50         | 0         | 1                   | 26         | 0        | 11         | 27         | 34         | 105         |
| 17:30              | 1                     | 0        | 0        | 45         | 1         | 0                   | 8          | 0        | 7          | 8          | 0                     | 0        | 0        | 63         | 0         | 0                   | 20         | 0        | 5          | 20         | 29         | 120         |
| 17:45              | 0                     | 0        | 0        | 42         | 0         | 0                   | 4          | 0        | 10         | 4          | 0                     | 0        | 0        | 59         | 0         | 0                   | 28         | 0        | 3          | 28         | 32         | 114         |
| <b>Total</b>       | <b>1</b>              | <b>0</b> | <b>0</b> | <b>170</b> | <b>1</b>  | <b>1</b>            | <b>23</b>  | <b>1</b> | <b>52</b>  | <b>25</b>  | <b>1</b>              | <b>0</b> | <b>0</b> | <b>220</b> | <b>1</b>  | <b>1</b>            | <b>92</b>  | <b>0</b> | <b>37</b>  | <b>93</b>  | <b>120</b> | <b>479</b>  |
|                    |                       |          |          |            |           |                     |            |          |            |            |                       |          |          |            |           |                     |            |          |            |            |            |             |
| <b>Grand Total</b> | <b>3</b>              | <b>0</b> | <b>9</b> | <b>418</b> | <b>12</b> | <b>1</b>            | <b>201</b> | <b>2</b> | <b>113</b> | <b>204</b> | <b>1</b>              | <b>2</b> | <b>0</b> | <b>560</b> | <b>3</b>  | <b>1</b>            | <b>215</b> | <b>0</b> | <b>127</b> | <b>216</b> | <b>435</b> | <b>1218</b> |
| Apprch %           | 25.0%                 | 0.0%     | 75.0%    |            |           | 0.5%                | 98.5%      | 1.0%     |            |            | 33.3%                 | 66.7%    | 0.0%     |            |           | 0.5%                | 99.5%      | 0.0%     |            |            |            |             |
| Total %            | 0.7%                  | 0.0%     | 2.1%     |            | 2.8%      | 0.2%                | 46.2%      | 0.5%     |            | 46.9%      | 0.2%                  | 0.5%     | 0.0%     |            | 0.7%      | 0.2%                | 49.4%      | 0.0%     |            | 49.7%      | 100.0%     |             |

| AM PEAK HOUR                                      | Stalen Ave Southbound |      |       |      |           | Grand Ave Westbound |        |       |      |           | Stalen Ave Northbound |      |       |      |           | Grand Ave Eastbound |        |       |      |           | Total |  |
|---|-----------------------|------|-------|------|-----------|---------------------|--------|-------|------|-----------|-----------------------|------|-------|------|-----------|---------------------|--------|-------|------|-----------|-------|--|
|   | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                       |      |       |      |           |                     |        |       |      |           |                       |      |       |      |           |                     |        |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |      |       |      |           |                     |        |       |      |           |                       |      |       |      |           |                     |        |       |      |           |       |  |
| 8:00  | 0                     | 0    | 2     | 27   | 2         | 0                   | 30     | 0     | 6    | 30        | 0                     | 0    | 0     | 28   | 0         | 0                   | 6      | 0     | 1    | 6         | 38    |  |
| 8:15  | 0                     | 0    | 1     | 32   | 1         | 0                   | 25     | 0     | 7    | 25        | 0                     | 0    | 0     | 32   | 0         | 0                   | 5      | 0     | 12   | 5         | 31    |  |
| 8:30  | 0                     | 0    | 1     | 18   | 1         | 0                   | 28     | 0     | 4    | 28        | 0                     | 0    | 0     | 25   | 0         | 0                   | 4      | 0     | 1    | 4         | 33    |  |
| 8:45  | 1                     | 0    | 3     | 25   | 4         | 0                   | 28     | 0     | 7    | 28        | 0                     | 0    | 0     | 27   | 0         | 0                   | 7      | 0     | 11   | 7         | 39    |  |
| Total Volume                                      | 1                     | 0    | 7     | 102  | 8         | 0                   | 111    | 0     | 24   | 111       | 0                     | 0    | 0     | 112  | 0         | 0                   | 22     | 0     | 25   | 22        | 141   |  |
| % App Total                                       | 12.5%                 | 0.0% | 87.5% |      |           | 0.0%                | 100.0% | 0.0%  |      |           | 0.0%                  | 0.0% | 0.0%  |      |           | 0.0%                | 100.0% | 0.0%  |      |           |       |  |
| PHF   | .250                  | .000 | .583  |      | .500      | .000                | .925   | .000  |      | .925      | .000                  | .000 | .000  |      | .000      | .786                | .000   |       | .786 |           | .904  |  |

| PM PEAK HOUR                                      | Stalen Ave Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | Stalen Ave Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |  |
|---|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |                     |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |                     |       |       |      |           |       |  |
| 17:00   | 0                     | 0    | 0     | 53   | 0         | 0                   | 5     | 1     | 21   | 6         | 1                     | 0    | 0     | 48   | 1         | 0                   | 18    | 0     | 18   | 18        | 25    |  |
| 17:15   | 0                     | 0    | 0     | 30   | 0         | 1                   | 6     | 0     | 14   | 7         | 0                     | 0    | 0     | 50   | 0         | 1                   | 26    | 0     | 11   | 27        | 34    |  |
| 17:30   | 1                     | 0    | 0     | 45   | 1         | 0                   | 8     | 0     | 7    | 8         | 0                     | 0    | 0     | 63   | 0         | 0                   | 20    | 0     | 5    | 20        | 29    |  |
| 17:45   | 0                     | 0    | 0     | 42   | 0         | 0                   | 4     | 0     | 10   | 4         | 0                     | 0    | 0     | 59   | 0         | 0                   | 28    | 0     | 3    | 28        | 32    |  |
| Total Volume                                      | 1                     | 0    | 0     | 170  | 1         | 1                   | 23    | 1     | 52   | 25        | 1                     | 0    | 0     | 220  | 1         | 1                   | 92    | 0     | 37   | 93        | 120   |  |
| % App Total                                       | 100.0%                | 0.0% | 0.0%  |      |           | 4.0%                | 92.0% | 4.0%  |      |           | 100.0%                | 0.0% | 0.0%  |      |           | 1.1%                | 98.9% | 0.0%  |      |           |       |  |
| PHF   | .250                  | .000 | .000  |      | .250      | .250                | .719  | .250  |      | .781      | .250                  | .000 | .000  |      | .250      | .250                | .821  | .000  |      | .830      | .882  |  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Uturms On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-008 Euclid Ave & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Uturms

| START TIME         | Euclid Ave Southbound |          |            |          |            | Grand Ave Westbound |             |            |          |             | Euclid Ave Northbound |          |          |          |           | Grand Ave Eastbound |             |          |          |             | Total       | Uturms Total |
|--------------------|-----------------------|----------|------------|----------|------------|---------------------|-------------|------------|----------|-------------|-----------------------|----------|----------|----------|-----------|---------------------|-------------|----------|----------|-------------|-------------|--------------|
|                    | LEFT                  | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT    | UTURNS   | APP.TOTAL   |             |              |
| 7:00               | 6                     | 0        | 3          | 0        | 9          | 0                   | 123         | 10         | 1        | 134         | 0                     | 0        | 0        | 0        | 0         | 0                   | 75          | 0        | 0        | 75          | 218         | 1            |
| 7:15               | 4                     | 0        | 4          | 0        | 8          | 0                   | 152         | 14         | 0        | 166         | 0                     | 0        | 0        | 0        | 0         | 0                   | 80          | 0        | 0        | 80          | 254         | 0            |
| 7:30               | 6                     | 0        | 7          | 0        | 13         | 0                   | 164         | 16         | 0        | 180         | 0                     | 0        | 0        | 0        | 0         | 2                   | 100         | 0        | 0        | 102         | 295         | 0            |
| 7:45               | 7                     | 0        | 7          | 0        | 14         | 0                   | 248         | 15         | 0        | 263         | 0                     | 0        | 0        | 0        | 0         | 3                   | 103         | 0        | 1        | 107         | 384         | 1            |
| <b>Total</b>       | <b>23</b>             | <b>0</b> | <b>21</b>  | <b>0</b> | <b>44</b>  | <b>0</b>            | <b>687</b>  | <b>55</b>  | <b>1</b> | <b>743</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>5</b>            | <b>358</b>  | <b>0</b> | <b>1</b> | <b>364</b>  | <b>1151</b> | <b>2</b>     |
| 8:00               | 4                     | 0        | 7          | 0        | 11         | 0                   | 242         | 20         | 0        | 262         | 0                     | 0        | 0        | 0        | 0         | 4                   | 123         | 0        | 0        | 127         | 400         | 0            |
| 8:15               | 10                    | 0        | 7          | 0        | 17         | 0                   | 288         | 23         | 0        | 311         | 0                     | 0        | 0        | 0        | 0         | 8                   | 127         | 0        | 0        | 135         | 463         | 0            |
| 8:30               | 5                     | 0        | 12         | 0        | 17         | 0                   | 277         | 26         | 0        | 303         | 0                     | 0        | 0        | 0        | 0         | 7                   | 113         | 0        | 0        | 120         | 440         | 0            |
| 8:45               | 12                    | 0        | 2          | 0        | 14         | 0                   | 288         | 35         | 1        | 324         | 0                     | 0        | 0        | 0        | 0         | 5                   | 121         | 0        | 0        | 126         | 464         | 1            |
| <b>Total</b>       | <b>31</b>             | <b>0</b> | <b>28</b>  | <b>0</b> | <b>59</b>  | <b>0</b>            | <b>1095</b> | <b>104</b> | <b>1</b> | <b>1200</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>24</b>           | <b>484</b>  | <b>0</b> | <b>0</b> | <b>508</b>  | <b>1767</b> | <b>1</b>     |
| 16:00              | 8                     | 0        | 8          | 0        | 16         | 0                   | 145         | 24         | 0        | 169         | 0                     | 0        | 0        | 0        | 0         | 8                   | 278         | 0        | 1        | 287         | 472         | 1            |
| 16:15              | 6                     | 0        | 7          | 0        | 13         | 0                   | 157         | 21         | 0        | 178         | 0                     | 0        | 0        | 0        | 0         | 10                  | 302         | 0        | 0        | 312         | 503         | 0            |
| 16:30              | 8                     | 0        | 7          | 0        | 15         | 0                   | 166         | 34         | 2        | 202         | 0                     | 0        | 0        | 0        | 0         | 11                  | 333         | 0        | 0        | 344         | 561         | 2            |
| 16:45              | 9                     | 0        | 5          | 0        | 14         | 0                   | 176         | 28         | 0        | 204         | 0                     | 0        | 0        | 0        | 0         | 10                  | 301         | 0        | 1        | 312         | 530         | 1            |
| <b>Total</b>       | <b>31</b>             | <b>0</b> | <b>27</b>  | <b>0</b> | <b>58</b>  | <b>0</b>            | <b>644</b>  | <b>107</b> | <b>2</b> | <b>753</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>39</b>           | <b>1214</b> | <b>0</b> | <b>2</b> | <b>1255</b> | <b>2066</b> | <b>4</b>     |
| 17:00              | 16                    | 0        | 6          | 0        | 22         | 0                   | 193         | 31         | 0        | 224         | 0                     | 0        | 0        | 0        | 0         | 8                   | 359         | 0        | 0        | 367         | 613         | 0            |
| 17:15              | 20                    | 0        | 13         | 0        | 33         | 0                   | 172         | 34         | 0        | 206         | 0                     | 0        | 0        | 0        | 0         | 6                   | 352         | 0        | 0        | 358         | 597         | 0            |
| 17:30              | 29                    | 0        | 8          | 0        | 37         | 0                   | 158         | 33         | 1        | 192         | 0                     | 0        | 0        | 0        | 0         | 8                   | 354         | 0        | 0        | 362         | 591         | 1            |
| 17:45              | 18                    | 0        | 9          | 0        | 27         | 0                   | 158         | 43         | 2        | 203         | 0                     | 0        | 0        | 0        | 0         | 10                  | 331         | 0        | 0        | 341         | 571         | 2            |
| <b>Total</b>       | <b>83</b>             | <b>0</b> | <b>36</b>  | <b>0</b> | <b>119</b> | <b>0</b>            | <b>681</b>  | <b>141</b> | <b>3</b> | <b>825</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>32</b>           | <b>1396</b> | <b>0</b> | <b>0</b> | <b>1428</b> | <b>2372</b> | <b>3</b>     |
| <b>Grand Total</b> | <b>168</b>            | <b>0</b> | <b>112</b> | <b>0</b> | <b>280</b> | <b>0</b>            | <b>3107</b> | <b>407</b> | <b>7</b> | <b>3521</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>100</b>          | <b>3452</b> | <b>0</b> | <b>3</b> | <b>3555</b> | <b>7356</b> | <b>10</b>    |
| Apprch %           | 60.0%                 | 0.0%     | 40.0%      | 0.0%     |            | 0.0%                | 88.2%       | 11.6%      | 0.2%     |             | 0.0%                  | 0.0%     | 0.0%     | 0.0%     |           | 2.8%                | 97.1%       | 0.0%     | 0.1%     |             |             |              |
| Total %            | 2.3%                  | 0.0%     | 1.5%       | 0.0%     | 3.8%       | 0.0%                | 42.2%       | 5.5%       | 0.1%     | 47.9%       | 0.0%                  | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 1.4%                | 46.9%       | 0.0%     | 0.0%     | 48.3%       | 100.0%      |              |

| AM PEAK HOUR                                      | Euclid Ave Southbound |          |           |          |           | Grand Ave Westbound |             |            |          |             | Euclid Ave Northbound |          |          |          |           | Grand Ave Eastbound |            |          |          |            | Total       |
|---|-----------------------|----------|-----------|----------|-----------|---------------------|-------------|------------|----------|-------------|-----------------------|----------|----------|----------|-----------|---------------------|------------|----------|----------|------------|-------------|
| START TIME  | LEFT                  | THRU     | RIGHT     | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU       | RIGHT    | UTURNS   | APP.TOTAL  |             |
| Peak Hour Analysis From 08:00 to 09:00            |                       |          |           |          |           |                     |             |            |          |             |                       |          |          |          |           |                     |            |          |          |            |             |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |          |           |          |           |                     |             |            |          |             |                       |          |          |          |           |                     |            |          |          |            |             |
| 8:00  | 4                     | 0        | 7         | 0        | 11        | 0                   | 242         | 20         | 0        | 262         | 0                     | 0        | 0        | 0        | 0         | 4                   | 123        | 0        | 0        | 127        | 400         |
| 8:15  | 10                    | 0        | 7         | 0        | 17        | 0                   | 288         | 23         | 0        | 311         | 0                     | 0        | 0        | 0        | 0         | 8                   | 127        | 0        | 0        | 135        | 463         |
| 8:30  | 5                     | 0        | 12        | 0        | 17        | 0                   | 277         | 26         | 0        | 303         | 0                     | 0        | 0        | 0        | 0         | 7                   | 113        | 0        | 0        | 120        | 440         |
| 8:45  | 12                    | 0        | 2         | 0        | 14        | 0                   | 288         | 35         | 1        | 324         | 0                     | 0        | 0        | 0        | 0         | 5                   | 121        | 0        | 0        | 126        | 464         |
| <b>Total Volume</b>                               | <b>31</b>             | <b>0</b> | <b>28</b> | <b>0</b> | <b>59</b> | <b>0</b>            | <b>1095</b> | <b>104</b> | <b>1</b> | <b>1200</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>24</b>           | <b>484</b> | <b>0</b> | <b>0</b> | <b>508</b> | <b>1767</b> |
| % App Total                                       | 52.5%                 | 0.0%     | 47.5%     | 0.0%     |           | 0.0%                | 91.3%       | 8.7%       | 0.1%     |             | 0.0%                  | 0.0%     | 0.0%     | 0.0%     |           | 4.7%                | 95.3%      | 0.0%     | 0.0%     |            |             |
| PHF   | .646                  | .000     | .583      | .000     | .868      | .000                | .951        | .743       | .250     | .926        | .000                  | .000     | .000     | .000     | .000      | .750                | .953       | .000     | .000     | .941       | .952        |

| PM PEAK HOUR                                      | Euclid Ave Southbound |          |           |          |            | Grand Ave Westbound |            |            |          |            | Euclid Ave Northbound |          |          |          |           | Grand Ave Eastbound |             |          |          |             | Total       |
|---|-----------------------|----------|-----------|----------|------------|---------------------|------------|------------|----------|------------|-----------------------|----------|----------|----------|-----------|---------------------|-------------|----------|----------|-------------|-------------|
| START TIME  | LEFT                  | THRU     | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                | THRU       | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT    | UTURNS   | APP.TOTAL   |             |
| Peak Hour Analysis From 17:00 to 18:00            |                       |          |           |          |            |                     |            |            |          |            |                       |          |          |          |           |                     |             |          |          |             |             |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |          |           |          |            |                     |            |            |          |            |                       |          |          |          |           |                     |             |          |          |             |             |
| 17:00   | 16                    | 0        | 6         | 0        | 22         | 0                   | 193        | 31         | 0        | 224        | 0                     | 0        | 0        | 0        | 0         | 8                   | 359         | 0        | 0        | 367         | 613         |
| 17:15   | 20                    | 0        | 13        | 0        | 33         | 0                   | 172        | 34         | 0        | 206        | 0                     | 0        | 0        | 0        | 0         | 6                   | 352         | 0        | 0        | 358         | 597         |
| 17:30   | 29                    | 0        | 8         | 0        | 37         | 0                   | 158        | 33         | 1        | 192        | 0                     | 0        | 0        | 0        | 0         | 8                   | 354         | 0        | 0        | 362         | 591         |
| 17:45   | 18                    | 0        | 9         | 0        | 27         | 0                   | 158        | 43         | 2        | 203        | 0                     | 0        | 0        | 0        | 0         | 10                  | 331         | 0        | 0        | 341         | 571         |
| <b>Total Volume</b>                               | <b>83</b>             | <b>0</b> | <b>36</b> | <b>0</b> | <b>119</b> | <b>0</b>            | <b>681</b> | <b>141</b> | <b>3</b> | <b>825</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>32</b>           | <b>1396</b> | <b>0</b> | <b>0</b> | <b>1428</b> | <b>2372</b> |
| % App Total                                       | 69.7%                 | 0.0%     | 30.3%     | 0.0%     |            | 0.0%                | 82.5%      | 17.1%      | 0.4%     |            | 0.0%                  | 0.0%     | 0.0%     | 0.0%     |           | 2.2%                | 97.8%       | 0.0%     | 0.0%     |             |             |
| PHF   | .716                  | .000     | .692      | .000     | .804       | .000                | .882       | .820       | .375     | .921       | .000                  | .000     | .000     | .000     | .000      | .800                | .972        | .000     | .000     | .973        | .967        |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-008 Euclid Ave & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | Euclid Ave Southbound |          |          |            |           | Grand Ave Westbound |            |          |            |            | Euclid Ave Northbound |          |          |          |           | Grand Ave Eastbound |            |          |           |            | Total      | Peds Total |
|--------------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|-----------------------|----------|----------|----------|-----------|---------------------|------------|----------|-----------|------------|------------|------------|
|                    | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS      | APP.TOTAL  |            |            |
| 7:00               | 1                     | 0        | 0        | 8          | 1         | 0                   | 7          | 0        | 4          | 7          | 0                     | 0        | 0        | 0        | 0         | 0                   | 6          | 0        | 2         | 6          | 14         | 14         |
| 7:15               | 1                     | 0        | 0        | 5          | 1         | 0                   | 7          | 0        | 1          | 7          | 0                     | 0        | 0        | 0        | 0         | 0                   | 3          | 0        | 2         | 3          | 11         | 8          |
| 7:30               | 1                     | 0        | 1        | 8          | 2         | 0                   | 8          | 0        | 7          | 8          | 0                     | 0        | 0        | 0        | 0         | 1                   | 6          | 0        | 2         | 7          | 17         | 17         |
| 7:45               | 1                     | 0        | 2        | 11         | 3         | 0                   | 21         | 0        | 2          | 21         | 2                     | 0        | 0        | 0        | 2         | 1                   | 5          | 0        | 3         | 6          | 32         | 16         |
| <b>Total</b>       | <b>4</b>              | <b>0</b> | <b>3</b> | <b>32</b>  | <b>7</b>  | <b>0</b>            | <b>43</b>  | <b>0</b> | <b>14</b>  | <b>43</b>  | <b>2</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b>  | <b>2</b>            | <b>20</b>  | <b>0</b> | <b>9</b>  | <b>22</b>  | <b>74</b>  | <b>55</b>  |
| 8:00               | 0                     | 0        | 1        | 23         | 1         | 0                   | 22         | 0        | 4          | 22         | 0                     | 0        | 0        | 0        | 0         | 0                   | 6          | 0        | 4         | 6          | 29         | 31         |
| 8:15               | 0                     | 0        | 0        | 13         | 0         | 0                   | 25         | 0        | 5          | 25         | 0                     | 0        | 0        | 0        | 0         | 0                   | 5          | 0        | 3         | 5          | 30         | 21         |
| 8:30               | 1                     | 0        | 3        | 14         | 4         | 0                   | 22         | 0        | 4          | 22         | 0                     | 0        | 0        | 0        | 0         | 0                   | 3          | 0        | 3         | 3          | 29         | 21         |
| 8:45               | 1                     | 0        | 1        | 13         | 2         | 0                   | 23         | 1        | 2          | 24         | 0                     | 0        | 0        | 0        | 0         | 1                   | 6          | 0        | 3         | 7          | 33         | 18         |
| <b>Total</b>       | <b>2</b>              | <b>0</b> | <b>5</b> | <b>63</b>  | <b>7</b>  | <b>0</b>            | <b>92</b>  | <b>1</b> | <b>15</b>  | <b>93</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>            | <b>20</b>  | <b>0</b> | <b>13</b> | <b>21</b>  | <b>121</b> | <b>91</b>  |
| 16:00              | 0                     | 0        | 0        | 18         | 0         | 0                   | 2          | 0        | 5          | 2          | 0                     | 0        | 0        | 0        | 0         | 0                   | 21         | 0        | 4         | 21         | 23         | 27         |
| 16:15              | 0                     | 0        | 0        | 18         | 0         | 0                   | 6          | 1        | 7          | 7          | 0                     | 0        | 0        | 0        | 0         | 0                   | 13         | 0        | 7         | 13         | 20         | 32         |
| 16:30              | 0                     | 0        | 0        | 24         | 0         | 0                   | 6          | 0        | 11         | 6          | 0                     | 0        | 0        | 0        | 0         | 1                   | 18         | 0        | 2         | 19         | 25         | 37         |
| 16:45              | 0                     | 0        | 0        | 26         | 0         | 0                   | 3          | 0        | 12         | 3          | 0                     | 0        | 0        | 0        | 0         | 1                   | 22         | 0        | 6         | 23         | 26         | 44         |
| <b>Total</b>       | <b>0</b>              | <b>0</b> | <b>0</b> | <b>86</b>  | <b>0</b>  | <b>0</b>            | <b>17</b>  | <b>1</b> | <b>35</b>  | <b>18</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>2</b>            | <b>74</b>  | <b>0</b> | <b>19</b> | <b>76</b>  | <b>94</b>  | <b>140</b> |
| 17:00              | 2                     | 0        | 0        | 32         | 2         | 0                   | 6          | 1        | 11         | 7          | 0                     | 1        | 0        | 0        | 1         | 1                   | 15         | 1        | 5         | 17         | 27         | 48         |
| 17:15              | 0                     | 0        | 0        | 21         | 0         | 0                   | 5          | 0        | 18         | 5          | 0                     | 0        | 0        | 0        | 0         | 0                   | 23         | 0        | 4         | 23         | 28         | 43         |
| 17:30              | 1                     | 0        | 1        | 36         | 2         | 0                   | 9          | 1        | 11         | 10         | 0                     | 0        | 1        | 0        | 1         | 1                   | 25         | 0        | 3         | 26         | 39         | 50         |
| 17:45              | 0                     | 0        | 0        | 37         | 0         | 0                   | 5          | 1        | 20         | 6          | 0                     | 0        | 0        | 0        | 0         | 1                   | 26         | 0        | 8         | 27         | 33         | 65         |
| <b>Total</b>       | <b>3</b>              | <b>0</b> | <b>1</b> | <b>126</b> | <b>4</b>  | <b>0</b>            | <b>25</b>  | <b>3</b> | <b>60</b>  | <b>28</b>  | <b>0</b>              | <b>1</b> | <b>1</b> | <b>0</b> | <b>2</b>  | <b>3</b>            | <b>89</b>  | <b>1</b> | <b>20</b> | <b>93</b>  | <b>127</b> | <b>206</b> |
| <b>Grand Total</b> | <b>9</b>              | <b>0</b> | <b>9</b> | <b>307</b> | <b>18</b> | <b>0</b>            | <b>177</b> | <b>5</b> | <b>124</b> | <b>182</b> | <b>2</b>              | <b>1</b> | <b>1</b> | <b>0</b> | <b>4</b>  | <b>8</b>            | <b>203</b> | <b>1</b> | <b>61</b> | <b>212</b> | <b>416</b> | <b>492</b> |
| Apprch %           | 50.0%                 | 0.0%     | 50.0%    |            |           | 0.0%                | 97.3%      | 2.7%     |            |            | 50.0%                 | 25.0%    | 25.0%    |          |           | 3.8%                | 95.8%      | 0.5%     |           |            |            |            |
| Total %            | 2.2%                  | 0.0%     | 2.2%     |            | 4.3%      | 0.0%                | 42.5%      | 1.2%     |            | 43.8%      | 0.5%                  | 0.2%     | 0.2%     |          | 1.0%      | 1.9%                | 48.8%      | 0.2%     |           | 51.0%      | 100.0%     |            |

| AM PEAK HOUR                                      | Euclid Ave Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | Euclid Ave Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |                     |       |       |      |           |       |
| 8:00  | 0                     | 0    | 1     | 23   | 1         | 0                   | 22    | 0     | 4    | 22        | 0                     | 0    | 0     | 0    | 0         | 0                   | 6     | 0     | 4    | 6         | 29    |
| 8:15  | 0                     | 0    | 0     | 13   | 0         | 0                   | 25    | 0     | 5    | 25        | 0                     | 0    | 0     | 0    | 0         | 0                   | 5     | 0     | 3    | 5         | 30    |
| 8:30  | 1                     | 0    | 3     | 14   | 4         | 0                   | 22    | 0     | 4    | 22        | 0                     | 0    | 0     | 0    | 0         | 0                   | 3     | 0     | 3    | 3         | 29    |
| 8:45  | 1                     | 0    | 1     | 13   | 2         | 0                   | 23    | 1     | 2    | 24        | 0                     | 0    | 0     | 0    | 0         | 1                   | 6     | 0     | 3    | 7         | 33    |
| Total Volume                                      | 2                     | 0    | 5     | 63   | 7         | 0                   | 92    | 1     | 15   | 93        | 0                     | 0    | 0     | 0    | 0         | 1                   | 20    | 0     | 13   | 21        | 121   |
| % App Total                                       | 28.6%                 | 0.0% | 71.4% |      |           | 0.0%                | 98.9% | 1.1%  |      |           | 0.0%                  | 0.0% | 0.0%  |      |           | 4.8%                | 95.2% | 0.0%  |      |           |       |
| PHF   | .500                  | .000 | .417  |      | .438      | .000                | .920  | .250  |      | .930      | .000                  | .000 | .000  |      | .000      | .250                | .833  | .000  |      | .750      | .917  |

| PM PEAK HOUR                                      | Euclid Ave Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | Euclid Ave Northbound |       |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
|   | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                       |      |       |      |           |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                       |      |       |      |           |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |       |
| 17:00   | 2                     | 0    | 0     | 32   | 2         | 0                   | 6     | 1     | 11   | 7         | 0                     | 1     | 0     | 0    | 1         | 1                   | 15    | 1     | 5    | 17        | 27    |
| 17:15   | 0                     | 0    | 0     | 21   | 0         | 0                   | 5     | 0     | 18   | 5         | 0                     | 0     | 0     | 0    | 0         | 0                   | 23    | 0     | 4    | 23        | 28    |
| 17:30   | 1                     | 0    | 1     | 36   | 2         | 0                   | 9     | 1     | 11   | 10        | 0                     | 0     | 1     | 0    | 1         | 1                   | 25    | 0     | 3    | 26        | 39    |
| 17:45   | 0                     | 0    | 0     | 37   | 0         | 0                   | 5     | 1     | 20   | 6         | 0                     | 0     | 0     | 0    | 0         | 1                   | 26    | 0     | 8    | 27        | 33    |
| Total Volume                                      | 3                     | 0    | 1     | 126  | 4         | 0                   | 25    | 3     | 60   | 28        | 0                     | 1     | 1     | 0    | 2         | 3                   | 89    | 1     | 20   | 93        | 127   |
| % App Total                                       | 75.0%                 | 0.0% | 25.0% |      |           | 0.0%                | 89.3% | 10.7% |      |           | 0.0%                  | 50.0% | 50.0% |      |           | 3.2%                | 95.7% | 1.1%  |      |           |       |
| PHF   | .375                  | .000 | .250  |      | .500      | .000                | .694  | .750  |      | .700      | .000                  | .250  | .250  |      | .500      | .750                | .856  | .250  |      | .861      | .814  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-010 El Embarcadero & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | El Embarcadero Southbound |          |          |          |           | Grand Ave Westbound |             |          |          |             | El Embarcadero Northbound |          |            |          |             | Grand Ave Eastbound |             |             |          |             | Total       | Utturns Total |
|--------------------|---------------------------|----------|----------|----------|-----------|---------------------|-------------|----------|----------|-------------|---------------------------|----------|------------|----------|-------------|---------------------|-------------|-------------|----------|-------------|-------------|---------------|
|                    | LEFT                      | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT    | UTURNS   | APP.TOTAL   | LEFT                      | THRU     | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT       | UTURNS   | APP.TOTAL   |             |               |
| 7:00               | 0                         | 0        | 0        | 0        | 0         | 6                   | 109         | 0        | 0        | 115         | 23                        | 0        | 31         | 0        | 54          | 0                   | 55          | 31          | 0        | 86          | 255         | 0             |
| 7:15               | 0                         | 0        | 0        | 0        | 0         | 9                   | 123         | 0        | 1        | 133         | 42                        | 0        | 26         | 0        | 68          | 0                   | 62          | 18          | 0        | 80          | 281         | 1             |
| 7:30               | 0                         | 0        | 0        | 0        | 0         | 13                  | 131         | 0        | 0        | 144         | 43                        | 0        | 28         | 0        | 71          | 0                   | 83          | 30          | 0        | 113         | 328         | 0             |
| 7:45               | 0                         | 0        | 0        | 0        | 0         | 19                  | 180         | 0        | 0        | 199         | 78                        | 0        | 34         | 0        | 112         | 0                   | 79          | 35          | 0        | 114         | 425         | 0             |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>47</b>           | <b>543</b>  | <b>0</b> | <b>1</b> | <b>591</b>  | <b>186</b>                | <b>0</b> | <b>119</b> | <b>0</b> | <b>305</b>  | <b>0</b>            | <b>279</b>  | <b>114</b>  | <b>0</b> | <b>393</b>  | <b>1289</b> | <b>1</b>      |
| 8:00               | 0                         | 0        | 0        | 0        | 0         | 35                  | 188         | 0        | 0        | 223         | 79                        | 0        | 33         | 0        | 112         | 0                   | 92          | 31          | 0        | 123         | 458         | 0             |
| 8:15               | 0                         | 0        | 0        | 0        | 0         | 16                  | 197         | 0        | 0        | 213         | 121                       | 0        | 42         | 0        | 163         | 0                   | 94          | 45          | 0        | 139         | 515         | 0             |
| 8:30               | 0                         | 0        | 0        | 0        | 0         | 23                  | 186         | 0        | 0        | 209         | 113                       | 0        | 27         | 0        | 140         | 0                   | 74          | 42          | 0        | 116         | 465         | 0             |
| 8:45               | 0                         | 0        | 0        | 0        | 0         | 21                  | 220         | 0        | 0        | 241         | 105                       | 0        | 44         | 0        | 149         | 0                   | 99          | 35          | 0        | 134         | 524         | 0             |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>95</b>           | <b>791</b>  | <b>0</b> | <b>0</b> | <b>886</b>  | <b>418</b>                | <b>0</b> | <b>146</b> | <b>0</b> | <b>564</b>  | <b>0</b>            | <b>359</b>  | <b>153</b>  | <b>0</b> | <b>512</b>  | <b>1962</b> | <b>0</b>      |
| 16:00              | 0                         | 0        | 0        | 0        | 0         | 31                  | 121         | 0        | 2        | 154         | 49                        | 0        | 28         | 0        | 77          | 0                   | 183         | 105         | 0        | 288         | 519         | 2             |
| 16:15              | 0                         | 0        | 0        | 0        | 0         | 29                  | 130         | 0        | 0        | 159         | 48                        | 0        | 30         | 0        | 78          | 0                   | 201         | 102         | 0        | 303         | 540         | 0             |
| 16:30              | 0                         | 0        | 0        | 0        | 0         | 47                  | 154         | 0        | 0        | 201         | 49                        | 0        | 32         | 0        | 81          | 0                   | 232         | 110         | 1        | 343         | 625         | 1             |
| 16:45              | 0                         | 0        | 0        | 0        | 0         | 54                  | 157         | 0        | 0        | 211         | 44                        | 0        | 22         | 0        | 66          | 0                   | 229         | 84          | 0        | 313         | 590         | 0             |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>161</b>          | <b>562</b>  | <b>0</b> | <b>2</b> | <b>725</b>  | <b>190</b>                | <b>0</b> | <b>112</b> | <b>0</b> | <b>302</b>  | <b>0</b>            | <b>845</b>  | <b>401</b>  | <b>1</b> | <b>1247</b> | <b>2274</b> | <b>3</b>      |
| 17:00              | 0                         | 0        | 0        | 0        | 0         | 48                  | 167         | 0        | 0        | 215         | 59                        | 0        | 22         | 0        | 81          | 0                   | 256         | 118         | 1        | 375         | 671         | 1             |
| 17:15              | 0                         | 0        | 0        | 0        | 0         | 50                  | 148         | 0        | 0        | 198         | 57                        | 0        | 20         | 0        | 77          | 0                   | 243         | 122         | 0        | 365         | 640         | 0             |
| 17:30              | 0                         | 0        | 0        | 0        | 0         | 41                  | 146         | 0        | 2        | 189         | 50                        | 0        | 23         | 0        | 73          | 0                   | 253         | 138         | 0        | 391         | 653         | 2             |
| 17:45              | 0                         | 0        | 0        | 0        | 0         | 38                  | 148         | 0        | 0        | 186         | 51                        | 0        | 27         | 0        | 78          | 0                   | 224         | 119         | 1        | 344         | 608         | 1             |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>177</b>          | <b>609</b>  | <b>0</b> | <b>2</b> | <b>788</b>  | <b>217</b>                | <b>0</b> | <b>92</b>  | <b>0</b> | <b>309</b>  | <b>0</b>            | <b>976</b>  | <b>497</b>  | <b>2</b> | <b>1475</b> | <b>2572</b> | <b>4</b>      |
| <b>Grand Total</b> | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>480</b>          | <b>2505</b> | <b>0</b> | <b>5</b> | <b>2990</b> | <b>1011</b>               | <b>0</b> | <b>469</b> | <b>0</b> | <b>1480</b> | <b>0</b>            | <b>2459</b> | <b>1165</b> | <b>3</b> | <b>3627</b> | <b>8097</b> | <b>8</b>      |
| Apprch %           | 0.0%                      | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 16.1%               | 83.8%       | 0.0%     | 0.2%     | 36.9%       | 68.3%                     | 0.0%     | 31.7%      | 0.0%     | 18.3%       | 0.0%                | 67.8%       | 32.1%       | 0.1%     | 44.8%       | 100.0%      |               |
| Total %            | 0.0%                      | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 5.9%                | 30.9%       | 0.0%     | 0.1%     | 36.9%       | 12.5%                     | 0.0%     | 5.8%       | 0.0%     | 18.3%       | 0.0%                | 30.4%       | 14.4%       | 0.0%     | 44.8%       | 100.0%      |               |

| AM PEAK HOUR                                      | El Embarcadero Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | El Embarcadero Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total  |  |
|---|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 08:00 to 09:00            |                           |      |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |      |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |        |  |
| 8:00  | 0                         | 0    | 0     | 0      | 0         | 35                  | 188   | 0     | 0      | 223       | 79                        | 0    | 33    | 0      | 112       | 0                   | 92    | 31    | 0      | 123       | 458    |  |
| 8:15  | 0                         | 0    | 0     | 0      | 0         | 16                  | 197   | 0     | 0      | 213       | 121                       | 0    | 42    | 0      | 163       | 0                   | 94    | 45    | 0      | 139       | 515    |  |
| 8:30  | 0                         | 0    | 0     | 0      | 0         | 23                  | 186   | 0     | 0      | 209       | 113                       | 0    | 27    | 0      | 140       | 0                   | 74    | 42    | 0      | 116       | 465    |  |
| 8:45  | 0                         | 0    | 0     | 0      | 0         | 21                  | 220   | 0     | 0      | 241       | 105                       | 0    | 44    | 0      | 149       | 0                   | 99    | 35    | 0      | 134       | 524    |  |
| Total Volume                                      | 0                         | 0    | 0     | 0      | 0         | 95                  | 791   | 0     | 0      | 886       | 418                       | 0    | 146   | 0      | 564       | 0                   | 359   | 153   | 0      | 512       | 1962   |  |
| % App Total                                       | 0.0%                      | 0.0% | 0.0%  | 0.0%   | 0.0%      | 10.7%               | 89.3% | 0.0%  | 0.0%   | 36.9%     | 74.1%                     | 0.0% | 25.9% | 0.0%   | 18.3%     | 0.0%                | 70.1% | 29.9% | 0.0%   | 44.8%     | 100.0% |  |
| PHF   | .000                      | .000 | .000  | .000   | .000      | .679                | .899  | .000  | .000   | .919      | .864                      | .000 | .830  | .000   | .865      | .000                | .907  | .850  | .000   | .921      | .936   |  |

| PM PEAK HOUR                                      | El Embarcadero Southbound |      |       |        |           | Grand Ave Westbound |       |       |        |           | El Embarcadero Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total  |  |
|---|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|--------|--|
|   | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL |        |  |
| Peak Hour Analysis From 17:00 to 18:00            |                           |      |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |        |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |      |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |        |  |
| 17:00   | 0                         | 0    | 0     | 0      | 0         | 48                  | 167   | 0     | 0      | 215       | 59                        | 0    | 22    | 0      | 81        | 0                   | 256   | 118   | 1      | 375       | 671    |  |
| 17:15   | 0                         | 0    | 0     | 0      | 0         | 50                  | 148   | 0     | 0      | 198       | 57                        | 0    | 20    | 0      | 77        | 0                   | 243   | 122   | 0      | 365       | 640    |  |
| 17:30   | 0                         | 0    | 0     | 0      | 0         | 41                  | 146   | 0     | 2      | 189       | 50                        | 0    | 23    | 0      | 73        | 0                   | 253   | 138   | 0      | 391       | 653    |  |
| 17:45   | 0                         | 0    | 0     | 0      | 0         | 38                  | 148   | 0     | 0      | 186       | 51                        | 0    | 27    | 0      | 78        | 0                   | 224   | 119   | 1      | 344       | 608    |  |
| Total Volume                                      | 0                         | 0    | 0     | 0      | 0         | 177                 | 609   | 0     | 2      | 788       | 217                       | 0    | 92    | 0      | 309       | 0                   | 976   | 497   | 2      | 1475      | 2572   |  |
| % App Total                                       | 0.0%                      | 0.0% | 0.0%  | 0.0%   | 0.0%      | 22.5%               | 77.3% | 0.0%  | 0.3%   | 36.9%     | 70.2%                     | 0.0% | 29.8% | 0.0%   | 18.3%     | 0.0%                | 66.2% | 33.7% | 0.1%   | 44.8%     | 100.0% |  |
| PHF   | .000                      | .000 | .000  | .000   | .000      | .885                | .912  | .000  | .250   | .916      | .919                      | .000 | .852  | .000   | .954      | .000                | .953  | .900  | .500   | .943      | .958   |  |

# National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-010 El Embarcadero & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | El Embarcadero Southbound |          |          |          |           | Grand Ave Westbound |           |          |            |           | El Embarcadero Northbound |          |           |            |            | Grand Ave Eastbound |           |           |            |            | Total      | Peds Total |
|--------------------|---------------------------|----------|----------|----------|-----------|---------------------|-----------|----------|------------|-----------|---------------------------|----------|-----------|------------|------------|---------------------|-----------|-----------|------------|------------|------------|------------|
|                    | LEFT                      | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                      | THRU     | RIGHT     | PEDS       | APP.TOTAL  | LEFT                | THRU      | RIGHT     | PEDS       | APP.TOTAL  |            |            |
| 7:00               | 0                         | 0        | 0        | 0        | 0         | 2                   | 0         | 0        | 13         | 2         | 7                         | 0        | 0         | 9          | 7          | 0                   | 3         | 1         | 6          | 4          | 13         | 28         |
| 7:15               | 0                         | 0        | 0        | 0        | 0         | 0                   | 1         | 0        | 9          | 1         | 2                         | 0        | 0         | 11         | 2          | 0                   | 0         | 2         | 3          | 2          | 5          | 23         |
| 7:30               | 0                         | 0        | 0        | 0        | 0         | 2                   | 3         | 0        | 15         | 5         | 2                         | 0        | 0         | 11         | 2          | 0                   | 1         | 3         | 8          | 4          | 11         | 34         |
| 7:45               | 0                         | 0        | 0        | 0        | 0         | 1                   | 7         | 0        | 7          | 8         | 10                        | 0        | 0         | 11         | 10         | 0                   | 2         | 4         | 3          | 6          | 24         | 21         |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>5</b>            | <b>11</b> | <b>0</b> | <b>44</b>  | <b>16</b> | <b>21</b>                 | <b>0</b> | <b>0</b>  | <b>42</b>  | <b>21</b>  | <b>0</b>            | <b>6</b>  | <b>10</b> | <b>20</b>  | <b>16</b>  | <b>53</b>  | <b>106</b> |
| 8:00               | 0                         | 0        | 0        | 0        | 0         | 0                   | 8         | 0        | 21         | 8         | 12                        | 0        | 2         | 12         | 14         | 0                   | 1         | 1         | 8          | 2          | 24         | 41         |
| 8:15               | 0                         | 0        | 0        | 0        | 0         | 1                   | 9         | 0        | 16         | 10        | 13                        | 0        | 0         | 18         | 13         | 0                   | 3         | 0         | 3          | 3          | 26         | 37         |
| 8:30               | 0                         | 0        | 0        | 0        | 0         | 2                   | 5         | 0        | 10         | 7         | 15                        | 0        | 1         | 13         | 16         | 0                   | 0         | 0         | 0          | 0          | 23         | 23         |
| 8:45               | 0                         | 0        | 0        | 0        | 0         | 0                   | 3         | 0        | 17         | 3         | 15                        | 0        | 0         | 8          | 15         | 0                   | 5         | 1         | 8          | 6          | 24         | 33         |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>3</b>            | <b>25</b> | <b>0</b> | <b>64</b>  | <b>28</b> | <b>55</b>                 | <b>0</b> | <b>3</b>  | <b>51</b>  | <b>58</b>  | <b>0</b>            | <b>9</b>  | <b>2</b>  | <b>19</b>  | <b>11</b>  | <b>97</b>  | <b>134</b> |
| 16:00              | 0                         | 0        | 0        | 0        | 0         | 0                   | 1         | 0        | 11         | 1         | 0                         | 0        | 0         | 19         | 0          | 0                   | 7         | 2         | 13         | 9          | 10         | 43         |
| 16:15              | 0                         | 0        | 0        | 0        | 0         | 0                   | 0         | 0        | 20         | 0         | 4                         | 0        | 0         | 10         | 4          | 0                   | 6         | 1         | 12         | 7          | 11         | 42         |
| 16:30              | 0                         | 0        | 0        | 0        | 0         | 0                   | 1         | 0        | 11         | 1         | 3                         | 0        | 1         | 16         | 4          | 0                   | 4         | 3         | 20         | 7          | 12         | 47         |
| 16:45              | 0                         | 0        | 0        | 0        | 0         | 1                   | 1         | 0        | 17         | 2         | 3                         | 0        | 4         | 16         | 7          | 0                   | 7         | 0         | 13         | 7          | 16         | 46         |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>            | <b>3</b>  | <b>0</b> | <b>59</b>  | <b>4</b>  | <b>10</b>                 | <b>0</b> | <b>5</b>  | <b>61</b>  | <b>15</b>  | <b>0</b>            | <b>24</b> | <b>6</b>  | <b>58</b>  | <b>30</b>  | <b>49</b>  | <b>178</b> |
| 17:00              | 0                         | 0        | 0        | 0        | 0         | 1                   | 4         | 0        | 12         | 5         | 3                         | 0        | 1         | 21         | 4          | 0                   | 6         | 1         | 17         | 7          | 16         | 50         |
| 17:15              | 0                         | 0        | 0        | 0        | 0         | 2                   | 3         | 0        | 29         | 5         | 1                         | 0        | 1         | 16         | 2          | 0                   | 6         | 4         | 24         | 10         | 17         | 69         |
| 17:30              | 0                         | 0        | 0        | 0        | 0         | 0                   | 2         | 0        | 10         | 2         | 6                         | 0        | 0         | 27         | 6          | 0                   | 12        | 0         | 21         | 12         | 20         | 58         |
| 17:45              | 0                         | 0        | 0        | 0        | 0         | 1                   | 0         | 0        | 25         | 1         | 3                         | 0        | 1         | 35         | 4          | 0                   | 14        | 0         | 30         | 14         | 19         | 90         |
| <b>Total</b>       | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>4</b>            | <b>9</b>  | <b>0</b> | <b>76</b>  | <b>13</b> | <b>13</b>                 | <b>0</b> | <b>3</b>  | <b>99</b>  | <b>16</b>  | <b>0</b>            | <b>38</b> | <b>5</b>  | <b>92</b>  | <b>43</b>  | <b>72</b>  | <b>267</b> |
| <b>Grand Total</b> | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>13</b>           | <b>48</b> | <b>0</b> | <b>243</b> | <b>61</b> | <b>99</b>                 | <b>0</b> | <b>11</b> | <b>253</b> | <b>110</b> | <b>0</b>            | <b>77</b> | <b>23</b> | <b>189</b> | <b>100</b> | <b>271</b> | <b>685</b> |
| Apprch %           | 0.0%                      | 0.0%     | 0.0%     |          |           | 21.3%               | 78.7%     | 0.0%     |            |           | 90.0%                     | 0.0%     | 10.0%     |            |            | 0.0%                | 77.0%     | 23.0%     |            |            |            |            |
| Total %            | 0.0%                      | 0.0%     | 0.0%     |          | 0.0%      | 4.8%                | 17.7%     | 0.0%     |            | 22.5%     | 36.5%                     | 0.0%     | 4.1%      |            | 40.6%      | 0.0%                | 28.4%     | 8.5%      |            | 36.9%      | 100.0%     |            |

| AM PEAK HOUR                                      | El Embarcadero Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | El Embarcadero Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                           |      |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |      |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| 8:00  | 0                         | 0    | 0     | 0    | 0         | 0                   | 8     | 0     | 21   | 8         | 12                        | 0    | 2     | 12   | 14        | 0                   | 1     | 1     | 8    | 2         | 24    |
| 8:15  | 0                         | 0    | 0     | 0    | 0         | 1                   | 9     | 0     | 16   | 10        | 13                        | 0    | 0     | 18   | 13        | 0                   | 3     | 0     | 3    | 3         | 26    |
| 8:30  | 0                         | 0    | 0     | 0    | 0         | 2                   | 5     | 0     | 10   | 7         | 15                        | 0    | 1     | 13   | 16        | 0                   | 0     | 0     | 0    | 0         | 23    |
| 8:45  | 0                         | 0    | 0     | 0    | 0         | 0                   | 3     | 0     | 17   | 3         | 15                        | 0    | 0     | 8    | 15        | 0                   | 5     | 1     | 8    | 6         | 24    |
| Total Volume                                      | 0                         | 0    | 0     | 0    | 0         | 3                   | 25    | 0     | 64   | 28        | 55                        | 0    | 3     | 51   | 58        | 0                   | 9     | 2     | 19   | 11        | 97    |
| % App Total                                       | 0.0%                      | 0.0% | 0.0%  |      |           | 10.7%               | 89.3% | 0.0%  |      |           | 94.8%                     | 0.0% | 5.2%  |      |           | 0.0%                | 81.8% | 18.2% |      |           |       |
| PHF   | .000                      | .000 | .000  |      | .000      | .375                | .694  | .000  | .700 | .917      | .000                      | .375 |       | .906 | .000      | .450                | .500  |       | .458 | .933      |       |

| PM PEAK HOUR                                      | El Embarcadero Southbound |      |       |      |           | Grand Ave Westbound |       |       |      |           | El Embarcadero Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |                           |      |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |      |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| 17:00   | 0                         | 0    | 0     | 0    | 0         | 1                   | 4     | 0     | 12   | 5         | 3                         | 0    | 1     | 21   | 4         | 0                   | 6     | 1     | 17   | 7         | 16    |
| 17:15   | 0                         | 0    | 0     | 0    | 0         | 2                   | 3     | 0     | 29   | 5         | 1                         | 0    | 1     | 16   | 2         | 0                   | 6     | 4     | 24   | 10        | 17    |
| 17:30   | 0                         | 0    | 0     | 0    | 0         | 0                   | 2     | 0     | 10   | 2         | 6                         | 0    | 0     | 27   | 6         | 0                   | 12    | 0     | 21   | 12        | 20    |
| 17:45   | 0                         | 0    | 0     | 0    | 0         | 1                   | 0     | 0     | 25   | 1         | 3                         | 0    | 1     | 35   | 4         | 0                   | 14    | 0     | 30   | 14        | 19    |
| Total Volume                                      | 0                         | 0    | 0     | 0    | 0         | 4                   | 9     | 0     | 76   | 13        | 13                        | 0    | 3     | 99   | 16        | 0                   | 38    | 5     | 92   | 43        | 72    |
| % App Total                                       | 0.0%                      | 0.0% | 0.0%  |      |           | 30.8%               | 69.2% | 0.0%  |      |           | 81.3%                     | 0.0% | 18.8% |      |           | 0.0%                | 88.4% | 11.6% |      |           |       |
| PHF   | .000                      | .000 | .000  |      | .000      | .500                | .563  | .000  | .650 | .542      | .000                      | .750 |       | .667 | .000      | .679                | .313  |       | .768 | .900      |       |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-011 MacArthur Blvd & Grand Ave  
 Date : 1/25/2017

### Unshifted Count = All Vehicles & Utturns

| START TIME         | MacArthur Blvd Southbound |             |            |          |             | Grand Ave Westbound |             |          |           |             | MacArthur Blvd Northbound |          |          |          |           | Grand Ave Eastbound |             |             |          |             | Total        | Utturns Total |
|--------------------|---------------------------|-------------|------------|----------|-------------|---------------------|-------------|----------|-----------|-------------|---------------------------|----------|----------|----------|-----------|---------------------|-------------|-------------|----------|-------------|--------------|---------------|
|                    | LEFT                      | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT    | UTURNS    | APP.TOTAL   | LEFT                      | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                | THRU        | RIGHT       | UTURNS   | APP.TOTAL   |              |               |
| 7:00               | 52                        | 84          | 14         | 0        | 150         | 21                  | 106         | 0        | 1         | 128         | 0                         | 0        | 0        | 0        | 0         | 0                   | 56          | 32          | 0        | 88          | 366          | 1             |
| 7:15               | 45                        | 87          | 18         | 0        | 150         | 18                  | 112         | 0        | 0         | 130         | 0                         | 0        | 0        | 0        | 0         | 0                   | 43          | 47          | 0        | 90          | 370          | 0             |
| 7:30               | 49                        | 121         | 24         | 0        | 194         | 37                  | 129         | 0        | 1         | 167         | 0                         | 0        | 0        | 0        | 0         | 0                   | 67          | 40          | 0        | 107         | 468          | 1             |
| 7:45               | 74                        | 156         | 29         | 0        | 259         | 59                  | 165         | 0        | 8         | 232         | 0                         | 0        | 0        | 0        | 0         | 0                   | 64          | 49          | 0        | 113         | 604          | 8             |
| <b>Total</b>       | <b>220</b>                | <b>448</b>  | <b>85</b>  | <b>0</b> | <b>753</b>  | <b>135</b>          | <b>512</b>  | <b>0</b> | <b>10</b> | <b>657</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>            | <b>230</b>  | <b>168</b>  | <b>0</b> | <b>398</b>  | <b>1808</b>  | <b>10</b>     |
| 8:00               | 69                        | 183         | 31         | 0        | 283         | 56                  | 201         | 0        | 6         | 263         | 0                         | 0        | 0        | 0        | 0         | 0                   | 70          | 53          | 0        | 123         | 669          | 6             |
| 8:15               | 69                        | 171         | 29         | 0        | 269         | 45                  | 185         | 0        | 3         | 233         | 0                         | 0        | 0        | 0        | 0         | 0                   | 81          | 55          | 0        | 136         | 638          | 3             |
| 8:30               | 73                        | 166         | 42         | 0        | 281         | 28                  | 176         | 0        | 1         | 205         | 0                         | 0        | 0        | 0        | 0         | 0                   | 56          | 40          | 0        | 96          | 582          | 1             |
| 8:45               | 74                        | 129         | 53         | 0        | 256         | 36                  | 185         | 0        | 2         | 223         | 0                         | 0        | 0        | 0        | 0         | 0                   | 89          | 51          | 1        | 141         | 620          | 3             |
| <b>Total</b>       | <b>285</b>                | <b>649</b>  | <b>155</b> | <b>0</b> | <b>1089</b> | <b>165</b>          | <b>747</b>  | <b>0</b> | <b>12</b> | <b>924</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>            | <b>296</b>  | <b>199</b>  | <b>1</b> | <b>496</b>  | <b>2509</b>  | <b>13</b>     |
| 16:00              | 62                        | 170         | 36         | 0        | 268         | 58                  | 115         | 0        | 6         | 179         | 0                         | 0        | 0        | 0        | 0         | 0                   | 93          | 105         | 0        | 198         | 645          | 6             |
| 16:15              | 72                        | 170         | 38         | 0        | 280         | 59                  | 130         | 0        | 1         | 190         | 0                         | 0        | 0        | 0        | 0         | 0                   | 102         | 105         | 0        | 207         | 677          | 1             |
| 16:30              | 68                        | 176         | 32         | 0        | 276         | 86                  | 169         | 0        | 5         | 260         | 0                         | 0        | 0        | 0        | 0         | 0                   | 124         | 143         | 0        | 267         | 803          | 5             |
| 16:45              | 60                        | 170         | 37         | 0        | 267         | 72                  | 187         | 0        | 8         | 267         | 0                         | 0        | 0        | 0        | 0         | 0                   | 103         | 144         | 0        | 247         | 781          | 8             |
| <b>Total</b>       | <b>262</b>                | <b>686</b>  | <b>143</b> | <b>0</b> | <b>1091</b> | <b>275</b>          | <b>601</b>  | <b>0</b> | <b>20</b> | <b>896</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>            | <b>422</b>  | <b>497</b>  | <b>0</b> | <b>919</b>  | <b>2906</b>  | <b>20</b>     |
| 17:00              | 65                        | 177         | 47         | 0        | 289         | 56                  | 156         | 0        | 2         | 214         | 0                         | 0        | 0        | 0        | 0         | 0                   | 118         | 163         | 0        | 281         | 784          | 2             |
| 17:15              | 66                        | 168         | 36         | 0        | 270         | 66                  | 169         | 0        | 3         | 238         | 0                         | 0        | 0        | 0        | 0         | 0                   | 107         | 138         | 1        | 246         | 754          | 4             |
| 17:30              | 74                        | 214         | 42         | 0        | 330         | 50                  | 138         | 0        | 2         | 190         | 0                         | 0        | 0        | 0        | 0         | 0                   | 125         | 151         | 0        | 276         | 796          | 2             |
| 17:45              | 79                        | 204         | 38         | 0        | 321         | 70                  | 153         | 0        | 4         | 227         | 0                         | 0        | 0        | 0        | 0         | 0                   | 119         | 134         | 0        | 253         | 801          | 4             |
| <b>Total</b>       | <b>284</b>                | <b>763</b>  | <b>163</b> | <b>0</b> | <b>1210</b> | <b>242</b>          | <b>616</b>  | <b>0</b> | <b>11</b> | <b>869</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>            | <b>469</b>  | <b>586</b>  | <b>1</b> | <b>1056</b> | <b>3135</b>  | <b>12</b>     |
| <b>Grand Total</b> | <b>1051</b>               | <b>2546</b> | <b>546</b> | <b>0</b> | <b>4143</b> | <b>817</b>          | <b>2476</b> | <b>0</b> | <b>53</b> | <b>3346</b> | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>            | <b>1417</b> | <b>1450</b> | <b>2</b> | <b>2869</b> | <b>10358</b> | <b>55</b>     |
| Apprch %           | 25.4%                     | 61.5%       | 13.2%      | 0.0%     |             | 24.4%               | 74.0%       | 0.0%     | 1.6%      |             | 0.0%                      | 0.0%     | 0.0%     | 0.0%     |           |                     | 0.0%        | 49.4%       | 50.5%    | 0.1%        |              |               |
| Total %            | 10.1%                     | 24.6%       | 5.3%       | 0.0%     | 40.0%       | 7.9%                | 23.9%       | 0.0%     | 0.5%      | 32.3%       | 0.0%                      | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%                | 13.7%       | 14.0%       | 0.0%     | 27.7%       | 100.0%       |               |

| AM PEAK HOUR                                      | MacArthur Blvd Southbound |       |       |        |           | Grand Ave Westbound |       |       |        |           | MacArthur Blvd Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|---------------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                      | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                           |       |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |       |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |       |
| 8:00  | 69                        | 183   | 31    | 0      | 283       | 56                  | 201   | 0     | 6      | 263       | 0                         | 0    | 0     | 0      | 0         | 0                   | 70    | 53    | 0      | 123       | 669   |
| 8:15  | 69                        | 171   | 29    | 0      | 269       | 45                  | 185   | 0     | 3      | 233       | 0                         | 0    | 0     | 0      | 0         | 0                   | 81    | 55    | 0      | 136       | 638   |
| 8:30  | 73                        | 166   | 42    | 0      | 281       | 28                  | 176   | 0     | 1      | 205       | 0                         | 0    | 0     | 0      | 0         | 0                   | 56    | 40    | 0      | 96        | 582   |
| 8:45  | 74                        | 129   | 53    | 0      | 256       | 36                  | 185   | 0     | 2      | 223       | 0                         | 0    | 0     | 0      | 0         | 0                   | 89    | 51    | 1      | 141       | 620   |
| Total Volume                                      | 285                       | 649   | 155   | 0      | 1089      | 165                 | 747   | 0     | 12     | 924       | 0                         | 0    | 0     | 0      | 0         | 0                   | 296   | 199   | 1      | 496       | 2509  |
| % App Total                                       | 26.2%                     | 59.6% | 14.2% | 0.0%   |           | 17.9%               | 80.8% | 0.0%  | 1.3%   |           | 0.0%                      | 0.0% | 0.0%  | 0.0%   |           | 0.0%                | 59.7% | 40.1% | 0.2%   |           |       |
| PHF   | .963                      | .887  | .731  | .000   | .962      | .737                | .929  | .000  | .500   | .878      | .000                      | .000 | .000  | .000   | .000      | .000                | .831  | .905  | .250   | .879      | .938  |

| PM PEAK HOUR                                      | MacArthur Blvd Southbound |       |       |        |           | Grand Ave Westbound |       |       |        |           | MacArthur Blvd Northbound |      |       |        |           | Grand Ave Eastbound |       |       |        |           | Total |
|---|---------------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|---------------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                      | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                      | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |                           |       |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |       |       |        |           |                     |       |       |        |           |                           |      |       |        |           |                     |       |       |        |           |       |
| 17:00   | 65                        | 177   | 47    | 0      | 289       | 56                  | 156   | 0     | 2      | 214       | 0                         | 0    | 0     | 0      | 0         | 0                   | 118   | 163   | 0      | 281       | 784   |
| 17:15   | 66                        | 168   | 36    | 0      | 270       | 66                  | 169   | 0     | 3      | 238       | 0                         | 0    | 0     | 0      | 0         | 0                   | 107   | 138   | 1      | 246       | 754   |
| 17:30   | 74                        | 214   | 42    | 0      | 330       | 50                  | 138   | 0     | 2      | 190       | 0                         | 0    | 0     | 0      | 0         | 0                   | 125   | 151   | 0      | 276       | 796   |
| 17:45   | 79                        | 204   | 38    | 0      | 321       | 70                  | 153   | 0     | 4      | 227       | 0                         | 0    | 0     | 0      | 0         | 0                   | 119   | 134   | 0      | 253       | 801   |
| Total Volume                                      | 284                       | 763   | 163   | 0      | 1210      | 242                 | 616   | 0     | 11     | 869       | 0                         | 0    | 0     | 0      | 0         | 0                   | 469   | 586   | 1      | 1056      | 3135  |
| % App Total                                       | 23.5%                     | 63.1% | 13.5% | 0.0%   |           | 27.8%               | 70.9% | 0.0%  | 1.3%   |           | 0.0%                      | 0.0% | 0.0%  | 0.0%   |           | 0.0%                | 44.4% | 55.5% | 0.1%   |           |       |
| PHF   | .899                      | .891  | .867  | .000   | .917      | .864                | .911  | .000  | .688   | .913      | .000                      | .000 | .000  | .000   | .000      | .000                | .938  | .899  | .250   | .940      | .978  |

## National Data and Surveying Services

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Heavy Trucks On Bank 1  
 Bikes & Peds On Bank 2

(323) 782-0090  
[info@ndsdata.com](mailto:info@ndsdata.com)

File Name : 17-7003-011 MacArthur Blvd & Grand Ave  
 Date : 1/25/2017

### Bank 2 Count = Bikes & Peds

| START TIME         | MacArthur Blvd Southbound |          |          |            |           | Grand Ave Westbound |           |          |          |            | MacArthur Blvd Northbound |          |          |            |           | Grand Ave Eastbound |           |          |            |           | Total      | Peds Total  |
|--------------------|---------------------------|----------|----------|------------|-----------|---------------------|-----------|----------|----------|------------|---------------------------|----------|----------|------------|-----------|---------------------|-----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                      | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS     | APP.TOTAL  | LEFT                      | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU      | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                         | 0        | 0        | 9          | 0         | 1                   | 2         | 0        | 0        | 3          | 0                         | 0        | 0        | 11         | 0         | 1                   | 3         | 0        | 8          | 4         | 7          | 28          |
| 7:15               | 0                         | 0        | 0        | 8          | 0         | 1                   | 1         | 0        | 0        | 2          | 0                         | 0        | 0        | 17         | 0         | 0                   | 1         | 0        | 9          | 1         | 3          | 34          |
| 7:30               | 0                         | 0        | 0        | 17         | 0         | 0                   | 9         | 0        | 0        | 9          | 0                         | 0        | 0        | 9          | 0         | 0                   | 2         | 0        | 17         | 2         | 11         | 43          |
| 7:45               | 0                         | 1        | 0        | 43         | 1         | 1                   | 8         | 0        | 0        | 9          | 0                         | 0        | 0        | 19         | 0         | 0                   | 2         | 0        | 23         | 2         | 12         | 85          |
| <b>Total</b>       | <b>0</b>                  | <b>1</b> | <b>0</b> | <b>77</b>  | <b>1</b>  | <b>3</b>            | <b>20</b> | <b>0</b> | <b>0</b> | <b>23</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>56</b>  | <b>0</b>  | <b>1</b>            | <b>8</b>  | <b>0</b> | <b>57</b>  | <b>9</b>  | <b>33</b>  | <b>190</b>  |
| 8:00               | 0                         | 0        | 0        | 18         | 0         | 2                   | 11        | 0        | 1        | 13         | 1                         | 0        | 0        | 25         | 1         | 0                   | 2         | 0        | 15         | 2         | 16         | 59          |
| 8:15               | 0                         | 0        | 0        | 13         | 0         | 0                   | 14        | 0        | 0        | 14         | 0                         | 0        | 0        | 36         | 0         | 0                   | 3         | 1        | 25         | 4         | 18         | 74          |
| 8:30               | 0                         | 1        | 0        | 13         | 1         | 1                   | 5         | 0        | 0        | 6          | 0                         | 0        | 0        | 24         | 0         | 0                   | 4         | 0        | 7          | 4         | 11         | 44          |
| 8:45               | 0                         | 1        | 2        | 10         | 3         | 0                   | 6         | 0        | 0        | 6          | 0                         | 0        | 0        | 35         | 0         | 0                   | 3         | 1        | 16         | 4         | 13         | 61          |
| <b>Total</b>       | <b>0</b>                  | <b>2</b> | <b>2</b> | <b>54</b>  | <b>4</b>  | <b>3</b>            | <b>36</b> | <b>0</b> | <b>1</b> | <b>39</b>  | <b>1</b>                  | <b>0</b> | <b>0</b> | <b>120</b> | <b>1</b>  | <b>0</b>            | <b>12</b> | <b>2</b> | <b>63</b>  | <b>14</b> | <b>58</b>  | <b>238</b>  |
| 16:00              | 0                         | 1        | 0        | 13         | 1         | 1                   | 5         | 0        | 0        | 6          | 0                         | 0        | 0        | 30         | 0         | 0                   | 5         | 0        | 10         | 5         | 12         | 53          |
| 16:15              | 0                         | 0        | 1        | 29         | 1         | 0                   | 3         | 0        | 0        | 3          | 1                         | 0        | 0        | 41         | 1         | 0                   | 3         | 2        | 29         | 5         | 10         | 99          |
| 16:30              | 0                         | 0        | 1        | 37         | 1         | 0                   | 3         | 0        | 0        | 3          | 0                         | 0        | 0        | 38         | 0         | 0                   | 6         | 0        | 26         | 6         | 10         | 101         |
| 16:45              | 1                         | 2        | 0        | 18         | 3         | 0                   | 7         | 0        | 1        | 7          | 0                         | 0        | 0        | 32         | 0         | 0                   | 5         | 0        | 17         | 5         | 15         | 68          |
| <b>Total</b>       | <b>1</b>                  | <b>3</b> | <b>2</b> | <b>97</b>  | <b>6</b>  | <b>1</b>            | <b>18</b> | <b>0</b> | <b>1</b> | <b>19</b>  | <b>1</b>                  | <b>0</b> | <b>0</b> | <b>141</b> | <b>1</b>  | <b>0</b>            | <b>19</b> | <b>2</b> | <b>82</b>  | <b>21</b> | <b>47</b>  | <b>321</b>  |
| 17:00              | 0                         | 0        | 0        | 26         | 0         | 2                   | 9         | 0        | 1        | 11         | 0                         | 0        | 0        | 38         | 0         | 0                   | 9         | 0        | 29         | 9         | 20         | 94          |
| 17:15              | 0                         | 0        | 0        | 38         | 0         | 0                   | 4         | 0        | 0        | 4          | 0                         | 0        | 0        | 37         | 0         | 0                   | 7         | 0        | 29         | 7         | 11         | 104         |
| 17:30              | 0                         | 1        | 0        | 20         | 1         | 0                   | 4         | 0        | 0        | 4          | 0                         | 0        | 0        | 55         | 0         | 0                   | 10        | 1        | 32         | 11        | 16         | 107         |
| 17:45              | 0                         | 1        | 0        | 36         | 1         | 0                   | 0         | 0        | 2        | 0          | 0                         | 0        | 0        | 43         | 0         | 0                   | 15        | 0        | 27         | 15        | 16         | 108         |
| <b>Total</b>       | <b>0</b>                  | <b>2</b> | <b>0</b> | <b>120</b> | <b>2</b>  | <b>2</b>            | <b>17</b> | <b>0</b> | <b>3</b> | <b>19</b>  | <b>0</b>                  | <b>0</b> | <b>0</b> | <b>173</b> | <b>0</b>  | <b>0</b>            | <b>41</b> | <b>1</b> | <b>117</b> | <b>42</b> | <b>63</b>  | <b>413</b>  |
| <b>Grand Total</b> | <b>1</b>                  | <b>8</b> | <b>4</b> | <b>348</b> | <b>13</b> | <b>9</b>            | <b>91</b> | <b>0</b> | <b>5</b> | <b>100</b> | <b>2</b>                  | <b>0</b> | <b>0</b> | <b>490</b> | <b>2</b>  | <b>1</b>            | <b>80</b> | <b>5</b> | <b>319</b> | <b>86</b> | <b>201</b> | <b>1162</b> |
| Apprch %           | 7.7%                      | 61.5%    | 30.8%    |            |           | 9.0%                | 91.0%     | 0.0%     |          |            | 100.0%                    | 0.0%     | 0.0%     |            |           | 1.2%                | 93.0%     | 5.8%     |            |           |            |             |
| Total %            | 0.5%                      | 4.0%     | 2.0%     |            | 6.5%      | 4.5%                | 45.3%     | 0.0%     |          | 49.8%      | 1.0%                      | 0.0%     | 0.0%     |            | 1.0%      | 0.5%                | 39.8%     | 2.5%     |            | 42.8%     | 100.0%     |             |

| AM PEAK HOUR                                      | MacArthur Blvd Southbound |       |       |      |           | Grand Ave Westbound |       |       |      |           | MacArthur Blvd Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|---------------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                      | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                           |       |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                           |       |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| 8:00  | 0                         | 0     | 0     | 18   | 0         | 2                   | 11    | 0     | 1    | 13        | 1                         | 0    | 0     | 25   | 1         | 0                   | 2     | 0     | 15   | 2         | 16    |
| 8:15  | 0                         | 0     | 0     | 13   | 0         | 0                   | 14    | 0     | 0    | 14        | 0                         | 0    | 0     | 36   | 0         | 0                   | 3     | 1     | 25   | 4         | 18    |
| 8:30  | 0                         | 1     | 0     | 13   | 1         | 1                   | 5     | 0     | 0    | 6         | 0                         | 0    | 0     | 24   | 0         | 0                   | 4     | 0     | 7    | 4         | 11    |
| 8:45  | 0                         | 1     | 2     | 10   | 3         | 0                   | 6     | 0     | 0    | 6         | 0                         | 0    | 0     | 35   | 0         | 0                   | 3     | 1     | 16   | 4         | 13    |
| Total Volume                                      | 0                         | 2     | 2     | 54   | 4         | 3                   | 36    | 0     | 1    | 39        | 1                         | 0    | 0     | 120  | 1         | 0                   | 12    | 2     | 63   | 14        | 58    |
| % App Total                                       | 0.0%                      | 50.0% | 50.0% |      |           | 7.7%                | 92.3% | 0.0%  |      |           | 100.0%                    | 0.0% | 0.0%  |      |           | 0.0%                | 85.7% | 14.3% |      |           |       |
| PHF   | .000                      | .500  | .250  |      | .333      | .375                | .643  | .000  |      | .696      | .250                      | .000 | .000  |      | .250      | .000                | .750  | .500  |      | .875      | .806  |

| PM PEAK HOUR                                      | MacArthur Blvd Southbound |        |       |      |           | Grand Ave Westbound |       |       |      |           | MacArthur Blvd Northbound |      |       |      |           | Grand Ave Eastbound |       |       |      |           | Total |
|---|---------------------------|--------|-------|------|-----------|---------------------|-------|-------|------|-----------|---------------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                      | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                      | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |                           |        |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                           |        |       |      |           |                     |       |       |      |           |                           |      |       |      |           |                     |       |       |      |           |       |
| 17:00   | 0                         | 0      | 0     | 26   | 0         | 2                   | 9     | 0     | 1    | 11        | 0                         | 0    | 0     | 38   | 0         | 0                   | 9     | 0     | 29   | 9         | 20    |
| 17:15   | 0                         | 0      | 0     | 38   | 0         | 0                   | 4     | 0     | 0    | 4         | 0                         | 0    | 0     | 37   | 0         | 0                   | 7     | 0     | 29   | 7         | 11    |
| 17:30   | 0                         | 1      | 0     | 20   | 1         | 0                   | 4     | 0     | 0    | 4         | 0                         | 0    | 0     | 55   | 0         | 0                   | 10    | 1     | 32   | 11        | 16    |
| 17:45   | 0                         | 1      | 0     | 36   | 1         | 0                   | 0     | 0     | 2    | 0         | 0                         | 0    | 0     | 43   | 0         | 0                   | 15    | 0     | 27   | 15        | 16    |
| Total Volume                                      | 0                         | 2      | 0     | 120  | 2         | 2                   | 17    | 0     | 3    | 19        | 0                         | 0    | 0     | 173  | 0         | 0                   | 41    | 1     | 117  | 42        | 63    |
| % App Total                                       | 0.0%                      | 100.0% | 0.0%  |      |           | 10.5%               | 89.5% | 0.0%  |      |           | 0.0%                      | 0.0% | 0.0%  |      |           | 0.0%                | 97.6% | 2.4%  |      |           |       |
| PHF   | .000                      | .500   | .000  |      | .500      | .250                | .472  | .000  |      | .432      | .000                      | .000 | .000  |      | .000      | .000                | .683  | .250  |      | .700      | .788  |





# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-005 Telegraph Ave & 22nd St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |          |            | 22nd St Westbound |          |           |            |           | Telegraph Ave Northbound |            |          |            |            | 22nd St Eastbound |          |          |            |           | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|----------|------------|-------------------|----------|-----------|------------|-----------|--------------------------|------------|----------|------------|------------|-------------------|----------|----------|------------|-----------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS     | APP.TOTAL  | LEFT              | THRU     | RIGHT     | PEDS       | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:00               | 0                        | 8          | 0        | 0        | 8          | 0                 | 0        | 0         | 14         | 0         | 0                        | 4          | 0        | 6          | 4          | 0                 | 0        | 0        | 7          | 0         | 12         | 27         |
| 7:15               | 0                        | 11         | 0        | 0        | 11         | 0                 | 0        | 0         | 15         | 0         | 0                        | 1          | 0        | 2          | 1          | 1                 | 0        | 0        | 8          | 1         | 13         | 25         |
| 7:30               | 0                        | 9          | 0        | 1        | 9          | 1                 | 0        | 0         | 13         | 1         | 0                        | 2          | 0        | 5          | 2          | 0                 | 0        | 1        | 13         | 1         | 13         | 32         |
| 7:45               | 0                        | 15         | 0        | 0        | 15         | 1                 | 1        | 0         | 16         | 2         | 0                        | 2          | 0        | 11         | 2          | 0                 | 0        | 0        | 17         | 0         | 19         | 44         |
| <b>Total</b>       | <b>0</b>                 | <b>43</b>  | <b>0</b> | <b>1</b> | <b>43</b>  | <b>2</b>          | <b>1</b> | <b>0</b>  | <b>58</b>  | <b>3</b>  | <b>0</b>                 | <b>9</b>   | <b>0</b> | <b>24</b>  | <b>9</b>   | <b>1</b>          | <b>0</b> | <b>1</b> | <b>45</b>  | <b>2</b>  | <b>57</b>  | <b>128</b> |
| 8:00               | 0                        | 17         | 0        | 0        | 17         | 0                 | 0        | 0         | 15         | 0         | 0                        | 3          | 0        | 5          | 3          | 0                 | 0        | 1        | 21         | 1         | 21         | 41         |
| 8:15               | 0                        | 24         | 1        | 1        | 25         | 1                 | 0        | 0         | 21         | 1         | 0                        | 5          | 0        | 2          | 5          | 0                 | 0        | 0        | 16         | 0         | 31         | 40         |
| 8:30               | 0                        | 13         | 0        | 0        | 13         | 1                 | 0        | 0         | 21         | 1         | 0                        | 0          | 0        | 10         | 0          | 0                 | 0        | 1        | 16         | 1         | 15         | 47         |
| 8:45               | 0                        | 21         | 0        | 0        | 21         | 0                 | 0        | 0         | 11         | 0         | 0                        | 2          | 0        | 3          | 2          | 0                 | 0        | 0        | 18         | 0         | 23         | 32         |
| <b>Total</b>       | <b>0</b>                 | <b>75</b>  | <b>1</b> | <b>1</b> | <b>76</b>  | <b>2</b>          | <b>0</b> | <b>0</b>  | <b>68</b>  | <b>2</b>  | <b>0</b>                 | <b>10</b>  | <b>0</b> | <b>20</b>  | <b>10</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>71</b>  | <b>2</b>  | <b>90</b>  | <b>160</b> |
| 16:00              | 0                        | 7          | 0        | 0        | 7          | 0                 | 0        | 0         | 12         | 0         | 1                        | 7          | 0        | 6          | 8          | 0                 | 0        | 0        | 26         | 0         | 15         | 44         |
| 16:15              | 0                        | 3          | 0        | 0        | 3          | 0                 | 0        | 0         | 12         | 0         | 0                        | 15         | 0        | 10         | 15         | 2                 | 0        | 0        | 28         | 2         | 20         | 50         |
| 16:30              | 0                        | 7          | 1        | 0        | 8          | 0                 | 0        | 0         | 17         | 0         | 0                        | 8          | 1        | 6          | 9          | 0                 | 0        | 1        | 25         | 1         | 18         | 48         |
| 16:45              | 0                        | 11         | 1        | 0        | 12         | 3                 | 2        | 1         | 26         | 6         | 1                        | 16         | 0        | 5          | 17         | 0                 | 0        | 0        | 23         | 0         | 35         | 54         |
| <b>Total</b>       | <b>0</b>                 | <b>28</b>  | <b>2</b> | <b>0</b> | <b>30</b>  | <b>3</b>          | <b>2</b> | <b>1</b>  | <b>67</b>  | <b>6</b>  | <b>2</b>                 | <b>46</b>  | <b>1</b> | <b>27</b>  | <b>49</b>  | <b>2</b>          | <b>0</b> | <b>1</b> | <b>102</b> | <b>3</b>  | <b>88</b>  | <b>196</b> |
| 17:00              | 0                        | 10         | 2        | 0        | 12         | 1                 | 0        | 5         | 40         | 6         | 0                        | 21         | 2        | 5          | 23         | 0                 | 0        | 1        | 17         | 1         | 42         | 62         |
| 17:15              | 0                        | 12         | 0        | 0        | 12         | 1                 | 0        | 3         | 29         | 4         | 0                        | 28         | 0        | 15         | 28         | 0                 | 0        | 2        | 25         | 2         | 46         | 69         |
| 17:30              | 0                        | 11         | 0        | 0        | 11         | 1                 | 2        | 3         | 25         | 6         | 2                        | 15         | 0        | 8          | 17         | 0                 | 0        | 0        | 24         | 0         | 34         | 57         |
| 17:45              | 0                        | 7          | 0        | 0        | 7          | 0                 | 0        | 3         | 36         | 3         | 0                        | 15         | 0        | 4          | 15         | 1                 | 0        | 1        | 33         | 2         | 27         | 73         |
| <b>Total</b>       | <b>0</b>                 | <b>40</b>  | <b>2</b> | <b>0</b> | <b>42</b>  | <b>3</b>          | <b>2</b> | <b>14</b> | <b>130</b> | <b>19</b> | <b>2</b>                 | <b>79</b>  | <b>2</b> | <b>32</b>  | <b>83</b>  | <b>1</b>          | <b>0</b> | <b>4</b> | <b>99</b>  | <b>5</b>  | <b>149</b> | <b>261</b> |
| <b>Grand Total</b> | <b>0</b>                 | <b>186</b> | <b>5</b> | <b>2</b> | <b>191</b> | <b>10</b>         | <b>5</b> | <b>15</b> | <b>323</b> | <b>30</b> | <b>4</b>                 | <b>144</b> | <b>3</b> | <b>103</b> | <b>151</b> | <b>4</b>          | <b>0</b> | <b>8</b> | <b>317</b> | <b>12</b> | <b>384</b> | <b>745</b> |
| Apprch %           | 0.0%                     | 97.4%      | 2.6%     |          |            | 33.3%             | 16.7%    | 50.0%     |            |           | 2.6%                     | 95.4%      | 2.0%     |            |            | 33.3%             | 0.0%     | 66.7%    |            |           |            |            |
| Total %            | 0.0%                     | 48.4%      | 1.3%     |          | 49.7%      | 2.6%              | 1.3%     | 3.9%      |            | 7.8%      | 1.0%                     | 37.5%      | 0.8%     |            | 39.3%      | 1.0%              | 0.0%     | 2.1%     |            | 3.1%      | 100.0%     |            |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | 22nd St Westbound |      |       |      |           | Telegraph Ave Northbound |        |       |      |           | 22nd St Eastbound |      |        |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|--------------------------|--------|-------|------|-----------|-------------------|------|--------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                          |       |       |      |           |                   |      |       |      |           |                          |        |       |      |           |                   |      |        |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                          |       |       |      |           |                   |      |       |      |           |                          |        |       |      |           |                   |      |        |      |           |       |
| 8:00  | 0                        | 17    | 0     | 0    | 17        | 0                 | 0    | 0     | 15   | 0         | 0                        | 3      | 0     | 5    | 3         | 0                 | 0    | 1      | 21   | 1         | 21    |
| 8:15  | 0                        | 24    | 1     | 1    | 25        | 1                 | 0    | 0     | 21   | 1         | 0                        | 5      | 0     | 2    | 5         | 0                 | 0    | 0      | 16   | 0         | 31    |
| 8:30  | 0                        | 13    | 0     | 0    | 13        | 1                 | 0    | 0     | 21   | 1         | 0                        | 0      | 0     | 10   | 0         | 0                 | 0    | 1      | 16   | 1         | 15    |
| 8:45  | 0                        | 21    | 0     | 0    | 21        | 0                 | 0    | 0     | 11   | 0         | 0                        | 2      | 0     | 3    | 2         | 0                 | 0    | 0      | 18   | 0         | 23    |
| Total Volume                                      | 0                        | 75    | 1     | 1    | 76        | 2                 | 0    | 0     | 68   | 2         | 0                        | 10     | 0     | 20   | 10        | 0                 | 0    | 2      | 71   | 2         | 90    |
| % App Total                                       | 0.0%                     | 98.7% | 1.3%  |      |           | 100.0%            | 0.0% | 0.0%  |      |           | 0.0%                     | 100.0% | 0.0%  |      |           | 0.0%              | 0.0% | 100.0% |      |           |       |
| PHF   | .000                     | .781  | .250  |      | .760      | .500              | .000 | .000  |      | .500      | .000                     | .500   | .000  |      | .500      | .000              | .000 | .500   |      | .500      | .726  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | 22nd St Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | 22nd St Eastbound |      |        |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|------|--------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:30 to 17:30            |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |        |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:30 |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |        |      |           |       |
| 16:30   | 0                        | 7     | 1     | 0    | 8         | 0                 | 0     | 0     | 17   | 0         | 0                        | 8     | 1     | 6    | 9         | 0                 | 0    | 1      | 25   | 1         | 18    |
| 16:45   | 0                        | 11    | 1     | 0    | 12        | 3                 | 2     | 1     | 26   | 6         | 1                        | 16    | 0     | 5    | 17        | 0                 | 0    | 0      | 23   | 0         | 35    |
| 17:00   | 0                        | 10    | 2     | 0    | 12        | 1                 | 0     | 5     | 40   | 6         | 0                        | 21    | 2     | 5    | 23        | 0                 | 0    | 1      | 17   | 1         | 42    |
| 17:15   | 0                        | 12    | 0     | 0    | 12        | 1                 | 0     | 3     | 29   | 4         | 0                        | 28    | 0     | 15   | 28        | 0                 | 0    | 2      | 25   | 2         | 46    |
| Total Volume                                      | 0                        | 40    | 4     | 0    | 44        | 5                 | 2     | 9     | 112  | 16        | 1                        | 73    | 3     | 31   | 77        | 0                 | 0    | 4      | 90   | 4         | 141   |
| % App Total                                       | 0.0%                     | 90.9% | 9.1%  |      |           | 31.3%             | 12.5% | 56.3% |      |           | 1.3%                     | 94.8% | 3.9%  |      |           | 0.0%              | 0.0% | 100.0% |      |           |       |
| PHF   | .000                     | .833  | .500  |      | .917      | .417              | .250  | .450  |      | .667      | .250                     | .652  | .375  |      | .688      | .000              | .000 | .500   |      | .500      | .766  |



# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-006 Valley St & 22nd St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Valley St Southbound |          |          |           |           | 22nd St Westbound |           |          |           |           | Valley St Northbound |          |          |           |           | 22nd St Eastbound |          |          |          |           | Total      | Peds Total |
|--------------------|----------------------|----------|----------|-----------|-----------|-------------------|-----------|----------|-----------|-----------|----------------------|----------|----------|-----------|-----------|-------------------|----------|----------|----------|-----------|------------|------------|
|                    | LEFT                 | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT                 | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL |            |            |
| 7:00               | 1                    | 0        | 0        | 2         | 1         | 0                 | 0         | 0        | 5         | 0         | 0                    | 0        | 0        | 3         | 0         | 0                 | 0        | 0        | 0        | 0         | 1          | 10         |
| 7:15               | 0                    | 0        | 0        | 2         | 0         | 0                 | 0         | 0        | 3         | 0         | 0                    | 0        | 0        | 2         | 0         | 0                 | 0        | 1        | 0        | 0         | 0          | 8          |
| 7:30               | 0                    | 0        | 1        | 4         | 1         | 0                 | 0         | 0        | 6         | 0         | 0                    | 0        | 0        | 1         | 0         | 0                 | 0        | 0        | 0        | 0         | 1          | 11         |
| 7:45               | 0                    | 0        | 1        | 5         | 1         | 0                 | 1         | 0        | 6         | 1         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 1        | 0        | 0         | 2          | 16         |
| <b>Total</b>       | <b>1</b>             | <b>0</b> | <b>2</b> | <b>13</b> | <b>3</b>  | <b>0</b>          | <b>1</b>  | <b>0</b> | <b>20</b> | <b>1</b>  | <b>0</b>             | <b>0</b> | <b>0</b> | <b>10</b> | <b>0</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>0</b> | <b>4</b>  | <b>45</b>  |            |
| 8:00               | 0                    | 0        | 0        | 3         | 0         | 0                 | 0         | 0        | 4         | 0         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 1        | 0        | 0         | 0          | 12         |
| 8:15               | 0                    | 0        | 0        | 3         | 0         | 0                 | 2         | 0        | 3         | 2         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 1        | 0        | 0         | 2          | 11         |
| 8:30               | 2                    | 0        | 1        | 1         | 3         | 0                 | 0         | 0        | 10        | 0         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 0        | 0        | 0         | 3          | 15         |
| 8:45               | 1                    | 0        | 0        | 8         | 1         | 0                 | 0         | 0        | 3         | 0         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 0        | 0        | 0         | 1          | 15         |
| <b>Total</b>       | <b>3</b>             | <b>0</b> | <b>1</b> | <b>15</b> | <b>4</b>  | <b>0</b>          | <b>2</b>  | <b>0</b> | <b>20</b> | <b>2</b>  | <b>0</b>             | <b>0</b> | <b>0</b> | <b>16</b> | <b>0</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>0</b> | <b>6</b>  | <b>53</b>  |            |
| 16:00              | 0                    | 0        | 0        | 14        | 0         | 0                 | 0         | 0        | 9         | 0         | 0                    | 0        | 0        | 8         | 0         | 0                 | 0        | 1        | 0        | 0         | 0          | 32         |
| 16:15              | 0                    | 0        | 0        | 6         | 0         | 0                 | 0         | 0        | 6         | 0         | 0                    | 0        | 0        | 8         | 0         | 0                 | 0        | 0        | 0        | 0         | 0          | 20         |
| 16:30              | 0                    | 0        | 0        | 2         | 0         | 0                 | 2         | 1        | 11        | 3         | 0                    | 0        | 0        | 3         | 0         | 0                 | 0        | 0        | 0        | 0         | 3          | 16         |
| 16:45              | 0                    | 0        | 2        | 7         | 2         | 0                 | 5         | 0        | 4         | 5         | 0                    | 0        | 0        | 4         | 0         | 0                 | 0        | 1        | 0        | 0         | 7          | 16         |
| <b>Total</b>       | <b>0</b>             | <b>0</b> | <b>2</b> | <b>29</b> | <b>2</b>  | <b>0</b>          | <b>7</b>  | <b>1</b> | <b>30</b> | <b>8</b>  | <b>0</b>             | <b>0</b> | <b>0</b> | <b>23</b> | <b>0</b>  | <b>0</b>          | <b>0</b> | <b>2</b> | <b>0</b> | <b>10</b> | <b>84</b>  |            |
| 17:00              | 0                    | 0        | 1        | 6         | 1         | 0                 | 6         | 1        | 6         | 7         | 0                    | 0        | 0        | 10        | 0         | 0                 | 2        | 0        | 2        | 2         | 10         | 24         |
| 17:15              | 0                    | 0        | 2        | 9         | 2         | 0                 | 5         | 0        | 4         | 5         | 0                    | 0        | 0        | 8         | 0         | 0                 | 0        | 0        | 0        | 0         | 7          | 21         |
| 17:30              | 0                    | 0        | 1        | 9         | 1         | 0                 | 5         | 1        | 9         | 6         | 0                    | 0        | 0        | 3         | 0         | 0                 | 1        | 0        | 0        | 1         | 8          | 21         |
| 17:45              | 0                    | 0        | 0        | 8         | 0         | 0                 | 3         | 0        | 3         | 3         | 0                    | 0        | 0        | 10        | 0         | 0                 | 0        | 1        | 0        | 0         | 3          | 22         |
| <b>Total</b>       | <b>0</b>             | <b>0</b> | <b>4</b> | <b>32</b> | <b>4</b>  | <b>0</b>          | <b>19</b> | <b>2</b> | <b>22</b> | <b>21</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>31</b> | <b>0</b>  | <b>3</b>          | <b>0</b> | <b>3</b> | <b>3</b> | <b>28</b> | <b>88</b>  |            |
| <b>Grand Total</b> | <b>4</b>             | <b>0</b> | <b>9</b> | <b>89</b> | <b>13</b> | <b>0</b>          | <b>29</b> | <b>3</b> | <b>92</b> | <b>32</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>80</b> | <b>0</b>  | <b>3</b>          | <b>0</b> | <b>9</b> | <b>3</b> | <b>48</b> | <b>270</b> |            |
| Apprch %           | 30.8%                | 0.0%     | 69.2%    |           |           | 0.0%              | 90.6%     | 9.4%     |           |           | 0.0%                 | 0.0%     | 0.0%     |           | 0.0%      | 100.0%            | 0.0%     |          |          |           |            |            |
| Total %            | 8.3%                 | 0.0%     | 18.8%    |           | 27.1%     | 0.0%              | 60.4%     | 6.3%     |           | 66.7%     | 0.0%                 | 0.0%     | 0.0%     |           | 0.0%      | 6.3%              | 0.0%     |          | 6.3%     |           | 100.0%     |            |

| AM PEAK HOUR                                      | Valley St Southbound |             |              |           |             | 22nd St Westbound |               |             |           |             | Valley St Northbound |             |             |           |             | 22nd St Eastbound |             |          |             |             | Total |
|---|----------------------|-------------|--------------|-----------|-------------|-------------------|---------------|-------------|-----------|-------------|----------------------|-------------|-------------|-----------|-------------|-------------------|-------------|----------|-------------|-------------|-------|
|   | LEFT                 | THRU        | RIGHT        | PEDS      | APP.TOTAL   | LEFT              | THRU          | RIGHT       | PEDS      | APP.TOTAL   | LEFT                 | THRU        | RIGHT       | PEDS      | APP.TOTAL   | LEFT              | THRU        | RIGHT    | PEDS        | APP.TOTAL   |       |
| Peak Hour Analysis From 08:00 to 09:00            |                      |             |              |           |             |                   |               |             |           |             |                      |             |             |           |             |                   |             |          |             |             |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                      |             |              |           |             |                   |               |             |           |             |                      |             |             |           |             |                   |             |          |             |             |       |
| 8:00  | 0                    | 0           | 0            | 3         | 0           | 0                 | 0             | 0           | 4         | 0           | 0                    | 0           | 0           | 4         | 0           | 0                 | 0           | 1        | 0           | 0           | 0     |
| 8:15  | 0                    | 0           | 0            | 3         | 0           | 0                 | 2             | 0           | 3         | 2           | 0                    | 0           | 0           | 4         | 0           | 0                 | 0           | 1        | 0           | 0           | 2     |
| 8:30  | 2                    | 0           | 1            | 1         | 3           | 0                 | 0             | 0           | 10        | 0           | 0                    | 0           | 0           | 4         | 0           | 0                 | 0           | 0        | 0           | 0           | 3     |
| 8:45  | 1                    | 0           | 0            | 8         | 1           | 0                 | 0             | 0           | 3         | 0           | 0                    | 0           | 0           | 4         | 0           | 0                 | 0           | 0        | 0           | 0           | 1     |
| <b>Total Volume</b>                               | <b>3</b>             | <b>0</b>    | <b>1</b>     | <b>15</b> | <b>4</b>    | <b>0</b>          | <b>2</b>      | <b>0</b>    | <b>20</b> | <b>2</b>    | <b>0</b>             | <b>0</b>    | <b>0</b>    | <b>16</b> | <b>0</b>    | <b>0</b>          | <b>0</b>    | <b>2</b> | <b>0</b>    | <b>6</b>    |       |
| <b>% App Total</b>                                | <b>75.0%</b>         | <b>0.0%</b> | <b>25.0%</b> |           |             | <b>0.0%</b>       | <b>100.0%</b> | <b>0.0%</b> |           |             | <b>0.0%</b>          | <b>0.0%</b> | <b>0.0%</b> |           | <b>0.0%</b> | <b>0.0%</b>       | <b>0.0%</b> |          |             |             |       |
| <b>PHF</b>  | <b>.375</b>          | <b>.000</b> | <b>.250</b>  |           | <b>.333</b> | <b>.000</b>       | <b>.250</b>   | <b>.000</b> |           | <b>.250</b> | <b>.000</b>          | <b>.000</b> | <b>.000</b> |           | <b>.000</b> | <b>.000</b>       | <b>.000</b> |          | <b>.000</b> | <b>.500</b> |       |

| PM PEAK HOUR                                      | Valley St Southbound |             |               |           |             | 22nd St Westbound |              |             |           |             | Valley St Northbound |             |             |           |             | 22nd St Eastbound |             |          |             |             | Total |
|---|----------------------|-------------|---------------|-----------|-------------|-------------------|--------------|-------------|-----------|-------------|----------------------|-------------|-------------|-----------|-------------|-------------------|-------------|----------|-------------|-------------|-------|
|   | LEFT                 | THRU        | RIGHT         | PEDS      | APP.TOTAL   | LEFT              | THRU         | RIGHT       | PEDS      | APP.TOTAL   | LEFT                 | THRU        | RIGHT       | PEDS      | APP.TOTAL   | LEFT              | THRU        | RIGHT    | PEDS        | APP.TOTAL   |       |
| Peak Hour Analysis From 16:45 to 17:45            |                      |             |               |           |             |                   |              |             |           |             |                      |             |             |           |             |                   |             |          |             |             |       |
| Peak Hour For Entire Intersection Begins at 16:45 |                      |             |               |           |             |                   |              |             |           |             |                      |             |             |           |             |                   |             |          |             |             |       |
| 16:45   | 0                    | 0           | 2             | 7         | 2           | 0                 | 5            | 0           | 4         | 5           | 0                    | 0           | 0           | 4         | 0           | 0                 | 0           | 1        | 0           | 0           | 7     |
| 17:00   | 0                    | 0           | 1             | 6         | 1           | 0                 | 6            | 1           | 6         | 7           | 0                    | 0           | 0           | 10        | 0           | 2                 | 0           | 2        | 2           | 0           | 10    |
| 17:15   | 0                    | 0           | 2             | 9         | 2           | 0                 | 5            | 0           | 4         | 5           | 0                    | 0           | 0           | 8         | 0           | 0                 | 0           | 0        | 0           | 0           | 7     |
| 17:30   | 0                    | 0           | 1             | 9         | 1           | 0                 | 5            | 1           | 9         | 6           | 0                    | 0           | 0           | 3         | 0           | 1                 | 0           | 0        | 1           | 0           | 8     |
| <b>Total Volume</b>                               | <b>0</b>             | <b>0</b>    | <b>6</b>      | <b>31</b> | <b>6</b>    | <b>0</b>          | <b>21</b>    | <b>2</b>    | <b>23</b> | <b>23</b>   | <b>0</b>             | <b>0</b>    | <b>0</b>    | <b>25</b> | <b>0</b>    | <b>3</b>          | <b>0</b>    | <b>3</b> | <b>3</b>    | <b>32</b>   |       |
| <b>% App Total</b>                                | <b>0.0%</b>          | <b>0.0%</b> | <b>100.0%</b> |           |             | <b>0.0%</b>       | <b>91.3%</b> | <b>8.7%</b> |           |             | <b>0.0%</b>          | <b>0.0%</b> | <b>0.0%</b> |           | <b>0.0%</b> | <b>100.0%</b>     | <b>0.0%</b> |          |             |             |       |
| <b>PHF</b>  | <b>.000</b>          | <b>.000</b> | <b>.750</b>   |           | <b>.750</b> | <b>.000</b>       | <b>.875</b>  | <b>.500</b> |           | <b>.821</b> | <b>.000</b>          | <b>.000</b> | <b>.000</b> |           | <b>.000</b> | <b>.375</b>       | <b>.000</b> |          | <b>.375</b> | <b>.800</b> |       |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-011 Broadway & 22nd Street

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

## Unshifted Count = All Vehicles & Turns

| START TIME         | Broadway Southbound |             |           |          |             | 22nd Street Westbound |            |             |          |             | Broadway Northbound |             |          |           |             | 22nd Street Eastbound |          |          |          |           | Total       | Uturns Total |
|--------------------|---------------------|-------------|-----------|----------|-------------|-----------------------|------------|-------------|----------|-------------|---------------------|-------------|----------|-----------|-------------|-----------------------|----------|----------|----------|-----------|-------------|--------------|
|                    | LEFT                | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT                  | THRU       | RIGHT       | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT    | UTURNS    | APP.TOTAL   | LEFT                  | THRU     | RIGHT    | UTURNS   | APP.TOTAL |             |              |
| 7:00               | 0                   | 46          | 4         | 0        | 50          | 0                     | 1          | 37          | 0        | 38          | 1                   | 34          | 0        | 0         | 35          | 0                     | 0        | 0        | 0        | 0         | 123         | 0            |
| 7:15               | 0                   | 62          | 1         | 0        | 63          | 2                     | 5          | 31          | 0        | 38          | 3                   | 66          | 0        | 1         | 70          | 0                     | 0        | 0        | 0        | 0         | 171         | 1            |
| 7:30               | 0                   | 61          | 2         | 0        | 63          | 2                     | 6          | 29          | 0        | 37          | 5                   | 63          | 0        | 0         | 68          | 0                     | 0        | 0        | 0        | 0         | 168         | 0            |
| 7:45               | 0                   | 94          | 6         | 0        | 100         | 2                     | 10         | 39          | 0        | 51          | 5                   | 88          | 0        | 0         | 93          | 0                     | 0        | 0        | 0        | 0         | 244         | 0            |
| <b>Total</b>       | <b>0</b>            | <b>263</b>  | <b>13</b> | <b>0</b> | <b>276</b>  | <b>6</b>              | <b>22</b>  | <b>136</b>  | <b>0</b> | <b>164</b>  | <b>14</b>           | <b>251</b>  | <b>0</b> | <b>1</b>  | <b>266</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>706</b>  | <b>1</b>     |
| 8:00               | 0                   | 99          | 4         | 0        | 103         | 4                     | 5          | 52          | 0        | 61          | 3                   | 98          | 0        | 0         | 101         | 0                     | 0        | 0        | 0        | 0         | 265         | 0            |
| 8:15               | 0                   | 129         | 4         | 0        | 133         | 0                     | 6          | 46          | 0        | 52          | 2                   | 88          | 0        | 0         | 90          | 0                     | 0        | 0        | 0        | 0         | 275         | 0            |
| 8:30               | 0                   | 123         | 2         | 0        | 125         | 4                     | 9          | 57          | 0        | 70          | 3                   | 104         | 0        | 0         | 107         | 0                     | 0        | 0        | 0        | 0         | 302         | 0            |
| 8:45               | 0                   | 122         | 1         | 0        | 123         | 5                     | 5          | 51          | 0        | 61          | 7                   | 85          | 0        | 1         | 93          | 0                     | 0        | 0        | 0        | 0         | 277         | 1            |
| <b>Total</b>       | <b>0</b>            | <b>473</b>  | <b>11</b> | <b>0</b> | <b>484</b>  | <b>13</b>             | <b>25</b>  | <b>206</b>  | <b>0</b> | <b>244</b>  | <b>15</b>           | <b>375</b>  | <b>0</b> | <b>1</b>  | <b>391</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1119</b> | <b>1</b>     |
| 16:00              | 0                   | 104         | 4         | 0        | 108         | 8                     | 24         | 95          | 0        | 127         | 7                   | 133         | 0        | 1         | 141         | 0                     | 0        | 0        | 0        | 0         | 376         | 1            |
| 16:15              | 0                   | 103         | 8         | 0        | 111         | 3                     | 25         | 95          | 0        | 123         | 6                   | 133         | 0        | 2         | 141         | 0                     | 0        | 0        | 0        | 0         | 375         | 2            |
| 16:30              | 0                   | 109         | 9         | 0        | 118         | 2                     | 29         | 107         | 0        | 138         | 4                   | 141         | 0        | 2         | 147         | 0                     | 0        | 0        | 0        | 0         | 403         | 2            |
| 16:45              | 0                   | 104         | 4         | 0        | 108         | 3                     | 25         | 94          | 0        | 122         | 9                   | 153         | 0        | 1         | 163         | 0                     | 0        | 0        | 0        | 0         | 393         | 1            |
| <b>Total</b>       | <b>0</b>            | <b>420</b>  | <b>25</b> | <b>0</b> | <b>445</b>  | <b>16</b>             | <b>103</b> | <b>391</b>  | <b>0</b> | <b>510</b>  | <b>26</b>           | <b>560</b>  | <b>0</b> | <b>6</b>  | <b>592</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1547</b> | <b>6</b>     |
| 17:00              | 0                   | 128         | 7         | 0        | 135         | 2                     | 30         | 126         | 0        | 158         | 15                  | 145         | 0        | 0         | 160         | 0                     | 0        | 0        | 0        | 0         | 453         | 0            |
| 17:15              | 0                   | 100         | 6         | 0        | 106         | 8                     | 34         | 110         | 0        | 152         | 4                   | 159         | 0        | 1         | 164         | 0                     | 0        | 0        | 0        | 0         | 422         | 1            |
| 17:30              | 0                   | 106         | 13        | 0        | 119         | 2                     | 30         | 111         | 0        | 143         | 6                   | 142         | 0        | 0         | 148         | 0                     | 0        | 0        | 0        | 0         | 410         | 0            |
| 17:45              | 0                   | 139         | 7         | 0        | 146         | 7                     | 28         | 105         | 0        | 140         | 7                   | 145         | 0        | 2         | 154         | 0                     | 0        | 0        | 0        | 0         | 440         | 2            |
| <b>Total</b>       | <b>0</b>            | <b>473</b>  | <b>33</b> | <b>0</b> | <b>506</b>  | <b>19</b>             | <b>122</b> | <b>452</b>  | <b>0</b> | <b>593</b>  | <b>32</b>           | <b>591</b>  | <b>0</b> | <b>3</b>  | <b>626</b>  | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1725</b> | <b>3</b>     |
| <b>Grand Total</b> | <b>0</b>            | <b>1629</b> | <b>82</b> | <b>0</b> | <b>1711</b> | <b>54</b>             | <b>272</b> | <b>1185</b> | <b>0</b> | <b>1511</b> | <b>87</b>           | <b>1777</b> | <b>0</b> | <b>11</b> | <b>1875</b> | <b>0</b>              | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>5097</b> | <b>11</b>    |
| Apprch %           | 0.0%                | 95.2%       | 4.8%      | 0.0%     | 33.6%       | 3.6%                  | 18.0%      | 78.4%       | 0.0%     | 29.6%       | 4.6%                | 94.8%       | 0.0%     | 0.6%      | 36.8%       | 0.0%                  | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 100.0%      |              |
| Total %            | 0.0%                | 32.0%       | 1.6%      | 0.0%     | 33.6%       | 1.1%                  | 5.3%       | 23.2%       | 0.0%     | 29.6%       | 1.7%                | 34.9%       | 0.0%     | 0.2%      | 36.8%       | 0.0%                  | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 100.0%      |              |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 22nd Street Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 22nd Street Eastbound |      |       |        |           | Total  |
|---|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|--------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL |        |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |                       |      |       |        |           |        |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |                       |      |       |        |           |        |
| 8:00  | 0                   | 99    | 4     | 0      | 103       | 4                     | 5     | 52    | 0      | 61        | 3                   | 98    | 0     | 0      | 101       | 0                     | 0    | 0     | 0      | 0         | 265    |
| 8:15  | 0                   | 129   | 4     | 0      | 133       | 0                     | 6     | 46    | 0      | 52        | 2                   | 88    | 0     | 0      | 90        | 0                     | 0    | 0     | 0      | 0         | 275    |
| 8:30  | 0                   | 123   | 2     | 0      | 125       | 4                     | 9     | 57    | 0      | 70        | 3                   | 104   | 0     | 0      | 107       | 0                     | 0    | 0     | 0      | 0         | 302    |
| 8:45  | 0                   | 122   | 1     | 0      | 123       | 5                     | 5     | 51    | 0      | 61        | 7                   | 85    | 0     | 1      | 93        | 0                     | 0    | 0     | 0      | 0         | 277    |
| Total Volume                                      | 0                   | 473   | 11    | 0      | 484       | 13                    | 25    | 206   | 0      | 244       | 15                  | 375   | 0     | 1      | 391       | 0                     | 0    | 0     | 0      | 0         | 1119   |
| % App Total                                       | 0.0%                | 97.7% | 2.3%  | 0.0%   | 33.6%     | 5.3%                  | 10.2% | 84.4% | 0.0%   | 29.6%     | 3.8%                | 95.9% | 0.0%  | 0.3%   | 36.8%     | 0.0%                  | 0.0% | 0.0%  | 0.0%   | 0.0%      | 100.0% |
| PHF   | .000                | .917  | .688  | .000   | .910      | .650                  | .694  | .904  | .000   | .871      | .536                | .901  | .000  | .250   | .914      | .000                  | .000 | .000  | .000   | .000      | .926   |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 22nd Street Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 22nd Street Eastbound |      |       |        |           | Total  |
|---|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|--------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL |        |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |                       |      |       |        |           |        |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                       |       |       |        |           |                     |       |       |        |           |                       |      |       |        |           |        |
| 17:00   | 0                   | 128   | 7     | 0      | 135       | 2                     | 30    | 126   | 0      | 158       | 15                  | 145   | 0     | 0      | 160       | 0                     | 0    | 0     | 0      | 0         | 453    |
| 17:15   | 0                   | 100   | 6     | 0      | 106       | 8                     | 34    | 110   | 0      | 152       | 4                   | 159   | 0     | 1      | 164       | 0                     | 0    | 0     | 0      | 0         | 422    |
| 17:30   | 0                   | 106   | 13    | 0      | 119       | 2                     | 30    | 111   | 0      | 143       | 6                   | 142   | 0     | 0      | 148       | 0                     | 0    | 0     | 0      | 0         | 410    |
| 17:45   | 0                   | 139   | 7     | 0      | 146       | 7                     | 28    | 105   | 0      | 140       | 7                   | 145   | 0     | 2      | 154       | 0                     | 0    | 0     | 0      | 0         | 440    |
| Total Volume                                      | 0                   | 473   | 33    | 0      | 506       | 19                    | 122   | 452   | 0      | 593       | 32                  | 591   | 0     | 3      | 626       | 0                     | 0    | 0     | 0      | 0         | 1725   |
| % App Total                                       | 0.0%                | 93.5% | 6.5%  | 0.0%   | 33.6%     | 3.2%                  | 20.6% | 76.2% | 0.0%   | 29.6%     | 5.1%                | 94.4% | 0.0%  | 0.5%   | 36.8%     | 0.0%                  | 0.0% | 0.0%  | 0.0%   | 0.0%      | 100.0% |
| PHF   | .000                | .851  | .635  | .000   | .866      | .594                  | .897  | .897  | .000   | .938      | .533                | .929  | .000  | .375   | .954      | .000                  | .000 | .000  | .000   | .000      | .952   |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-011 Broadway & 22nd Street

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Bank 1 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |          |            | 22nd Street Westbound |          |           |            |            | Broadway Northbound |            |          |            |            | 22nd Street Eastbound |          |          |            |           | Total    | Peds Total |          |            |             |
|--------------------|---------------------|------------|----------|----------|------------|-----------------------|----------|-----------|------------|------------|---------------------|------------|----------|------------|------------|-----------------------|----------|----------|------------|-----------|----------|------------|----------|------------|-------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS     | APP.TOTAL  | LEFT                  | THRU     | RIGHT     | PEDS       | APP.TOTAL  | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL |          |            |          |            |             |
| 7:00               | 0                   | 3          | 0        | 1        | 3          | 0                     | 0        | 0         | 19         | 0          | 0                   | 2          | 1        | 7          | 3          | 0                     | 0        | 0        | 16         | 0         | 0        | 0          | 0        | 6          | 43          |
| 7:15               | 0                   | 11         | 0        | 0        | 11         | 0                     | 0        | 1         | 17         | 1          | 1                   | 0          | 0        | 8          | 1          | 0                     | 1        | 0        | 30         | 1         | 0        | 1          | 0        | 14         | 55          |
| 7:30               | 0                   | 9          | 0        | 0        | 9          | 0                     | 0        | 1         | 23         | 1          | 0                   | 5          | 0        | 9          | 5          | 0                     | 0        | 0        | 25         | 0         | 0        | 0          | 0        | 15         | 57          |
| 7:45               | 0                   | 15         | 0        | 0        | 15         | 0                     | 1        | 1         | 36         | 2          | 0                   | 1          | 0        | 7          | 1          | 0                     | 1        | 0        | 40         | 1         | 0        | 1          | 0        | 19         | 83          |
| <b>Total</b>       | <b>0</b>            | <b>38</b>  | <b>0</b> | <b>1</b> | <b>38</b>  | <b>0</b>              | <b>1</b> | <b>3</b>  | <b>95</b>  | <b>4</b>   | <b>1</b>            | <b>8</b>   | <b>1</b> | <b>31</b>  | <b>10</b>  | <b>0</b>              | <b>2</b> | <b>0</b> | <b>111</b> | <b>2</b>  | <b>0</b> | <b>2</b>   | <b>0</b> | <b>54</b>  | <b>238</b>  |
| 8:00               | 0                   | 15         | 1        | 1        | 16         | 1                     | 1        | 0         | 42         | 2          | 0                   | 0          | 0        | 6          | 0          | 0                     | 0        | 1        | 53         | 1         | 0        | 0          | 1        | 19         | 102         |
| 8:15               | 1                   | 14         | 1        | 1        | 16         | 0                     | 0        | 3         | 50         | 3          | 0                   | 3          | 0        | 17         | 3          | 0                     | 0        | 1        | 48         | 1         | 0        | 0          | 1        | 23         | 116         |
| 8:30               | 0                   | 15         | 1        | 0        | 16         | 0                     | 1        | 2         | 32         | 3          | 0                   | 2          | 0        | 7          | 2          | 0                     | 0        | 0        | 46         | 0         | 0        | 0          | 0        | 21         | 85          |
| 8:45               | 0                   | 20         | 4        | 0        | 24         | 0                     | 0        | 2         | 37         | 2          | 1                   | 2          | 0        | 21         | 3          | 0                     | 0        | 0        | 43         | 0         | 0        | 0          | 0        | 29         | 101         |
| <b>Total</b>       | <b>1</b>            | <b>64</b>  | <b>7</b> | <b>2</b> | <b>72</b>  | <b>1</b>              | <b>2</b> | <b>7</b>  | <b>161</b> | <b>10</b>  | <b>1</b>            | <b>7</b>   | <b>0</b> | <b>51</b>  | <b>8</b>   | <b>0</b>              | <b>0</b> | <b>2</b> | <b>190</b> | <b>2</b>  | <b>0</b> | <b>0</b>   | <b>2</b> | <b>92</b>  | <b>404</b>  |
| 16:00              | 0                   | 2          | 0        | 2        | 2          | 0                     | 1        | 3         | 33         | 4          | 0                   | 11         | 0        | 8          | 11         | 0                     | 0        | 0        | 33         | 0         | 0        | 0          | 0        | 17         | 76          |
| 16:15              | 0                   | 6          | 0        | 0        | 6          | 2                     | 0        | 4         | 35         | 6          | 0                   | 4          | 0        | 9          | 4          | 0                     | 0        | 0        | 42         | 0         | 0        | 0          | 0        | 16         | 86          |
| 16:30              | 0                   | 6          | 0        | 0        | 6          | 0                     | 1        | 10        | 30         | 11         | 1                   | 8          | 0        | 7          | 9          | 1                     | 0        | 0        | 51         | 1         | 0        | 0          | 0        | 27         | 88          |
| 16:45              | 0                   | 9          | 1        | 0        | 10         | 0                     | 0        | 12        | 26         | 12         | 0                   | 17         | 2        | 12         | 19         | 0                     | 1        | 0        | 41         | 1         | 0        | 1          | 0        | 42         | 79          |
| <b>Total</b>       | <b>0</b>            | <b>23</b>  | <b>1</b> | <b>2</b> | <b>24</b>  | <b>2</b>              | <b>2</b> | <b>29</b> | <b>124</b> | <b>33</b>  | <b>1</b>            | <b>40</b>  | <b>2</b> | <b>36</b>  | <b>43</b>  | <b>1</b>              | <b>1</b> | <b>0</b> | <b>167</b> | <b>2</b>  | <b>0</b> | <b>1</b>   | <b>0</b> | <b>102</b> | <b>329</b>  |
| 17:00              | 0                   | 5          | 0        | 0        | 5          | 0                     | 0        | 11        | 46         | 11         | 1                   | 15         | 0        | 13         | 16         | 0                     | 0        | 0        | 69         | 0         | 0        | 0          | 0        | 32         | 128         |
| 17:15              | 0                   | 4          | 0        | 0        | 4          | 2                     | 0        | 17        | 41         | 19         | 0                   | 20         | 0        | 17         | 20         | 0                     | 0        | 1        | 41         | 1         | 0        | 0          | 1        | 44         | 99          |
| 17:30              | 0                   | 2          | 0        | 0        | 2          | 0                     | 1        | 14        | 59         | 15         | 0                   | 11         | 2        | 13         | 13         | 1                     | 0        | 0        | 39         | 1         | 0        | 0          | 0        | 31         | 111         |
| 17:45              | 0                   | 2          | 0        | 0        | 2          | 0                     | 0        | 14        | 48         | 14         | 0                   | 17         | 0        | 11         | 17         | 0                     | 0        | 0        | 49         | 0         | 0        | 0          | 0        | 33         | 108         |
| <b>Total</b>       | <b>0</b>            | <b>13</b>  | <b>0</b> | <b>0</b> | <b>13</b>  | <b>2</b>              | <b>1</b> | <b>56</b> | <b>194</b> | <b>59</b>  | <b>1</b>            | <b>63</b>  | <b>2</b> | <b>54</b>  | <b>66</b>  | <b>1</b>              | <b>0</b> | <b>1</b> | <b>198</b> | <b>2</b>  | <b>0</b> | <b>0</b>   | <b>1</b> | <b>140</b> | <b>446</b>  |
| <b>Grand Total</b> | <b>1</b>            | <b>138</b> | <b>8</b> | <b>5</b> | <b>147</b> | <b>5</b>              | <b>6</b> | <b>95</b> | <b>574</b> | <b>106</b> | <b>4</b>            | <b>118</b> | <b>5</b> | <b>172</b> | <b>127</b> | <b>2</b>              | <b>3</b> | <b>3</b> | <b>666</b> | <b>8</b>  | <b>0</b> | <b>3</b>   | <b>3</b> | <b>388</b> | <b>1417</b> |
| Apprch %           | 0.7%                | 93.9%      | 5.4%     |          |            | 4.7%                  | 5.7%     | 89.6%     |            |            | 3.1%                | 92.9%      | 3.9%     |            |            | 25.0%                 | 37.5%    | 37.5%    |            |           |          |            |          |            |             |
| Total %            | 0.3%                | 35.6%      | 2.1%     |          | 37.9%      | 1.3%                  | 1.5%     | 24.5%     |            | 27.3%      | 1.0%                | 30.4%      | 1.3%     |            | 32.7%      | 0.5%                  | 0.8%     | 0.8%     |            | 2.1%      |          |            |          | 100.0%     |             |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 22nd Street Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 22nd Street Eastbound |      |        |      |           | Total |   |   |      |
|---|---------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|------|--------|------|-----------|-------|---|---|------|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT  | PEDS | APP.TOTAL |       |   |   |      |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |      |        |      |           |       |   |   |      |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |      |        |      |           |       |   |   |      |
| 8:00  | 0                   | 15    | 1     | 1    | 16        | 1                     | 1     | 0     | 42   | 2         | 0                   | 0     | 0     | 6    | 0         | 0                     | 0    | 1      | 53   | 1         | 0     | 0 | 1 | 19   |
| 8:15  | 1                   | 14    | 1     | 1    | 16        | 0                     | 0     | 3     | 50   | 3         | 0                   | 3     | 0     | 17   | 3         | 0                     | 0    | 1      | 48   | 1         | 0     | 0 | 1 | 23   |
| 8:30  | 0                   | 15    | 1     | 0    | 16        | 0                     | 1     | 2     | 32   | 3         | 0                   | 2     | 0     | 7    | 2         | 0                     | 0    | 0      | 46   | 0         | 0     | 0 | 0 | 21   |
| 8:45  | 0                   | 20    | 4     | 0    | 24        | 0                     | 0     | 2     | 37   | 2         | 1                   | 2     | 0     | 21   | 3         | 0                     | 0    | 0      | 43   | 0         | 0     | 0 | 0 | 29   |
| Total Volume                                      | 1                   | 64    | 7     | 2    | 72        | 1                     | 2     | 7     | 161  | 10        | 1                   | 7     | 0     | 51   | 8         | 0                     | 0    | 2      | 190  | 2         | 0     | 0 | 2 | 92   |
| % App Total                                       | 1.4%                | 88.9% | 9.7%  |      |           | 10.0%                 | 20.0% | 70.0% |      |           | 12.5%               | 87.5% | 0.0%  |      |           | 0.0%                  | 0.0% | 100.0% |      |           |       |   |   |      |
| PHF   | .250                | .800  | .438  |      | .750      | .250                  | .500  | .583  |      | .833      | .250                | .583  | .000  |      | .667      | .000                  | .000 | .500   |      | .500      |       |   |   | .793 |

| PM PEAK HOUR                                      | Broadway Southbound |        |       |      |           | 22nd Street Westbound |      |       |      |           | Broadway Northbound |       |       |      |           | 22nd Street Eastbound |      |       |      |           | Total |   |   |      |
|---|---------------------|--------|-------|------|-----------|-----------------------|------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|------|-------|------|-----------|-------|---|---|------|
|   | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU | RIGHT | PEDS | APP.TOTAL |       |   |   |      |
| Peak Hour Analysis From 17:00 to 18:00            |                     |        |       |      |           |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |       |   |   |      |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |        |       |      |           |                       |      |       |      |           |                     |       |       |      |           |                       |      |       |      |           |       |   |   |      |
| 17:00   | 0                   | 5      | 0     | 0    | 5         | 0                     | 0    | 11    | 46   | 11        | 1                   | 15    | 0     | 13   | 16        | 0                     | 0    | 0     | 69   | 0         | 0     | 0 | 0 | 32   |
| 17:15   | 0                   | 4      | 0     | 0    | 4         | 2                     | 0    | 17    | 41   | 19        | 0                   | 20    | 0     | 17   | 20        | 0                     | 0    | 1     | 41   | 1         | 0     | 0 | 1 | 44   |
| 17:30   | 0                   | 2      | 0     | 0    | 2         | 0                     | 1    | 14    | 59   | 15        | 0                   | 11    | 2     | 13   | 13        | 1                     | 0    | 0     | 39   | 1         | 0     | 0 | 0 | 31   |
| 17:45   | 0                   | 2      | 0     | 0    | 2         | 0                     | 0    | 14    | 48   | 14        | 0                   | 17    | 0     | 11   | 17        | 0                     | 0    | 0     | 49   | 0         | 0     | 0 | 0 | 33   |
| Total Volume                                      | 0                   | 13     | 0     | 0    | 13        | 2                     | 1    | 56    | 194  | 59        | 1                   | 63    | 2     | 54   | 66        | 1                     | 0    | 1     | 198  | 2         | 0     | 0 | 1 | 140  |
| % App Total                                       | 0.0%                | 100.0% | 0.0%  |      |           | 3.4%                  | 1.7% | 94.9% |      |           | 1.5%                | 95.5% | 3.0%  |      |           | 50.0%                 | 0.0% | 50.0% |      |           |       |   |   |      |
| PHF   | .000                | .650   | .000  |      | .650      | .250                  | .250 | .824  |      | .776      | .250                | .788  | .250  |      | .825      | .250                  | .000 | .250  |      | .500      |       |   |   | .795 |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-008 Telegraph Ave & 21st St

Date : 5/26/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Telegraph Ave Southbound |             |          |          |             | 21st St Westbound |          |          |          |           | Telegraph Ave Northbound |             |           |          |             | 21st St Eastbound |           |            |          |            | Total       | Utturns Total |
|--------------------|--------------------------|-------------|----------|----------|-------------|-------------------|----------|----------|----------|-----------|--------------------------|-------------|-----------|----------|-------------|-------------------|-----------|------------|----------|------------|-------------|---------------|
|                    | LEFT                     | THRU        | RIGHT    | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                     | THRU        | RIGHT     | UTURNS   | APP.TOTAL   | LEFT              | THRU      | RIGHT      | UTURNS   | APP.TOTAL  |             |               |
| 7:00               | 14                       | 37          | 0        | 0        | 51          | 0                 | 0        | 0        | 0        | 0         | 0                        | 42          | 6         | 1        | 49          | 4                 | 2         | 2          | 0        | 8          | 108         | 1             |
| 7:15               | 10                       | 61          | 0        | 0        | 71          | 0                 | 0        | 0        | 0        | 0         | 0                        | 40          | 1         | 0        | 41          | 4                 | 0         | 1          | 0        | 5          | 117         | 0             |
| 7:30               | 15                       | 64          | 0        | 0        | 79          | 0                 | 0        | 0        | 0        | 0         | 0                        | 55          | 1         | 0        | 56          | 5                 | 4         | 3          | 0        | 12         | 147         | 0             |
| 7:45               | 15                       | 96          | 0        | 0        | 111         | 0                 | 0        | 0        | 0        | 0         | 0                        | 76          | 2         | 0        | 78          | 4                 | 5         | 2          | 0        | 11         | 200         | 0             |
| <b>Total</b>       | <b>54</b>                | <b>258</b>  | <b>0</b> | <b>0</b> | <b>312</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>213</b>  | <b>10</b> | <b>1</b> | <b>224</b>  | <b>17</b>         | <b>11</b> | <b>8</b>   | <b>0</b> | <b>36</b>  | <b>572</b>  | <b>1</b>      |
| 8:00               | 22                       | 117         | 0        | 0        | 139         | 0                 | 0        | 0        | 0        | 0         | 0                        | 109         | 7         | 0        | 116         | 12                | 6         | 7          | 0        | 25         | 280         | 0             |
| 8:15               | 26                       | 105         | 0        | 0        | 131         | 0                 | 0        | 0        | 0        | 0         | 0                        | 78          | 5         | 0        | 83          | 15                | 3         | 8          | 0        | 26         | 240         | 0             |
| 8:30               | 27                       | 110         | 0        | 0        | 137         | 0                 | 0        | 0        | 0        | 0         | 0                        | 55          | 1         | 0        | 56          | 13                | 2         | 6          | 0        | 21         | 214         | 0             |
| 8:45               | 25                       | 112         | 0        | 0        | 137         | 0                 | 0        | 0        | 0        | 0         | 0                        | 60          | 7         | 2        | 69          | 12                | 5         | 22         | 0        | 39         | 245         | 2             |
| <b>Total</b>       | <b>100</b>               | <b>444</b>  | <b>0</b> | <b>0</b> | <b>544</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>302</b>  | <b>20</b> | <b>2</b> | <b>324</b>  | <b>52</b>         | <b>16</b> | <b>43</b>  | <b>0</b> | <b>111</b> | <b>979</b>  | <b>2</b>      |
| 16:00              | 7                        | 105         | 0        | 0        | 112         | 0                 | 0        | 0        | 0        | 0         | 0                        | 80          | 6         | 0        | 86          | 15                | 4         | 11         | 0        | 30         | 228         | 0             |
| 16:15              | 2                        | 106         | 0        | 1        | 109         | 0                 | 0        | 0        | 0        | 0         | 0                        | 115         | 1         | 1        | 117         | 11                | 2         | 9          | 0        | 22         | 248         | 2             |
| 16:30              | 6                        | 102         | 0        | 1        | 109         | 0                 | 0        | 0        | 0        | 0         | 0                        | 115         | 4         | 0        | 119         | 15                | 5         | 15         | 0        | 35         | 263         | 1             |
| 16:45              | 8                        | 99          | 0        | 0        | 107         | 0                 | 0        | 0        | 0        | 0         | 0                        | 93          | 0         | 0        | 93          | 9                 | 2         | 12         | 0        | 23         | 223         | 0             |
| <b>Total</b>       | <b>23</b>                | <b>412</b>  | <b>0</b> | <b>2</b> | <b>437</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>403</b>  | <b>11</b> | <b>1</b> | <b>415</b>  | <b>50</b>         | <b>13</b> | <b>47</b>  | <b>0</b> | <b>110</b> | <b>962</b>  | <b>3</b>      |
| 17:00              | 10                       | 101         | 0        | 0        | 111         | 0                 | 0        | 0        | 0        | 0         | 0                        | 117         | 2         | 0        | 119         | 13                | 2         | 11         | 0        | 26         | 256         | 0             |
| 17:15              | 12                       | 110         | 0        | 0        | 122         | 0                 | 0        | 0        | 0        | 0         | 0                        | 116         | 7         | 1        | 124         | 14                | 3         | 11         | 0        | 28         | 274         | 1             |
| 17:30              | 11                       | 102         | 0        | 1        | 114         | 0                 | 0        | 0        | 0        | 0         | 0                        | 105         | 7         | 0        | 112         | 14                | 4         | 9          | 0        | 27         | 253         | 1             |
| 17:45              | 9                        | 112         | 0        | 3        | 124         | 0                 | 0        | 0        | 0        | 0         | 0                        | 96          | 5         | 0        | 101         | 7                 | 5         | 5          | 0        | 17         | 242         | 3             |
| <b>Total</b>       | <b>42</b>                | <b>425</b>  | <b>0</b> | <b>4</b> | <b>471</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>434</b>  | <b>21</b> | <b>1</b> | <b>456</b>  | <b>48</b>         | <b>14</b> | <b>36</b>  | <b>0</b> | <b>98</b>  | <b>1025</b> | <b>5</b>      |
| <b>Grand Total</b> | <b>219</b>               | <b>1539</b> | <b>0</b> | <b>6</b> | <b>1764</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>1352</b> | <b>62</b> | <b>5</b> | <b>1419</b> | <b>167</b>        | <b>54</b> | <b>134</b> | <b>0</b> | <b>355</b> | <b>3538</b> | <b>11</b>     |
| Apprch %           | 12.4%                    | 87.2%       | 0.0%     | 0.3%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%                     | 95.3%       | 4.4%      | 0.4%     |             | 47.0%             | 15.2%     | 37.7%      | 0.0%     |            |             |               |
| Total %            | 6.2%                     | 43.5%       | 0.0%     | 0.2%     | 49.9%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 0.0%                     | 38.2%       | 1.8%      | 0.1%     | 40.1%       | 4.7%              | 1.5%      | 3.8%       | 0.0%     | 10.0%      | 100.0%      |               |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 21st St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 21st St Eastbound |       |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |
| 8:00  | 22                       | 117   | 0     | 0      | 139       | 0                 | 0    | 0     | 0      | 0         | 0                        | 109   | 7     | 0      | 116       | 12                | 6     | 7     | 0      | 25        | 280   |
| 8:15  | 26                       | 105   | 0     | 0      | 131       | 0                 | 0    | 0     | 0      | 0         | 0                        | 78    | 5     | 0      | 83        | 15                | 3     | 8     | 0      | 26        | 240   |
| 8:30  | 27                       | 110   | 0     | 0      | 137       | 0                 | 0    | 0     | 0      | 0         | 0                        | 55    | 1     | 0      | 56        | 13                | 2     | 6     | 0      | 21        | 214   |
| 8:45  | 25                       | 112   | 0     | 0      | 137       | 0                 | 0    | 0     | 0      | 0         | 0                        | 60    | 7     | 2      | 69        | 12                | 5     | 22    | 0      | 39        | 245   |
| Total Volume                                      | 100                      | 444   | 0     | 0      | 544       | 0                 | 0    | 0     | 0      | 0         | 0                        | 302   | 20    | 2      | 324       | 52                | 16    | 43    | 0      | 111       | 979   |
| % App Total                                       | 18.4%                    | 81.6% | 0.0%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      | 0.0%                     | 93.2% | 6.2%  | 0.6%   |           | 46.8%             | 14.4% | 38.7% | 0.0%   |           |       |
| PHF   | .926                     | .949  | .000  | .000   | .978      | .000              | .000 | .000  | .000   | .000      | .000                     | .693  | .714  | .250   | .698      | .867              | .667  | .489  | .000   | .712      | .874  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | 21st St Westbound |      |       |        |           | Telegraph Ave Northbound |       |       |        |           | 21st St Eastbound |       |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |        |           |                   |      |       |        |           |                          |       |       |        |           |                   |       |       |        |           |       |
| 17:00   | 10                       | 101   | 0     | 0      | 111       | 0                 | 0    | 0     | 0      | 0         | 0                        | 117   | 2     | 0      | 119       | 13                | 2     | 11    | 0      | 26        | 256   |
| 17:15   | 12                       | 110   | 0     | 0      | 122       | 0                 | 0    | 0     | 0      | 0         | 0                        | 116   | 7     | 1      | 124       | 14                | 3     | 11    | 0      | 28        | 274   |
| 17:30   | 11                       | 102   | 0     | 1      | 114       | 0                 | 0    | 0     | 0      | 0         | 0                        | 105   | 7     | 0      | 112       | 14                | 4     | 9     | 0      | 27        | 253   |
| 17:45   | 9                        | 112   | 0     | 3      | 124       | 0                 | 0    | 0     | 0      | 0         | 0                        | 96    | 5     | 0      | 101       | 7                 | 5     | 5     | 0      | 17        | 242   |
| Total Volume                                      | 42                       | 425   | 0     | 4      | 471       | 0                 | 0    | 0     | 0      | 0         | 0                        | 434   | 21    | 1      | 456       | 48                | 14    | 36    | 0      | 98        | 1025  |
| % App Total                                       | 8.9%                     | 90.2% | 0.0%  | 0.8%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      | 0.0%                     | 95.2% | 4.6%  | 0.2%   |           | 49.0%             | 14.3% | 36.7% | 0.0%   |           |       |
| PHF   | .875                     | .949  | .000  | .333   | .950      | .000              | .000 | .000  | .000   | .000      | .000                     | .927  | .750  | .250   | .919      | .857              | .700  | .818  | .000   | .875      | .935  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-008 Telegraph Ave & 21st St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |          |           |            | 21st St Westbound |          |          |            |           | Telegraph Ave Northbound |            |          |            |            | 21st St Eastbound |          |          |            |           | Total      | Peds Total  |
|--------------------|--------------------------|------------|----------|-----------|------------|-------------------|----------|----------|------------|-----------|--------------------------|------------|----------|------------|------------|-------------------|----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS      | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                        | 7          | 0        | 5         | 7          | 0                 | 0        | 0        | 20         | 0         | 0                        | 4          | 0        | 9          | 4          | 0                 | 0        | 0        | 13         | 0         | 11         | 47          |
| 7:15               | 0                        | 11         | 0        | 4         | 11         | 0                 | 0        | 1        | 18         | 1         | 0                        | 0          | 0        | 9          | 0          | 0                 | 0        | 0        | 10         | 0         | 12         | 41          |
| 7:30               | 0                        | 10         | 0        | 3         | 10         | 0                 | 0        | 0        | 18         | 0         | 0                        | 2          | 0        | 4          | 2          | 1                 | 1        | 0        | 19         | 2         | 14         | 44          |
| 7:45               | 0                        | 15         | 0        | 7         | 15         | 0                 | 0        | 0        | 23         | 0         | 0                        | 3          | 0        | 9          | 3          | 0                 | 1        | 0        | 22         | 1         | 19         | 61          |
| <b>Total</b>       | <b>0</b>                 | <b>43</b>  | <b>0</b> | <b>19</b> | <b>43</b>  | <b>0</b>          | <b>0</b> | <b>1</b> | <b>79</b>  | <b>1</b>  | <b>0</b>                 | <b>9</b>   | <b>0</b> | <b>31</b>  | <b>9</b>   | <b>1</b>          | <b>2</b> | <b>0</b> | <b>64</b>  | <b>3</b>  | <b>56</b>  | <b>193</b>  |
| 8:00               | 0                        | 18         | 0        | 3         | 18         | 0                 | 0        | 0        | 22         | 0         | 0                        | 3          | 0        | 10         | 3          | 0                 | 0        | 0        | 25         | 0         | 21         | 60          |
| 8:15               | 2                        | 23         | 0        | 4         | 25         | 0                 | 0        | 0        | 23         | 0         | 0                        | 4          | 0        | 6          | 4          | 0                 | 1        | 0        | 17         | 1         | 30         | 50          |
| 8:30               | 0                        | 13         | 0        | 8         | 13         | 0                 | 0        | 0        | 29         | 0         | 0                        | 0          | 0        | 8          | 0          | 0                 | 0        | 0        | 18         | 0         | 13         | 63          |
| 8:45               | 1                        | 20         | 0        | 7         | 21         | 0                 | 0        | 0        | 23         | 0         | 0                        | 1          | 1        | 6          | 2          | 1                 | 1        | 1        | 21         | 3         | 26         | 57          |
| <b>Total</b>       | <b>3</b>                 | <b>74</b>  | <b>0</b> | <b>22</b> | <b>77</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>97</b>  | <b>0</b>  | <b>0</b>                 | <b>8</b>   | <b>1</b> | <b>30</b>  | <b>9</b>   | <b>1</b>          | <b>2</b> | <b>1</b> | <b>81</b>  | <b>4</b>  | <b>90</b>  | <b>230</b>  |
| 16:00              | 0                        | 5          | 0        | 2         | 5          | 0                 | 0        | 0        | 22         | 0         | 0                        | 10         | 1        | 4          | 11         | 0                 | 1        | 0        | 22         | 1         | 17         | 50          |
| 16:15              | 0                        | 5          | 1        | 6         | 6          | 0                 | 0        | 3        | 22         | 3         | 0                        | 12         | 0        | 4          | 12         | 0                 | 0        | 0        | 25         | 0         | 21         | 57          |
| 16:30              | 0                        | 8          | 0        | 4         | 8          | 0                 | 2        | 0        | 32         | 2         | 1                        | 8          | 0        | 8          | 9          | 0                 | 0        | 0        | 24         | 0         | 19         | 68          |
| 16:45              | 0                        | 14         | 1        | 6         | 15         | 0                 | 0        | 1        | 42         | 1         | 1                        | 13         | 1        | 9          | 15         | 1                 | 0        | 1        | 31         | 2         | 33         | 88          |
| <b>Total</b>       | <b>0</b>                 | <b>32</b>  | <b>2</b> | <b>18</b> | <b>34</b>  | <b>0</b>          | <b>2</b> | <b>4</b> | <b>118</b> | <b>6</b>  | <b>2</b>                 | <b>43</b>  | <b>2</b> | <b>25</b>  | <b>47</b>  | <b>1</b>          | <b>1</b> | <b>1</b> | <b>102</b> | <b>3</b>  | <b>90</b>  | <b>263</b>  |
| 17:00              | 2                        | 10         | 0        | 7         | 12         | 0                 | 0        | 1        | 47         | 1         | 1                        | 21         | 1        | 6          | 23         | 1                 | 0        | 0        | 22         | 1         | 37         | 82          |
| 17:15              | 1                        | 15         | 0        | 9         | 16         | 0                 | 0        | 1        | 43         | 1         | 1                        | 25         | 0        | 5          | 26         | 1                 | 0        | 0        | 23         | 1         | 44         | 80          |
| 17:30              | 0                        | 10         | 0        | 4         | 10         | 0                 | 0        | 1        | 38         | 1         | 0                        | 16         | 0        | 10         | 16         | 0                 | 0        | 0        | 32         | 0         | 27         | 84          |
| 17:45              | 0                        | 7          | 0        | 3         | 7          | 0                 | 0        | 1        | 54         | 1         | 0                        | 15         | 1        | 12         | 16         | 0                 | 0        | 0        | 24         | 0         | 24         | 93          |
| <b>Total</b>       | <b>3</b>                 | <b>42</b>  | <b>0</b> | <b>23</b> | <b>45</b>  | <b>0</b>          | <b>0</b> | <b>4</b> | <b>182</b> | <b>4</b>  | <b>2</b>                 | <b>77</b>  | <b>2</b> | <b>33</b>  | <b>81</b>  | <b>2</b>          | <b>0</b> | <b>0</b> | <b>101</b> | <b>2</b>  | <b>132</b> | <b>339</b>  |
| <b>Grand Total</b> | <b>6</b>                 | <b>191</b> | <b>2</b> | <b>82</b> | <b>199</b> | <b>0</b>          | <b>2</b> | <b>9</b> | <b>476</b> | <b>11</b> | <b>4</b>                 | <b>137</b> | <b>5</b> | <b>119</b> | <b>146</b> | <b>5</b>          | <b>5</b> | <b>2</b> | <b>348</b> | <b>12</b> | <b>368</b> | <b>1025</b> |
| Apprch %           | 3.0%                     | 96.0%      | 1.0%     |           |            | 0.0%              | 18.2%    | 81.8%    |            |           | 2.7%                     | 93.8%      | 3.4%     |            |            | 41.7%             | 41.7%    | 16.7%    |            |           |            |             |
| Total %            | 1.6%                     | 51.9%      | 0.5%     |           | 54.1%      | 0.0%              | 0.5%     | 2.4%     |            | 3.0%      | 1.1%                     | 37.2%      | 1.4%     |            | 39.7%      | 1.4%              | 1.4%     | 0.5%     |            | 3.3%      | 100.0%     |             |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |           |          |           |           | 21st St Westbound |          |          |           |           | Telegraph Ave Northbound |          |          |           |           | 21st St Eastbound |          |          |           |           | Total     |
|---|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|-----------|-----------|--------------------------|----------|----------|-----------|-----------|-------------------|----------|----------|-----------|-----------|-----------|
|   | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT                     | THRU     | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL |           |
| Peak Hour Analysis From 08:00 to 09:00            |                          |           |          |           |           |                   |          |          |           |           |                          |          |          |           |           |                   |          |          |           |           |           |
| Peak Hour For Entire Intersection Begins at 08:00 |                          |           |          |           |           |                   |          |          |           |           |                          |          |          |           |           |                   |          |          |           |           |           |
| 8:00  | 0                        | 18        | 0        | 3         | 18        | 0                 | 0        | 0        | 22        | 0         | 0                        | 3        | 0        | 10        | 3         | 0                 | 0        | 0        | 25        | 0         | 21        |
| 8:15  | 2                        | 23        | 0        | 4         | 25        | 0                 | 0        | 0        | 23        | 0         | 0                        | 4        | 0        | 6         | 4         | 0                 | 1        | 0        | 17        | 1         | 30        |
| 8:30  | 0                        | 13        | 0        | 8         | 13        | 0                 | 0        | 0        | 29        | 0         | 0                        | 0        | 0        | 8         | 0         | 0                 | 0        | 0        | 18        | 0         | 13        |
| 8:45  | 1                        | 20        | 0        | 7         | 21        | 0                 | 0        | 0        | 23        | 0         | 0                        | 1        | 1        | 6         | 2         | 1                 | 1        | 1        | 21        | 3         | 26        |
| <b>Total Volume</b>                               | <b>3</b>                 | <b>74</b> | <b>0</b> | <b>22</b> | <b>77</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>97</b> | <b>0</b>  | <b>0</b>                 | <b>8</b> | <b>1</b> | <b>30</b> | <b>9</b>  | <b>1</b>          | <b>2</b> | <b>1</b> | <b>81</b> | <b>4</b>  | <b>90</b> |
| % App Total                                       | 3.9%                     | 96.1%     | 0.0%     |           |           | 0.0%              | 0.0%     | 0.0%     |           |           | 0.0%                     | 88.9%    | 11.1%    |           |           | 25.0%             | 50.0%    | 25.0%    |           |           |           |
| PHF   | .375                     | .804      | .000     |           | .770      | .000              | .000     | .000     |           | .000      | .000                     | .500     | .250     |           | .563      | .250              | .500     | .250     |           | .333      | .750      |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |           |          |           |           | 21st St Westbound |          |          |            |           | Telegraph Ave Northbound |           |          |           |           | 21st St Eastbound |          |          |            |           | Total      |
|---|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|------------|-----------|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|------------|-----------|------------|
|   | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |
| Peak Hour Analysis From 17:00 to 18:00            |                          |           |          |           |           |                   |          |          |            |           |                          |           |          |           |           |                   |          |          |            |           |            |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |           |          |           |           |                   |          |          |            |           |                          |           |          |           |           |                   |          |          |            |           |            |
| 17:00   | 2                        | 10        | 0        | 7         | 12        | 0                 | 0        | 1        | 47         | 1         | 1                        | 21        | 1        | 6         | 23        | 1                 | 0        | 0        | 22         | 1         | 37         |
| 17:15   | 1                        | 15        | 0        | 9         | 16        | 0                 | 0        | 1        | 43         | 1         | 1                        | 25        | 0        | 5         | 26        | 1                 | 0        | 0        | 23         | 1         | 44         |
| 17:30   | 0                        | 10        | 0        | 4         | 10        | 0                 | 0        | 1        | 38         | 1         | 0                        | 16        | 0        | 10        | 16        | 0                 | 0        | 0        | 32         | 0         | 27         |
| 17:45   | 0                        | 7         | 0        | 3         | 7         | 0                 | 0        | 1        | 54         | 1         | 0                        | 15        | 1        | 12        | 16        | 0                 | 0        | 0        | 24         | 0         | 24         |
| <b>Total Volume</b>                               | <b>3</b>                 | <b>42</b> | <b>0</b> | <b>23</b> | <b>45</b> | <b>0</b>          | <b>0</b> | <b>4</b> | <b>182</b> | <b>4</b>  | <b>2</b>                 | <b>77</b> | <b>2</b> | <b>33</b> | <b>81</b> | <b>2</b>          | <b>0</b> | <b>0</b> | <b>101</b> | <b>2</b>  | <b>132</b> |
| % App Total                                       | 6.7%                     | 93.3%     | 0.0%     |           |           | 0.0%              | 0.0%     | 100.0%   |            |           | 2.5%                     | 95.1%     | 2.5%     |           |           | 100.0%            | 0.0%     | 0.0%     |            |           |            |
| PHF   | .375                     | .700      | .000     |           | .703      | .000              | .000     | 1.000    |            | 1.000     | .500                     | .770      | .500     |           | .779      | .500              | .000     | .000     |            | .500      | .750       |



# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-013 Broadway & 21st Street

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

## Unshifted Count = All Vehicles & Turns

| START TIME         | Broadway Southbound |             |          |           |             | 21st Street Westbound |          |            |          |            | Broadway Northbound |             |            |          |             | 21st Street Eastbound |            |           |          |            | Total       | Uturns Total |
|--------------------|---------------------|-------------|----------|-----------|-------------|-----------------------|----------|------------|----------|------------|---------------------|-------------|------------|----------|-------------|-----------------------|------------|-----------|----------|------------|-------------|--------------|
|                    | LEFT                | THRU        | RIGHT    | UTURNS    | APP.TOTAL   | LEFT                  | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                  | THRU       | RIGHT     | UTURNS   | APP.TOTAL  |             |              |
| 7:00               | 4                   | 45          | 0        | 0         | 49          | 3                     | 0        | 5          | 0        | 8          | 0                   | 31          | 5          | 0        | 36          | 1                     | 7          | 3         | 0        | 11         | 104         | 0            |
| 7:15               | 5                   | 56          | 0        | 2         | 63          | 1                     | 0        | 11         | 0        | 12         | 0                   | 53          | 4          | 0        | 57          | 2                     | 15         | 3         | 0        | 20         | 152         | 2            |
| 7:30               | 5                   | 58          | 0        | 0         | 63          | 4                     | 0        | 9          | 0        | 13         | 0                   | 59          | 4          | 0        | 63          | 3                     | 17         | 1         | 0        | 21         | 160         | 0            |
| 7:45               | 8                   | 87          | 0        | 0         | 95          | 6                     | 0        | 7          | 0        | 13         | 0                   | 81          | 7          | 0        | 88          | 2                     | 23         | 3         | 0        | 28         | 224         | 0            |
| <b>Total</b>       | <b>22</b>           | <b>246</b>  | <b>0</b> | <b>2</b>  | <b>270</b>  | <b>14</b>             | <b>0</b> | <b>32</b>  | <b>0</b> | <b>46</b>  | <b>0</b>            | <b>224</b>  | <b>20</b>  | <b>0</b> | <b>244</b>  | <b>8</b>              | <b>62</b>  | <b>10</b> | <b>0</b> | <b>80</b>  | <b>640</b>  | <b>2</b>     |
| 8:00               | 8                   | 98          | 0        | 0         | 106         | 8                     | 0        | 12         | 0        | 20         | 0                   | 93          | 6          | 0        | 99          | 0                     | 16         | 2         | 0        | 18         | 243         | 0            |
| 8:15               | 10                  | 122         | 0        | 0         | 132         | 3                     | 0        | 10         | 0        | 13         | 0                   | 77          | 5          | 0        | 82          | 0                     | 19         | 2         | 0        | 21         | 248         | 0            |
| 8:30               | 14                  | 106         | 0        | 1         | 121         | 6                     | 0        | 8          | 0        | 14         | 0                   | 96          | 11         | 0        | 107         | 0                     | 25         | 6         | 0        | 31         | 273         | 1            |
| 8:45               | 7                   | 127         | 0        | 0         | 134         | 6                     | 0        | 14         | 0        | 20         | 0                   | 82          | 10         | 0        | 92          | 0                     | 16         | 3         | 0        | 19         | 265         | 0            |
| <b>Total</b>       | <b>39</b>           | <b>453</b>  | <b>0</b> | <b>1</b>  | <b>493</b>  | <b>23</b>             | <b>0</b> | <b>44</b>  | <b>0</b> | <b>67</b>  | <b>0</b>            | <b>348</b>  | <b>32</b>  | <b>0</b> | <b>380</b>  | <b>0</b>              | <b>76</b>  | <b>13</b> | <b>0</b> | <b>89</b>  | <b>1029</b> | <b>1</b>     |
| 16:00              | 10                  | 109         | 0        | 2         | 121         | 8                     | 0        | 14         | 0        | 22         | 0                   | 115         | 2          | 0        | 117         | 11                    | 8          | 5         | 0        | 24         | 284         | 2            |
| 16:15              | 6                   | 94          | 0        | 1         | 101         | 10                    | 0        | 20         | 0        | 30         | 0                   | 116         | 5          | 0        | 121         | 4                     | 11         | 9         | 0        | 24         | 276         | 1            |
| 16:30              | 4                   | 119         | 0        | 0         | 123         | 6                     | 0        | 19         | 0        | 25         | 0                   | 123         | 5          | 0        | 128         | 5                     | 7          | 6         | 0        | 18         | 294         | 0            |
| 16:45              | 4                   | 108         | 0        | 1         | 113         | 7                     | 0        | 31         | 0        | 38         | 0                   | 131         | 8          | 1        | 140         | 4                     | 6          | 5         | 0        | 15         | 306         | 2            |
| <b>Total</b>       | <b>24</b>           | <b>430</b>  | <b>0</b> | <b>4</b>  | <b>458</b>  | <b>31</b>             | <b>0</b> | <b>84</b>  | <b>0</b> | <b>115</b> | <b>0</b>            | <b>485</b>  | <b>20</b>  | <b>1</b> | <b>506</b>  | <b>24</b>             | <b>32</b>  | <b>25</b> | <b>0</b> | <b>81</b>  | <b>1160</b> | <b>5</b>     |
| 17:00              | 8                   | 107         | 0        | 3         | 118         | 7                     | 0        | 29         | 0        | 36         | 0                   | 118         | 11         | 1        | 130         | 5                     | 17         | 14        | 0        | 36         | 320         | 4            |
| 17:15              | 7                   | 112         | 0        | 0         | 119         | 9                     | 0        | 27         | 0        | 36         | 0                   | 131         | 4          | 0        | 135         | 11                    | 9          | 9         | 0        | 29         | 319         | 0            |
| 17:30              | 9                   | 96          | 0        | 2         | 107         | 4                     | 0        | 19         | 0        | 23         | 0                   | 130         | 8          | 1        | 139         | 2                     | 17         | 12        | 0        | 31         | 300         | 3            |
| 17:45              | 12                  | 143         | 0        | 1         | 156         | 10                    | 0        | 19         | 0        | 29         | 0                   | 128         | 5          | 0        | 133         | 9                     | 15         | 3         | 0        | 27         | 345         | 1            |
| <b>Total</b>       | <b>36</b>           | <b>458</b>  | <b>0</b> | <b>6</b>  | <b>500</b>  | <b>30</b>             | <b>0</b> | <b>94</b>  | <b>0</b> | <b>124</b> | <b>0</b>            | <b>507</b>  | <b>28</b>  | <b>2</b> | <b>537</b>  | <b>27</b>             | <b>58</b>  | <b>38</b> | <b>0</b> | <b>123</b> | <b>1284</b> | <b>8</b>     |
| <b>Grand Total</b> | <b>121</b>          | <b>1587</b> | <b>0</b> | <b>13</b> | <b>1721</b> | <b>98</b>             | <b>0</b> | <b>254</b> | <b>0</b> | <b>352</b> | <b>0</b>            | <b>1564</b> | <b>100</b> | <b>3</b> | <b>1667</b> | <b>59</b>             | <b>228</b> | <b>86</b> | <b>0</b> | <b>373</b> | <b>4113</b> | <b>16</b>    |
| Apprch %           | 7.0%                | 92.2%       | 0.0%     | 0.8%      |             | 27.8%                 | 0.0%     | 72.2%      | 0.0%     |            | 0.0%                | 93.8%       | 6.0%       | 0.2%     |             | 15.8%                 | 61.1%      | 23.1%     | 0.0%     |            |             |              |
| Total %            | 2.9%                | 38.6%       | 0.0%     | 0.3%      | 41.8%       | 2.4%                  | 0.0%     | 6.2%       | 0.0%     | 8.6%       | 0.0%                | 38.0%       | 2.4%       | 0.1%     | 40.5%       | 1.4%                  | 5.5%       | 2.1%      | 0.0%     | 9.1%       | 100.0%      |              |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 21st Street Westbound |      |       |        |           | Broadway Northbound |       |       |        |           | 21st Street Eastbound |       |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |       |
| 8:00  | 8                   | 98    | 0     | 0      | 106       | 8                     | 0    | 12    | 0      | 20        | 0                   | 93    | 6     | 0      | 99        | 0                     | 16    | 2     | 0      | 18        | 243   |
| 8:15  | 10                  | 122   | 0     | 0      | 132       | 3                     | 0    | 10    | 0      | 13        | 0                   | 77    | 5     | 0      | 82        | 0                     | 19    | 2     | 0      | 21        | 248   |
| 8:30  | 14                  | 106   | 0     | 1      | 121       | 6                     | 0    | 8     | 0      | 14        | 0                   | 96    | 11    | 0      | 107       | 0                     | 25    | 6     | 0      | 31        | 273   |
| 8:45  | 7                   | 127   | 0     | 0      | 134       | 6                     | 0    | 14    | 0      | 20        | 0                   | 82    | 10    | 0      | 92        | 0                     | 16    | 3     | 0      | 19        | 265   |
| Total Volume                                      | 39                  | 453   | 0     | 1      | 493       | 23                    | 0    | 44    | 0      | 67        | 0                   | 348   | 32    | 0      | 380       | 0                     | 76    | 13    | 0      | 89        | 1029  |
| % App Total                                       | 7.9%                | 91.9% | 0.0%  | 0.2%   |           | 34.3%                 | 0.0% | 65.7% | 0.0%   |           | 0.0%                | 91.6% | 8.4%  | 0.0%   |           | 0.0%                  | 85.4% | 14.6% | 0.0%   |           |       |
| PHF   | .696                | .892  | .000  | .250   | .920      | .719                  | .000 | .786  | .000   | .838      | .000                | .906  | .727  | .000   | .888      | .000                  | .760  | .542  | .000   | .718      | .942  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 21st Street Westbound |      |       |        |           | Broadway Northbound |       |       |        |           | 21st Street Eastbound |       |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-----------------------|------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-----------------------|-------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                  | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                       |      |       |        |           |                     |       |       |        |           |                       |       |       |        |           |       |
| 17:00   | 8                   | 107   | 0     | 3      | 118       | 7                     | 0    | 29    | 0      | 36        | 0                   | 118   | 11    | 1      | 130       | 5                     | 17    | 14    | 0      | 36        | 320   |
| 17:15   | 7                   | 112   | 0     | 0      | 119       | 9                     | 0    | 27    | 0      | 36        | 0                   | 131   | 4     | 0      | 135       | 11                    | 9     | 9     | 0      | 29        | 319   |
| 17:30   | 9                   | 96    | 0     | 2      | 107       | 4                     | 0    | 19    | 0      | 23        | 0                   | 130   | 8     | 1      | 139       | 2                     | 17    | 12    | 0      | 31        | 300   |
| 17:45   | 12                  | 143   | 0     | 1      | 156       | 10                    | 0    | 19    | 0      | 29        | 0                   | 128   | 5     | 0      | 133       | 9                     | 15    | 3     | 0      | 27        | 345   |
| Total Volume                                      | 36                  | 458   | 0     | 6      | 500       | 30                    | 0    | 94    | 0      | 124       | 0                   | 507   | 28    | 2      | 537       | 27                    | 58    | 38    | 0      | 123       | 1284  |
| % App Total                                       | 7.2%                | 91.6% | 0.0%  | 1.2%   |           | 24.2%                 | 0.0% | 75.8% | 0.0%   |           | 0.0%                | 94.4% | 5.2%  | 0.4%   |           | 22.0%                 | 47.2% | 30.9% | 0.0%   |           |       |
| PHF   | .750                | .801  | .000  | .500   | .801      | .750                  | .000 | .810  | .000   | .861      | .000                | .968  | .636  | .500   | .966      | .614                  | .853  | .679  | .000   | .854      | .930  |

# ALL TRAFFIC DATA

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7038-013 Broadway & 21st Street

Date : 1/21/2016

City of Oakland  
All Vehicles & Turns On Unshifted  
Bikes & Peds On Bank 1  
Nothing On Bank 2

### Bank 1 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |          |            |            | 21st Street Westbound |          |          |            |           | Broadway Northbound |            |           |            |            | 21st Street Eastbound |           |          |            |           | Total      | Peds Total  |
|--------------------|---------------------|------------|----------|------------|------------|-----------------------|----------|----------|------------|-----------|---------------------|------------|-----------|------------|------------|-----------------------|-----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                  | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                  | THRU      | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                   | 3          | 0        | 12         | 3          | 0                     | 0        | 0        | 25         | 0         | 0                   | 2          | 0         | 8          | 2          | 0                     | 1         | 0        | 13         | 1         | 6          | 58          |
| 7:15               | 0                   | 9          | 0        | 13         | 9          | 0                     | 0        | 0        | 27         | 0         | 0                   | 1          | 1         | 10         | 2          | 0                     | 0         | 0        | 33         | 0         | 11         | 83          |
| 7:30               | 0                   | 10         | 0        | 15         | 10         | 0                     | 0        | 1        | 27         | 1         | 0                   | 4          | 1         | 12         | 5          | 0                     | 1         | 0        | 33         | 1         | 17         | 87          |
| 7:45               | 0                   | 14         | 0        | 13         | 14         | 0                     | 2        | 0        | 49         | 2         | 0                   | 1          | 0         | 11         | 1          | 0                     | 1         | 0        | 43         | 1         | 18         | 116         |
| <b>Total</b>       | <b>0</b>            | <b>36</b>  | <b>0</b> | <b>53</b>  | <b>36</b>  | <b>0</b>              | <b>2</b> | <b>1</b> | <b>128</b> | <b>3</b>  | <b>0</b>            | <b>8</b>   | <b>2</b>  | <b>41</b>  | <b>10</b>  | <b>0</b>              | <b>3</b>  | <b>0</b> | <b>122</b> | <b>3</b>  | <b>52</b>  | <b>344</b>  |
| 8:00               | 0                   | 20         | 0        | 22         | 20         | 0                     | 0        | 0        | 55         | 0         | 0                   | 0          | 2         | 12         | 2          | 0                     | 0         | 0        | 54         | 0         | 22         | 143         |
| 8:15               | 0                   | 13         | 0        | 26         | 13         | 0                     | 1        | 0        | 84         | 1         | 0                   | 3          | 1         | 14         | 4          | 0                     | 3         | 0        | 63         | 3         | 21         | 187         |
| 8:30               | 0                   | 16         | 0        | 18         | 16         | 0                     | 0        | 0        | 53         | 0         | 0                   | 2          | 0         | 15         | 2          | 0                     | 0         | 0        | 68         | 0         | 18         | 154         |
| 8:45               | 0                   | 20         | 0        | 32         | 20         | 2                     | 0        | 0        | 60         | 2         | 0                   | 3          | 2         | 14         | 5          | 0                     | 1         | 0        | 59         | 1         | 28         | 165         |
| <b>Total</b>       | <b>0</b>            | <b>69</b>  | <b>0</b> | <b>98</b>  | <b>69</b>  | <b>2</b>              | <b>1</b> | <b>0</b> | <b>252</b> | <b>3</b>  | <b>0</b>            | <b>8</b>   | <b>5</b>  | <b>55</b>  | <b>13</b>  | <b>0</b>              | <b>4</b>  | <b>0</b> | <b>244</b> | <b>4</b>  | <b>89</b>  | <b>649</b>  |
| 16:00              | 0                   | 1          | 0        | 21         | 1          | 0                     | 0        | 0        | 36         | 0         | 0                   | 13         | 1         | 19         | 14         | 0                     | 0         | 1        | 53         | 1         | 16         | 129         |
| 16:15              | 0                   | 10         | 0        | 24         | 10         | 1                     | 0        | 0        | 40         | 1         | 0                   | 4          | 0         | 13         | 4          | 0                     | 0         | 0        | 53         | 0         | 15         | 130         |
| 16:30              | 1                   | 2          | 0        | 22         | 3          | 0                     | 0        | 0        | 49         | 0         | 0                   | 10         | 2         | 21         | 12         | 0                     | 0         | 0        | 61         | 0         | 15         | 153         |
| 16:45              | 1                   | 8          | 0        | 16         | 9          | 0                     | 1        | 0        | 41         | 1         | 0                   | 20         | 0         | 13         | 20         | 0                     | 1         | 0        | 52         | 1         | 31         | 122         |
| <b>Total</b>       | <b>2</b>            | <b>21</b>  | <b>0</b> | <b>83</b>  | <b>23</b>  | <b>1</b>              | <b>1</b> | <b>0</b> | <b>166</b> | <b>2</b>  | <b>0</b>            | <b>47</b>  | <b>3</b>  | <b>66</b>  | <b>50</b>  | <b>0</b>              | <b>1</b>  | <b>1</b> | <b>219</b> | <b>2</b>  | <b>77</b>  | <b>534</b>  |
| 17:00              | 0                   | 5          | 0        | 40         | 5          | 0                     | 0        | 0        | 62         | 0         | 0                   | 15         | 2         | 19         | 17         | 0                     | 0         | 0        | 120        | 0         | 22         | 241         |
| 17:15              | 1                   | 7          | 0        | 33         | 8          | 1                     | 0        | 1        | 55         | 2         | 0                   | 18         | 1         | 17         | 19         | 0                     | 1         | 0        | 59         | 1         | 30         | 164         |
| 17:30              | 0                   | 0          | 0        | 23         | 0          | 2                     | 0        | 0        | 74         | 2         | 0                   | 9          | 0         | 17         | 9          | 1                     | 1         | 0        | 88         | 2         | 13         | 202         |
| 17:45              | 0                   | 4          | 0        | 24         | 4          | 1                     | 1        | 0        | 79         | 2         | 0                   | 21         | 1         | 18         | 22         | 0                     | 0         | 0        | 80         | 0         | 28         | 201         |
| <b>Total</b>       | <b>1</b>            | <b>16</b>  | <b>0</b> | <b>120</b> | <b>17</b>  | <b>4</b>              | <b>1</b> | <b>1</b> | <b>270</b> | <b>6</b>  | <b>0</b>            | <b>63</b>  | <b>4</b>  | <b>71</b>  | <b>67</b>  | <b>1</b>              | <b>2</b>  | <b>0</b> | <b>347</b> | <b>3</b>  | <b>93</b>  | <b>808</b>  |
| <b>Grand Total</b> | <b>3</b>            | <b>142</b> | <b>0</b> | <b>354</b> | <b>145</b> | <b>7</b>              | <b>5</b> | <b>2</b> | <b>816</b> | <b>14</b> | <b>0</b>            | <b>126</b> | <b>14</b> | <b>233</b> | <b>140</b> | <b>1</b>              | <b>10</b> | <b>1</b> | <b>932</b> | <b>12</b> | <b>311</b> | <b>2335</b> |
| Apprch %           | 2.1%                | 97.9%      | 0.0%     |            |            | 50.0%                 | 35.7%    | 14.3%    |            |           | 0.0%                | 90.0%      | 10.0%     |            |            | 8.3%                  | 83.3%     | 8.3%     |            |           |            |             |
| Total %            | 1.0%                | 45.7%      | 0.0%     |            | 46.6%      | 2.3%                  | 1.6%     | 0.6%     |            | 4.5%      | 0.0%                | 40.5%      | 4.5%      |            | 45.0%      | 0.3%                  | 3.2%      | 0.3%     |            | 3.9%      | 100.0%     |             |

| AM PEAK HOUR                                      | Broadway Southbound |        |       |      |           | 21st Street Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 21st Street Eastbound |        |       |      |           | Total |  |
|---|---------------------|--------|-------|------|-----------|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|--------|-------|------|-----------|-------|--|
|   | LEFT                | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU   | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |        |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |        |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |        |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |        |       |      |           |       |  |
| 8:00  | 0                   | 20     | 0     | 22   | 20        | 0                     | 0     | 0     | 55   | 0         | 0                   | 0     | 2     | 12   | 2         | 0                     | 0      | 0     | 54   | 0         | 22    |  |
| 8:15  | 0                   | 13     | 0     | 26   | 13        | 0                     | 1     | 0     | 84   | 1         | 0                   | 3     | 1     | 14   | 4         | 0                     | 3      | 0     | 63   | 3         | 21    |  |
| 8:30  | 0                   | 16     | 0     | 18   | 16        | 0                     | 0     | 0     | 53   | 0         | 0                   | 2     | 0     | 15   | 2         | 0                     | 0      | 0     | 68   | 0         | 18    |  |
| 8:45  | 0                   | 20     | 0     | 32   | 20        | 2                     | 0     | 0     | 60   | 2         | 0                   | 3     | 2     | 14   | 5         | 0                     | 1      | 0     | 59   | 1         | 28    |  |
| Total Volume                                      | 0                   | 69     | 0     | 98   | 69        | 2                     | 1     | 0     | 252  | 3         | 0                   | 8     | 5     | 55   | 13        | 0                     | 4      | 0     | 244  | 4         | 89    |  |
| % App Total                                       | 0.0%                | 100.0% | 0.0%  |      |           | 66.7%                 | 33.3% | 0.0%  |      |           | 0.0%                | 61.5% | 38.5% |      |           | 0.0%                  | 100.0% | 0.0%  |      |           |       |  |
| PHF   | .000                | .863   | .000  |      | .863      | .250                  | .250  | .000  |      | .375      | .000                | .667  | .625  |      | .650      | .000                  | .333   | .000  |      | .333      | .795  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 21st Street Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 21st Street Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-----------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                  | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |      |           |                       |       |       |      |           |                     |       |       |      |           |                       |       |       |      |           |       |  |
| 17:00   | 0                   | 5     | 0     | 40   | 5         | 0                     | 0     | 0     | 62   | 0         | 0                   | 15    | 2     | 19   | 17        | 0                     | 0     | 0     | 120  | 0         | 22    |  |
| 17:15   | 1                   | 7     | 0     | 33   | 8         | 1                     | 0     | 1     | 55   | 2         | 0                   | 18    | 1     | 17   | 19        | 0                     | 1     | 0     | 59   | 1         | 30    |  |
| 17:30   | 0                   | 0     | 0     | 23   | 0         | 2                     | 0     | 0     | 74   | 2         | 0                   | 9     | 0     | 17   | 9         | 1                     | 1     | 0     | 88   | 2         | 13    |  |
| 17:45   | 0                   | 4     | 0     | 24   | 4         | 1                     | 1     | 0     | 79   | 2         | 0                   | 21    | 1     | 18   | 22        | 0                     | 0     | 0     | 80   | 0         | 28    |  |
| Total Volume                                      | 1                   | 16    | 0     | 120  | 17        | 4                     | 1     | 1     | 270  | 6         | 0                   | 63    | 4     | 71   | 67        | 1                     | 2     | 0     | 347  | 3         | 93    |  |
| % App Total                                       | 5.9%                | 94.1% | 0.0%  |      |           | 66.7%                 | 16.7% | 16.7% |      |           | 0.0%                | 94.0% | 6.0%  |      |           | 33.3%                 | 66.7% | 0.0%  |      |           |       |  |
| PHF   | .250                | .571  | .000  |      | .531      | .500                  | .250  | .250  |      | .750      | .000                | .750  | .500  |      | .761      | .250                  | .500  | .000  |      | .375      | .775  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-025 Martin Luther King Jr Way & Thomas L Berkley Way  
 Date : 5/26/2016

### Unshifted Count = All Vehicles & Uturns

| START TIME         | Martin Luther King Jr Way Southbound |            |           |          |            | Thomas L Berkley Way Westbound |           |          |          |            | Martin Luther King Jr Way Northbound |          |            |          |            | Thomas L Berkley Way Eastbound |            |            |          |            | Total       | Uturns Total |
|--------------------|--------------------------------------|------------|-----------|----------|------------|--------------------------------|-----------|----------|----------|------------|--------------------------------------|----------|------------|----------|------------|--------------------------------|------------|------------|----------|------------|-------------|--------------|
|                    | LEFT                                 | THRU       | RIGHT     | UTURNS   | APP.TOTAL  | LEFT                           | THRU      | RIGHT    | UTURNS   | APP.TOTAL  | LEFT                                 | THRU     | RIGHT      | UTURNS   | APP.TOTAL  | LEFT                           | THRU       | RIGHT      | UTURNS   | APP.TOTAL  |             |              |
| 7:00               | 0                                    | 5          | 2         | 0        | 7          | 6                              | 1         | 0        | 0        | 7          | 0                                    | 0        | 3          | 0        | 3          | 0                              | 13         | 5          | 0        | 18         | 35          | 0            |
| 7:15               | 0                                    | 11         | 0         | 0        | 11         | 12                             | 2         | 0        | 0        | 14         | 0                                    | 0        | 6          | 0        | 6          | 0                              | 26         | 9          | 0        | 35         | 66          | 0            |
| 7:30               | 0                                    | 25         | 3         | 0        | 28         | 14                             | 3         | 0        | 0        | 17         | 2                                    | 0        | 12         | 0        | 14         | 0                              | 11         | 15         | 0        | 26         | 85          | 0            |
| 7:45               | 0                                    | 18         | 9         | 0        | 27         | 18                             | 1         | 0        | 0        | 19         | 2                                    | 0        | 10         | 0        | 12         | 0                              | 22         | 6          | 0        | 28         | 86          | 0            |
| <b>Total</b>       | <b>0</b>                             | <b>59</b>  | <b>14</b> | <b>0</b> | <b>73</b>  | <b>50</b>                      | <b>7</b>  | <b>0</b> | <b>0</b> | <b>57</b>  | <b>4</b>                             | <b>0</b> | <b>31</b>  | <b>0</b> | <b>35</b>  | <b>0</b>                       | <b>72</b>  | <b>35</b>  | <b>0</b> | <b>107</b> | <b>272</b>  | <b>0</b>     |
| 8:00               | 0                                    | 29         | 5         | 0        | 34         | 13                             | 5         | 0        | 0        | 18         | 2                                    | 0        | 14         | 0        | 16         | 0                              | 18         | 5          | 0        | 23         | 91          | 0            |
| 8:15               | 0                                    | 37         | 3         | 0        | 40         | 11                             | 6         | 0        | 0        | 17         | 0                                    | 0        | 15         | 0        | 15         | 0                              | 32         | 9          | 0        | 41         | 113         | 0            |
| 8:30               | 0                                    | 31         | 2         | 0        | 33         | 8                              | 1         | 0        | 0        | 9          | 0                                    | 0        | 12         | 0        | 12         | 0                              | 18         | 5          | 0        | 23         | 77          | 0            |
| 8:45               | 0                                    | 41         | 5         | 0        | 46         | 12                             | 1         | 0        | 0        | 13         | 0                                    | 0        | 20         | 0        | 20         | 0                              | 22         | 5          | 0        | 27         | 106         | 0            |
| <b>Total</b>       | <b>0</b>                             | <b>138</b> | <b>15</b> | <b>0</b> | <b>153</b> | <b>44</b>                      | <b>13</b> | <b>0</b> | <b>0</b> | <b>57</b>  | <b>2</b>                             | <b>0</b> | <b>61</b>  | <b>0</b> | <b>63</b>  | <b>0</b>                       | <b>90</b>  | <b>24</b>  | <b>0</b> | <b>114</b> | <b>387</b>  | <b>0</b>     |
| 16:00              | 0                                    | 28         | 1         | 0        | 29         | 12                             | 3         | 0        | 0        | 15         | 0                                    | 0        | 25         | 0        | 25         | 0                              | 18         | 10         | 0        | 28         | 97          | 0            |
| 16:15              | 0                                    | 34         | 6         | 0        | 40         | 19                             | 3         | 0        | 0        | 22         | 1                                    | 0        | 22         | 0        | 23         | 0                              | 11         | 9          | 0        | 20         | 105         | 0            |
| 16:30              | 0                                    | 41         | 2         | 0        | 43         | 25                             | 2         | 0        | 0        | 27         | 0                                    | 0        | 38         | 0        | 38         | 0                              | 14         | 13         | 0        | 27         | 135         | 0            |
| 16:45              | 0                                    | 26         | 1         | 0        | 27         | 11                             | 1         | 0        | 0        | 12         | 0                                    | 0        | 20         | 0        | 20         | 0                              | 8          | 5          | 0        | 13         | 72          | 0            |
| <b>Total</b>       | <b>0</b>                             | <b>129</b> | <b>10</b> | <b>0</b> | <b>139</b> | <b>67</b>                      | <b>9</b>  | <b>0</b> | <b>0</b> | <b>76</b>  | <b>1</b>                             | <b>0</b> | <b>105</b> | <b>0</b> | <b>106</b> | <b>0</b>                       | <b>51</b>  | <b>37</b>  | <b>0</b> | <b>88</b>  | <b>409</b>  | <b>0</b>     |
| 17:00              | 0                                    | 34         | 3         | 0        | 37         | 28                             | 1         | 0        | 0        | 29         | 0                                    | 0        | 47         | 0        | 47         | 0                              | 20         | 16         | 0        | 36         | 149         | 0            |
| 17:15              | 0                                    | 34         | 1         | 0        | 35         | 16                             | 2         | 0        | 0        | 18         | 1                                    | 0        | 36         | 0        | 37         | 0                              | 16         | 9          | 0        | 25         | 115         | 0            |
| 17:30              | 0                                    | 24         | 1         | 0        | 25         | 22                             | 4         | 0        | 0        | 26         | 0                                    | 0        | 31         | 0        | 31         | 0                              | 17         | 3          | 0        | 20         | 102         | 0            |
| 17:45              | 0                                    | 28         | 3         | 0        | 31         | 17                             | 2         | 0        | 0        | 19         | 0                                    | 0        | 33         | 0        | 33         | 0                              | 15         | 14         | 0        | 29         | 112         | 0            |
| <b>Total</b>       | <b>0</b>                             | <b>120</b> | <b>8</b>  | <b>0</b> | <b>128</b> | <b>83</b>                      | <b>9</b>  | <b>0</b> | <b>0</b> | <b>92</b>  | <b>1</b>                             | <b>0</b> | <b>147</b> | <b>0</b> | <b>148</b> | <b>0</b>                       | <b>68</b>  | <b>42</b>  | <b>0</b> | <b>110</b> | <b>478</b>  | <b>0</b>     |
| <b>Grand Total</b> | <b>0</b>                             | <b>446</b> | <b>47</b> | <b>0</b> | <b>493</b> | <b>244</b>                     | <b>38</b> | <b>0</b> | <b>0</b> | <b>282</b> | <b>8</b>                             | <b>0</b> | <b>344</b> | <b>0</b> | <b>352</b> | <b>0</b>                       | <b>281</b> | <b>138</b> | <b>0</b> | <b>419</b> | <b>1546</b> | <b>0</b>     |
| Apprch %           | 0.0%                                 | 90.5%      | 9.5%      | 0.0%     |            | 86.5%                          | 13.5%     | 0.0%     | 0.0%     |            | 2.3%                                 | 0.0%     | 97.7%      | 0.0%     |            | 0.0%                           | 67.1%      | 32.9%      | 0.0%     |            |             |              |
| Total %            | 0.0%                                 | 28.8%      | 3.0%      | 0.0%     | 31.9%      | 15.8%                          | 2.5%      | 0.0%     | 0.0%     | 18.2%      | 0.5%                                 | 0.0%     | 22.3%      | 0.0%     | 22.8%      | 0.0%                           | 18.2%      | 8.9%       | 0.0%     | 27.1%      | 100.0%      |              |

| AM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |       |       |        |           | Thomas L Berkley Way Westbound |       |       |        |           | Martin Luther King Jr Way Northbound |      |       |        |           | Thomas L Berkley Way Eastbound |       |       |        |           | Total |
|---|--------------------------------------|-------|-------|--------|-----------|--------------------------------|-------|-------|--------|-----------|--------------------------------------|------|-------|--------|-----------|--------------------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                                 | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                           | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                 | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                           | THRU  | RIGHT | UTURNS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                                      |       |       |        |           |                                |       |       |        |           |                                      |      |       |        |           |                                |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                                      |       |       |        |           |                                |       |       |        |           |                                      |      |       |        |           |                                |       |       |        |           |       |
| 8:00  | 0                                    | 29    | 5     | 0      | 34        | 13                             | 5     | 0     | 0      | 18        | 2                                    | 0    | 14    | 0      | 16        | 0                              | 18    | 5     | 0      | 23        | 91    |
| 8:15  | 0                                    | 37    | 3     | 0      | 40        | 11                             | 6     | 0     | 0      | 17        | 0                                    | 0    | 15    | 0      | 15        | 0                              | 32    | 9     | 0      | 41        | 113   |
| 8:30  | 0                                    | 31    | 2     | 0      | 33        | 8                              | 1     | 0     | 0      | 9         | 0                                    | 0    | 12    | 0      | 12        | 0                              | 18    | 5     | 0      | 23        | 77    |
| 8:45  | 0                                    | 41    | 5     | 0      | 46        | 12                             | 1     | 0     | 0      | 13        | 0                                    | 0    | 20    | 0      | 20        | 0                              | 22    | 5     | 0      | 27        | 106   |
| Total Volume                                      | 0                                    | 138   | 15    | 0      | 153       | 44                             | 13    | 0     | 0      | 57        | 2                                    | 0    | 61    | 0      | 63        | 0                              | 90    | 24    | 0      | 114       | 387   |
| % App Total                                       | 0.0%                                 | 90.2% | 9.8%  | 0.0%   |           | 77.2%                          | 22.8% | 0.0%  | 0.0%   |           | 3.2%                                 | 0.0% | 96.8% | 0.0%   |           | 0.0%                           | 78.9% | 21.1% | 0.0%   |           |       |
| PHF   | .000                                 | .841  | .750  | .000   | .832      | .846                           | .542  | .000  | .000   | .792      | .250                                 | .000 | .763  | .000   | .788      | .000                           | .703  | .667  | .000   | .695      | .856  |

| PM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |       |       |        |           | Thomas L Berkley Way Westbound |      |       |        |           | Martin Luther King Jr Way Northbound |      |       |        |           | Thomas L Berkley Way Eastbound |       |       |        |           | Total |
|---|--------------------------------------|-------|-------|--------|-----------|--------------------------------|------|-------|--------|-----------|--------------------------------------|------|-------|--------|-----------|--------------------------------|-------|-------|--------|-----------|-------|
| START TIME  | LEFT                                 | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                           | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                                 | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                           | THRU  | RIGHT | UTURNS | APP.TOTAL | Total |
| Peak Hour Analysis From 17:00 to 18:00            |                                      |       |       |        |           |                                |      |       |        |           |                                      |      |       |        |           |                                |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                                      |       |       |        |           |                                |      |       |        |           |                                      |      |       |        |           |                                |       |       |        |           |       |
| 17:00   | 0                                    | 34    | 3     | 0      | 37        | 28                             | 1    | 0     | 0      | 29        | 0                                    | 0    | 47    | 0      | 47        | 0                              | 20    | 16    | 0      | 36        | 149   |
| 17:15   | 0                                    | 34    | 1     | 0      | 35        | 16                             | 2    | 0     | 0      | 18        | 1                                    | 0    | 36    | 0      | 37        | 0                              | 16    | 9     | 0      | 25        | 115   |
| 17:30   | 0                                    | 24    | 1     | 0      | 25        | 22                             | 4    | 0     | 0      | 26        | 0                                    | 0    | 31    | 0      | 31        | 0                              | 17    | 3     | 0      | 20        | 102   |
| 17:45   | 0                                    | 28    | 3     | 0      | 31        | 17                             | 2    | 0     | 0      | 19        | 0                                    | 0    | 33    | 0      | 33        | 0                              | 15    | 14    | 0      | 29        | 112   |
| Total Volume                                      | 0                                    | 120   | 8     | 0      | 128       | 83                             | 9    | 0     | 0      | 92        | 1                                    | 0    | 147   | 0      | 148       | 0                              | 68    | 42    | 0      | 110       | 478   |
| % App Total                                       | 0.0%                                 | 93.8% | 6.3%  | 0.0%   |           | 90.2%                          | 9.8% | 0.0%  | 0.0%   |           | 0.7%                                 | 0.0% | 99.3% | 0.0%   |           | 0.0%                           | 61.8% | 38.2% | 0.0%   |           |       |
| PHF   | .000                                 | .882  | .667  | .000   | .865      | .741                           | .563 | .000  | .000   | .793      | .250                                 | .000 | .782  | .000   | .787      | .000                           | .850  | .656  | .000   | .764      | .802  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-025 Martin Luther King Jr Way & Thomas L Berkley Way  
 Date : 5/26/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Martin Luther King Jr Way Southbound |           |          |            |           | Thomas L Berkley Way Westbound |          |          |            |           | Martin Luther King Jr Way Northbound |          |           |            |           | Thomas L Berkley Way Eastbound |          |          |           |           | Total     | Peds Total |    |
|--------------------|--------------------------------------|-----------|----------|------------|-----------|--------------------------------|----------|----------|------------|-----------|--------------------------------------|----------|-----------|------------|-----------|--------------------------------|----------|----------|-----------|-----------|-----------|------------|----|
|                    | LEFT                                 | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                           | THRU     | RIGHT    | PEDS       | APP.TOTAL | LEFT                                 | THRU     | RIGHT     | PEDS       | APP.TOTAL | LEFT                           | THRU     | RIGHT    | PEDS      | APP.TOTAL |           |            |    |
| 7:00               | 0                                    | 0         | 0        | 2          | 0         | 0                              | 0        | 0        | 2          | 0         | 0                                    | 0        | 0         | 6          | 0         | 0                              | 0        | 0        | 1         | 0         | 0         | 11         | 6  |
| 7:15               | 0                                    | 1         | 0        | 2          | 1         | 0                              | 0        | 0        | 3          | 0         | 0                                    | 0        | 0         | 1          | 0         | 0                              | 0        | 0        | 0         | 0         | 0         | 1          | 6  |
| 7:30               | 0                                    | 0         | 0        | 6          | 0         | 1                              | 0        | 0        | 7          | 1         | 0                                    | 0        | 0         | 0          | 0         | 0                              | 0        | 0        | 3         | 0         | 0         | 1          | 16 |
| 7:45               | 0                                    | 2         | 0        | 10         | 2         | 1                              | 0        | 0        | 6          | 1         | 0                                    | 0        | 1         | 14         | 1         | 0                              | 0        | 0        | 6         | 0         | 0         | 4          | 36 |
| <b>Total</b>       | <b>0</b>                             | <b>3</b>  | <b>0</b> | <b>20</b>  | <b>3</b>  | <b>2</b>                       | <b>0</b> | <b>0</b> | <b>18</b>  | <b>2</b>  | <b>0</b>                             | <b>0</b> | <b>1</b>  | <b>21</b>  | <b>1</b>  | <b>0</b>                       | <b>0</b> | <b>0</b> | <b>10</b> | <b>0</b>  | <b>6</b>  | <b>69</b>  |    |
| 8:00               | 0                                    | 1         | 0        | 0          | 1         | 0                              | 0        | 0        | 2          | 0         | 0                                    | 0        | 0         | 13         | 0         | 0                              | 0        | 0        | 7         | 0         | 0         | 1          | 22 |
| 8:15               | 0                                    | 1         | 0        | 10         | 1         | 0                              | 0        | 0        | 10         | 0         | 0                                    | 0        | 2         | 12         | 2         | 0                              | 0        | 0        | 5         | 0         | 0         | 3          | 37 |
| 8:30               | 0                                    | 4         | 0        | 6          | 4         | 1                              | 0        | 0        | 7          | 1         | 0                                    | 0        | 2         | 4          | 2         | 0                              | 0        | 0        | 1         | 0         | 0         | 7          | 18 |
| 8:45               | 1                                    | 4         | 0        | 2          | 5         | 0                              | 0        | 0        | 2          | 0         | 0                                    | 0        | 1         | 2          | 1         | 0                              | 0        | 0        | 4         | 0         | 0         | 6          | 10 |
| <b>Total</b>       | <b>1</b>                             | <b>10</b> | <b>0</b> | <b>18</b>  | <b>11</b> | <b>1</b>                       | <b>0</b> | <b>0</b> | <b>21</b>  | <b>1</b>  | <b>0</b>                             | <b>0</b> | <b>5</b>  | <b>31</b>  | <b>5</b>  | <b>0</b>                       | <b>0</b> | <b>0</b> | <b>17</b> | <b>0</b>  | <b>17</b> | <b>87</b>  |    |
| 16:00              | 0                                    | 0         | 0        | 17         | 0         | 0                              | 1        | 0        | 17         | 1         | 0                                    | 0        | 0         | 2          | 0         | 0                              | 0        | 0        | 0         | 0         | 0         | 1          | 36 |
| 16:15              | 0                                    | 0         | 0        | 11         | 0         | 0                              | 0        | 0        | 9          | 0         | 0                                    | 0        | 0         | 12         | 0         | 0                              | 0        | 0        | 5         | 0         | 0         | 0          | 37 |
| 16:30              | 0                                    | 0         | 0        | 10         | 0         | 1                              | 1        | 0        | 12         | 2         | 0                                    | 0        | 3         | 8          | 3         | 0                              | 0        | 0        | 1         | 0         | 0         | 5          | 31 |
| 16:45              | 0                                    | 3         | 0        | 9          | 3         | 2                              | 0        | 0        | 7          | 2         | 0                                    | 0        | 2         | 7          | 2         | 0                              | 0        | 0        | 4         | 0         | 0         | 7          | 27 |
| <b>Total</b>       | <b>0</b>                             | <b>3</b>  | <b>0</b> | <b>47</b>  | <b>3</b>  | <b>3</b>                       | <b>2</b> | <b>0</b> | <b>45</b>  | <b>5</b>  | <b>0</b>                             | <b>0</b> | <b>5</b>  | <b>29</b>  | <b>5</b>  | <b>0</b>                       | <b>0</b> | <b>0</b> | <b>10</b> | <b>0</b>  | <b>13</b> | <b>131</b> |    |
| 17:00              | 0                                    | 1         | 0        | 4          | 1         | 3                              | 0        | 0        | 8          | 3         | 0                                    | 0        | 3         | 6          | 3         | 0                              | 0        | 0        | 4         | 0         | 0         | 7          | 22 |
| 17:15              | 0                                    | 1         | 0        | 6          | 1         | 0                              | 0        | 0        | 5          | 0         | 0                                    | 0        | 1         | 3          | 1         | 0                              | 0        | 0        | 1         | 0         | 0         | 2          | 15 |
| 17:30              | 0                                    | 2         | 0        | 3          | 2         | 0                              | 0        | 0        | 4          | 0         | 0                                    | 0        | 2         | 6          | 2         | 0                              | 0        | 0        | 2         | 0         | 0         | 4          | 15 |
| 17:45              | 0                                    | 1         | 0        | 10         | 1         | 1                              | 0        | 0        | 15         | 1         | 0                                    | 0        | 2         | 4          | 2         | 0                              | 2        | 0        | 3         | 2         | 0         | 6          | 32 |
| <b>Total</b>       | <b>0</b>                             | <b>5</b>  | <b>0</b> | <b>23</b>  | <b>5</b>  | <b>4</b>                       | <b>0</b> | <b>0</b> | <b>32</b>  | <b>4</b>  | <b>0</b>                             | <b>0</b> | <b>8</b>  | <b>19</b>  | <b>8</b>  | <b>0</b>                       | <b>2</b> | <b>0</b> | <b>10</b> | <b>2</b>  | <b>19</b> | <b>84</b>  |    |
| <b>Grand Total</b> | <b>1</b>                             | <b>21</b> | <b>0</b> | <b>108</b> | <b>22</b> | <b>10</b>                      | <b>2</b> | <b>0</b> | <b>116</b> | <b>12</b> | <b>0</b>                             | <b>0</b> | <b>19</b> | <b>100</b> | <b>19</b> | <b>0</b>                       | <b>2</b> | <b>0</b> | <b>47</b> | <b>2</b>  | <b>55</b> | <b>371</b> |    |
| Apprch %           | 4.5%                                 | 95.5%     | 0.0%     |            |           | 83.3%                          | 16.7%    | 0.0%     |            |           | 0.0%                                 | 0.0%     | 100.0%    |            |           | 0.0%                           | 100.0%   | 0.0%     |           |           |           |            |    |
| Total %            | 1.8%                                 | 38.2%     | 0.0%     |            | 40.0%     | 18.2%                          | 3.6%     | 0.0%     |            | 21.8%     | 0.0%                                 | 0.0%     | 34.5%     |            | 34.5%     | 0.0%                           | 3.6%     | 0.0%     |           | 3.6%      |           | 100.0%     |    |

| AM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |       |       |      |           | Thomas L Berkley Way Westbound |      |       |      |           | Martin Luther King Jr Way Northbound |      |        |      |           | Thomas L Berkley Way Eastbound |      |       |      |           | Total |  |
|---|--------------------------------------|-------|-------|------|-----------|--------------------------------|------|-------|------|-----------|--------------------------------------|------|--------|------|-----------|--------------------------------|------|-------|------|-----------|-------|--|
| START TIME  | LEFT                                 | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                           | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                                 | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                           | THRU | RIGHT | PEDS | APP.TOTAL | Total |  |
| Peak Hour Analysis From 08:00 to 09:00            |                                      |       |       |      |           |                                |      |       |      |           |                                      |      |        |      |           |                                |      |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                                      |       |       |      |           |                                |      |       |      |           |                                      |      |        |      |           |                                |      |       |      |           |       |  |
| 8:00  | 0                                    | 1     | 0     | 0    | 1         | 0                              | 0    | 0     | 2    | 0         | 0                                    | 0    | 0      | 13   | 0         | 0                              | 0    | 0     | 7    | 0         | 1     |  |
| 8:15  | 0                                    | 1     | 0     | 10   | 1         | 0                              | 0    | 0     | 10   | 0         | 0                                    | 0    | 2      | 12   | 2         | 0                              | 0    | 0     | 5    | 0         | 3     |  |
| 8:30  | 0                                    | 4     | 0     | 6    | 4         | 1                              | 0    | 0     | 7    | 1         | 0                                    | 0    | 2      | 4    | 2         | 0                              | 0    | 0     | 1    | 0         | 7     |  |
| 8:45  | 1                                    | 4     | 0     | 2    | 5         | 0                              | 0    | 0     | 2    | 0         | 0                                    | 0    | 1      | 2    | 1         | 0                              | 0    | 0     | 4    | 0         | 6     |  |
| Total Volume                                      | 1                                    | 10    | 0     | 18   | 11        | 1                              | 0    | 0     | 21   | 1         | 0                                    | 0    | 5      | 31   | 5         | 0                              | 0    | 0     | 17   | 0         | 17    |  |
| % App Total                                       | 9.1%                                 | 90.9% | 0.0%  |      |           | 100.0%                         | 0.0% | 0.0%  |      |           | 0.0%                                 | 0.0% | 100.0% |      |           | 0.0%                           | 0.0% | 0.0%  |      |           |       |  |
| PHF   | .250                                 | .625  | .000  |      | .550      | .250                           | .000 | .000  |      | .250      | .000                                 | .000 | .625   |      | .625      | .000                           | .000 | .000  |      | .000      | .607  |  |

| PM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |        |       |      |           | Thomas L Berkley Way Westbound |      |       |      |           | Martin Luther King Jr Way Northbound |      |        |      |           | Thomas L Berkley Way Eastbound |        |       |      |           | Total |  |
|---|--------------------------------------|--------|-------|------|-----------|--------------------------------|------|-------|------|-----------|--------------------------------------|------|--------|------|-----------|--------------------------------|--------|-------|------|-----------|-------|--|
| START TIME  | LEFT                                 | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                           | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                                 | THRU | RIGHT  | PEDS | APP.TOTAL | LEFT                           | THRU   | RIGHT | PEDS | APP.TOTAL | Total |  |
| Peak Hour Analysis From 17:00 to 18:00            |                                      |        |       |      |           |                                |      |       |      |           |                                      |      |        |      |           |                                |        |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                                      |        |       |      |           |                                |      |       |      |           |                                      |      |        |      |           |                                |        |       |      |           |       |  |
| 17:00   | 0                                    | 1      | 0     | 4    | 1         | 3                              | 0    | 0     | 8    | 3         | 0                                    | 0    | 3      | 6    | 3         | 0                              | 0      | 0     | 4    | 0         | 7     |  |
| 17:15   | 0                                    | 1      | 0     | 6    | 1         | 0                              | 0    | 0     | 5    | 0         | 0                                    | 0    | 1      | 3    | 1         | 0                              | 0      | 0     | 1    | 0         | 2     |  |
| 17:30   | 0                                    | 2      | 0     | 3    | 2         | 0                              | 0    | 0     | 4    | 0         | 0                                    | 0    | 2      | 6    | 2         | 0                              | 0      | 0     | 2    | 0         | 4     |  |
| 17:45   | 0                                    | 1      | 0     | 10   | 1         | 1                              | 0    | 0     | 15   | 1         | 0                                    | 0    | 2      | 4    | 2         | 0                              | 2      | 0     | 3    | 2         | 6     |  |
| Total Volume                                      | 0                                    | 5      | 0     | 23   | 5         | 4                              | 0    | 0     | 32   | 4         | 0                                    | 0    | 8      | 19   | 8         | 0                              | 2      | 0     | 10   | 2         | 19    |  |
| % App Total                                       | 0.0%                                 | 100.0% | 0.0%  |      |           | 100.0%                         | 0.0% | 0.0%  |      |           | 0.0%                                 | 0.0% | 100.0% |      |           | 0.0%                           | 100.0% | 0.0%  |      |           |       |  |
| PHF   | .000                                 | .625   | .000  |      | .625      | .333                           | .000 | .000  |      | .333      | .000                                 | .000 | .667   |      | .667      | .000                           | .250   | .000  |      | .250      | .679  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-001 Telegraph Ave & Thomas L Berkley Way (20th St)  
 Date : 9/29/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Telegraph Ave Southbound |            |            |          |             | Thomas L Berkley Way (20th St) Westbound |            |            |          |             | Telegraph Ave Northbound |            |            |          |             | Thomas L Berkley Way (20th St) Eastbound |            |           |          |            | Total       | Utturns Total |
|--------------------|--------------------------|------------|------------|----------|-------------|--|------------|------------|----------|-------------|--------------------------|------------|------------|----------|-------------|--|------------|-----------|----------|------------|-------------|---------------|
|                    | LEFT                     | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                                     | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                     | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                                     | THRU       | RIGHT     | UTURNS   | APP.TOTAL  |             |               |
| 7:30               | 31                       | 25         | 16         | 0        | 72          | 3  | 22         | 21         | 0        | 46          | 3                        | 46         | 3          | 0        | 52          | 9  | 20         | 3         | 0        | 32         | 202         | 0             |
| 7:45               | 28                       | 66         | 14         | 0        | 108         | 7  | 23         | 17         | 0        | 47          | 3                        | 74         | 6          | 0        | 83          | 18                                       | 24         | 4         | 0        | 46         | 284         | 0             |
| 8:00               | 43                       | 65         | 15         | 0        | 123         | 3  | 23         | 25         | 0        | 51          | 3                        | 57         | 12         | 0        | 72          | 18                                       | 35         | 9         | 0        | 62         | 308         | 0             |
| 8:15               | 33                       | 49         | 16         | 0        | 98          | 3  | 34         | 28         | 0        | 65          | 1                        | 42         | 4          | 0        | 47          | 11                                       | 23         | 7         | 0        | 41         | 251         | 0             |
| <b>Total</b>       | <b>135</b>               | <b>205</b> | <b>61</b>  | <b>0</b> | <b>401</b>  | <b>16</b>                                | <b>102</b> | <b>91</b>  | <b>0</b> | <b>209</b>  | <b>10</b>                | <b>219</b> | <b>25</b>  | <b>0</b> | <b>254</b>  | <b>56</b>                                | <b>102</b> | <b>23</b> | <b>0</b> | <b>181</b> | <b>1045</b> | <b>0</b>      |
| 8:30               | 36                       | 57         | 20         | 0        | 113         | 0  | 28         | 31         | 0        | 59          | 2                        | 41         | 5          | 0        | 48          | 7  | 30         | 1         | 0        | 38         | 258         | 0             |
| 8:45               | 47                       | 58         | 16         | 0        | 121         | 1  | 28         | 26         | 0        | 55          | 2                        | 38         | 3          | 0        | 43          | 6  | 23         | 5         | 0        | 34         | 253         | 0             |
| 9:00               | 45                       | 45         | 13         | 0        | 103         | 4  | 32         | 33         | 0        | 69          | 4                        | 38         | 4          | 0        | 46          | 9  | 22         | 4         | 0        | 35         | 253         | 0             |
| 9:15               | 37                       | 56         | 13         | 0        | 106         | 2  | 20         | 26         | 0        | 48          | 3                        | 43         | 9          | 0        | 55          | 3  | 22         | 5         | 0        | 30         | 239         | 0             |
| <b>Total</b>       | <b>165</b>               | <b>216</b> | <b>62</b>  | <b>0</b> | <b>443</b>  | <b>7</b>                                 | <b>108</b> | <b>116</b> | <b>0</b> | <b>231</b>  | <b>11</b>                | <b>160</b> | <b>21</b>  | <b>0</b> | <b>192</b>  | <b>25</b>                                | <b>97</b>  | <b>15</b> | <b>0</b> | <b>137</b> | <b>1003</b> | <b>0</b>      |
| 16:00              | 22                       | 63         | 17         | 0        | 102         | 5  | 25         | 44         | 0        | 74          | 5                        | 71         | 6          | 0        | 82          | 11                                       | 23         | 4         | 0        | 38         | 296         | 0             |
| 16:15              | 21                       | 69         | 13         | 0        | 103         | 4  | 23         | 38         | 0        | 65          | 0                        | 60         | 7          | 0        | 67          | 9  | 26         | 5         | 0        | 40         | 275         | 0             |
| 16:30              | 29                       | 80         | 24         | 0        | 133         | 7  | 32         | 37         | 0        | 76          | 6                        | 60         | 5          | 0        | 71          | 7  | 33         | 5         | 0        | 45         | 325         | 0             |
| 16:45              | 18                       | 62         | 20         | 0        | 100         | 2  | 35         | 34         | 0        | 71          | 4                        | 74         | 8          | 0        | 86          | 18                                       | 25         | 4         | 0        | 47         | 304         | 0             |
| <b>Total</b>       | <b>90</b>                | <b>274</b> | <b>74</b>  | <b>0</b> | <b>438</b>  | <b>18</b>                                | <b>115</b> | <b>153</b> | <b>0</b> | <b>286</b>  | <b>15</b>                | <b>265</b> | <b>26</b>  | <b>0</b> | <b>306</b>  | <b>45</b>                                | <b>107</b> | <b>18</b> | <b>0</b> | <b>170</b> | <b>1200</b> | <b>0</b>      |
| 17:00              | 31                       | 57         | 24         | 0        | 112         | 3  | 41         | 49         | 0        | 93          | 5                        | 59         | 3          | 0        | 67          | 8  | 38         | 3         | 0        | 49         | 321         | 0             |
| 17:15              | 22                       | 74         | 15         | 0        | 111         | 3  | 37         | 62         | 0        | 102         | 3                        | 62         | 12         | 0        | 77          | 14                                       | 29         | 7         | 0        | 50         | 340         | 0             |
| 17:30              | 26                       | 61         | 17         | 0        | 104         | 4  | 32         | 37         | 0        | 73          | 1                        | 57         | 11         | 0        | 69          | 23                                       | 36         | 7         | 0        | 66         | 312         | 0             |
| 17:45              | 18                       | 79         | 20         | 0        | 117         | 10                                       | 35         | 57         | 0        | 102         | 2                        | 57         | 14         | 0        | 73          | 23                                       | 29         | 9         | 0        | 61         | 353         | 0             |
| <b>Total</b>       | <b>97</b>                | <b>271</b> | <b>76</b>  | <b>0</b> | <b>444</b>  | <b>20</b>                                | <b>145</b> | <b>205</b> | <b>0</b> | <b>370</b>  | <b>11</b>                | <b>235</b> | <b>40</b>  | <b>0</b> | <b>286</b>  | <b>68</b>                                | <b>132</b> | <b>26</b> | <b>0</b> | <b>226</b> | <b>1326</b> | <b>0</b>      |
| <b>Grand Total</b> | <b>487</b>               | <b>966</b> | <b>273</b> | <b>0</b> | <b>1726</b> | <b>61</b>                                | <b>470</b> | <b>565</b> | <b>0</b> | <b>1096</b> | <b>47</b>                | <b>879</b> | <b>112</b> | <b>0</b> | <b>1038</b> | <b>194</b>                               | <b>438</b> | <b>82</b> | <b>0</b> | <b>714</b> | <b>4574</b> | <b>0</b>      |
| Apprch %           | 28.2%                    | 56.0%      | 15.8%      | 0.0%     |             | 5.6%                                     | 42.9%      | 51.6%      | 0.0%     |             | 4.5%                     | 84.7%      | 10.8%      | 0.0%     |             | 27.2%                                    | 61.3%      | 11.5%     | 0.0%     |            |             |               |
| Total %            | 10.6%                    | 21.1%      | 6.0%       | 0.0%     | 37.7%       | 1.3%                                     | 10.3%      | 12.4%      | 0.0%     | 24.0%       | 1.0%                     | 19.2%      | 2.4%       | 0.0%     | 22.7%       | 4.2%                                     | 9.6%       | 1.8%      | 0.0%     | 15.6%      | 100.0%      |               |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | Thomas L Berkley Way (20th St) Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | Thomas L Berkley Way (20th St) Eastbound |       |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |       |       |        |           |  |       |       |        |           |                          |       |       |        |           |  |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |       |       |        |           |  |       |       |        |           |                          |       |       |        |           |  |       |       |        |           |       |
| 7:45  | 28                       | 66    | 14    | 0      | 108       | 7  | 23    | 17    | 0      | 47        | 3                        | 74    | 6     | 0      | 83        | 18                                       | 24    | 4     | 0      | 46        | 284   |
| 8:00  | 43                       | 65    | 15    | 0      | 123       | 3  | 23    | 25    | 0      | 51        | 3                        | 57    | 12    | 0      | 72        | 18                                       | 35    | 9     | 0      | 62        | 308   |
| 8:15  | 33                       | 49    | 16    | 0      | 98        | 3  | 34    | 28    | 0      | 65        | 1                        | 42    | 4     | 0      | 47        | 11                                       | 23    | 7     | 0      | 41        | 251   |
| 8:30  | 36                       | 57    | 20    | 0      | 113       | 0  | 28    | 31    | 0      | 59        | 2                        | 41    | 5     | 0      | 48        | 7  | 30    | 1     | 0      | 38        | 258   |
| Total Volume                                      | 140                      | 237   | 65    | 0      | 442       | 13                                       | 108   | 101   | 0      | 222       | 9                        | 214   | 27    | 0      | 250       | 54                                       | 112   | 21    | 0      | 187       | 1101  |
| % App Total                                       | 31.7%                    | 53.6% | 14.7% | 0.0%   |           | 5.9%                                     | 48.6% | 45.5% | 0.0%   |           | 3.6%                     | 85.6% | 10.8% | 0.0%   |           | 28.9%                                    | 59.9% | 11.2% | 0.0%   |           |       |
| PHF   | .814                     | .898  | .813  | .000   | .898      | .464                                     | .794  | .815  | .000   | .854      | .750                     | .723  | .563  | .000   | .753      | .750                                     | .800  | .583  | .000   | .754      | .894  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |        |           | Thomas L Berkley Way (20th St) Westbound |       |       |        |           | Telegraph Ave Northbound |       |       |        |           | Thomas L Berkley Way (20th St) Eastbound |       |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|--|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |        |           |  |       |       |        |           |                          |       |       |        |           |  |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |        |           |  |       |       |        |           |                          |       |       |        |           |  |       |       |        |           |       |
| 17:00   | 31                       | 57    | 24    | 0      | 112       | 3  | 41    | 49    | 0      | 93        | 5                        | 59    | 3     | 0      | 67        | 8  | 38    | 3     | 0      | 49        | 321   |
| 17:15   | 22                       | 74    | 15    | 0      | 111       | 3  | 37    | 62    | 0      | 102       | 3                        | 62    | 12    | 0      | 77        | 14                                       | 29    | 7     | 0      | 50        | 340   |
| 17:30   | 26                       | 61    | 17    | 0      | 104       | 4  | 32    | 37    | 0      | 73        | 1                        | 57    | 11    | 0      | 69        | 23                                       | 36    | 7     | 0      | 66        | 312   |
| 17:45   | 18                       | 79    | 20    | 0      | 117       | 10                                       | 35    | 57    | 0      | 102       | 2                        | 57    | 14    | 0      | 73        | 23                                       | 29    | 9     | 0      | 61        | 353   |
| Total Volume                                      | 97                       | 271   | 76    | 0      | 444       | 20                                       | 145   | 205   | 0      | 370       | 11                       | 235   | 40    | 0      | 286       | 68                                       | 132   | 26    | 0      | 226       | 1326  |
| % App Total                                       | 21.8%                    | 61.0% | 17.1% | 0.0%   |           | 5.4%                                     | 39.2% | 55.4% | 0.0%   |           | 3.8%                     | 82.2% | 14.0% | 0.0%   |           | 30.1%                                    | 58.4% | 11.5% | 0.0%   |           |       |
| PHF   | .782                     | .858  | .792  | .000   | .949      | .500                                     | .884  | .827  | .000   | .907      | .550                     | .948  | .714  | .000   | .929      | .739                                     | .868  | .722  | .000   | .856      | .939  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7683-001 Telegraph Ave & Thomas L Berkley Way (20th St)  
 Date : 9/29/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |           |            |            | Thomas L Berkley Way (20th St) Westbound |           |           |            |           | Telegraph Ave Northbound |            |          |            |            | Thomas L Berkley Way (20th St) Eastbound |           |           |            |           | Total      | Peds Total  |
|--------------------|--------------------------|------------|-----------|------------|------------|--|-----------|-----------|------------|-----------|--------------------------|------------|----------|------------|------------|--|-----------|-----------|------------|-----------|------------|-------------|
|                    | LEFT                     | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT                                     | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT                                     | THRU      | RIGHT     | PEDS       | APP.TOTAL |            |             |
| 7:30               | 5                        | 11         | 2         | 18         | 18         | 0  | 1         | 0         | 19         | 1         | 0                        | 1          | 0        | 50         | 1          | 0  | 1         | 0         | 17         | 1         | 21         | 104         |
| 7:45               | 1                        | 10         | 2         | 21         | 13         | 0  | 2         | 1         | 27         | 3         | 1                        | 2          | 0        | 51         | 3          | 0  | 3         | 1         | 30         | 4         | 23         | 129         |
| 8:00               | 4                        | 18         | 0         | 27         | 22         | 1  | 3         | 0         | 31         | 4         | 0                        | 1          | 1        | 44         | 2          | 4  | 2         | 3         | 19         | 9         | 37         | 121         |
| 8:15               | 3                        | 15         | 0         | 15         | 18         | 2  | 1         | 0         | 27         | 3         | 1                        | 3          | 2        | 76         | 6          | 0  | 7         | 3         | 22         | 10        | 37         | 140         |
| <b>Total</b>       | <b>13</b>                | <b>54</b>  | <b>4</b>  | <b>81</b>  | <b>71</b>  | <b>3</b>                                 | <b>7</b>  | <b>1</b>  | <b>104</b> | <b>11</b> | <b>2</b>                 | <b>7</b>   | <b>3</b> | <b>221</b> | <b>12</b>  | <b>4</b>                                 | <b>13</b> | <b>7</b>  | <b>88</b>  | <b>24</b> | <b>118</b> | <b>494</b>  |
| 8:30               | 5                        | 18         | 0         | 26         | 23         | 0  | 2         | 0         | 21         | 2         | 0                        | 3          | 0        | 49         | 3          | 0  | 9         | 2         | 21         | 11        | 39         | 117         |
| 8:45               | 7                        | 27         | 1         | 24         | 35         | 1  | 0         | 1         | 24         | 2         | 0                        | 2          | 0        | 50         | 2          | 1  | 4         | 1         | 21         | 6         | 45         | 119         |
| 9:00               | 8                        | 16         | 0         | 21         | 24         | 0  | 1         | 0         | 17         | 1         | 0                        | 3          | 1        | 41         | 4          | 1  | 3         | 0         | 25         | 4         | 33         | 104         |
| 9:15               | 7                        | 14         | 1         | 20         | 22         | 0  | 1         | 2         | 19         | 3         | 0                        | 2          | 0        | 46         | 2          | 0  | 1         | 1         | 17         | 2         | 29         | 102         |
| <b>Total</b>       | <b>27</b>                | <b>75</b>  | <b>2</b>  | <b>91</b>  | <b>104</b> | <b>1</b>                                 | <b>4</b>  | <b>3</b>  | <b>81</b>  | <b>8</b>  | <b>0</b>                 | <b>10</b>  | <b>1</b> | <b>186</b> | <b>11</b>  | <b>2</b>                                 | <b>17</b> | <b>4</b>  | <b>84</b>  | <b>23</b> | <b>146</b> | <b>442</b>  |
| 16:00              | 1                        | 10         | 1         | 24         | 12         | 0  | 5         | 0         | 15         | 5         | 1                        | 7          | 0        | 36         | 8          | 1  | 0         | 0         | 37         | 1         | 26         | 112         |
| 16:15              | 2                        | 2          | 3         | 32         | 7          | 0  | 2         | 0         | 25         | 2         | 1                        | 12         | 1        | 44         | 14         | 0  | 0         | 0         | 46         | 0         | 23         | 147         |
| 16:30              | 0                        | 7          | 3         | 25         | 10         | 1  | 2         | 5         | 36         | 8         | 0                        | 9          | 0        | 36         | 9          | 1  | 0         | 1         | 38         | 2         | 29         | 135         |
| 16:45              | 0                        | 6          | 1         | 22         | 7          | 0  | 2         | 0         | 33         | 2         | 1                        | 10         | 0        | 39         | 11         | 0  | 2         | 0         | 31         | 2         | 22         | 125         |
| <b>Total</b>       | <b>3</b>                 | <b>25</b>  | <b>8</b>  | <b>103</b> | <b>36</b>  | <b>1</b>                                 | <b>11</b> | <b>5</b>  | <b>109</b> | <b>17</b> | <b>3</b>                 | <b>38</b>  | <b>1</b> | <b>155</b> | <b>42</b>  | <b>2</b>                                 | <b>2</b>  | <b>1</b>  | <b>152</b> | <b>5</b>  | <b>100</b> | <b>519</b>  |
| 17:00              | 3                        | 4          | 0         | 21         | 7          | 0  | 4         | 5         | 35         | 9         | 1                        | 15         | 1        | 35         | 17         | 5  | 3         | 0         | 24         | 8         | 41         | 115         |
| 17:15              | 1                        | 7          | 0         | 37         | 8          | 0  | 6         | 2         | 47         | 8         | 0                        | 16         | 0        | 32         | 16         | 2  | 1         | 0         | 30         | 3         | 35         | 146         |
| 17:30              | 1                        | 9          | 0         | 20         | 10         | 0  | 2         | 6         | 31         | 8         | 0                        | 23         | 0        | 37         | 23         | 0  | 2         | 1         | 29         | 3         | 44         | 117         |
| 17:45              | 1                        | 6          | 1         | 34         | 8          | 0  | 3         | 2         | 43         | 5         | 3                        | 13         | 1        | 41         | 17         | 0  | 0         | 1         | 35         | 1         | 31         | 153         |
| <b>Total</b>       | <b>6</b>                 | <b>26</b>  | <b>1</b>  | <b>112</b> | <b>33</b>  | <b>0</b>                                 | <b>15</b> | <b>15</b> | <b>156</b> | <b>30</b> | <b>4</b>                 | <b>67</b>  | <b>2</b> | <b>145</b> | <b>73</b>  | <b>7</b>                                 | <b>6</b>  | <b>2</b>  | <b>118</b> | <b>15</b> | <b>151</b> | <b>531</b>  |
| <b>Grand Total</b> | <b>49</b>                | <b>180</b> | <b>15</b> | <b>387</b> | <b>244</b> | <b>5</b>                                 | <b>37</b> | <b>24</b> | <b>450</b> | <b>66</b> | <b>9</b>                 | <b>122</b> | <b>7</b> | <b>707</b> | <b>138</b> | <b>15</b>                                | <b>38</b> | <b>14</b> | <b>442</b> | <b>67</b> | <b>515</b> | <b>1986</b> |
| Apprch %           | 20.1%                    | 73.8%      | 6.1%      |            |            | 7.6%                                     | 56.1%     | 36.4%     |            |           | 6.5%                     | 88.4%      | 5.1%     |            |            | 22.4%                                    | 56.7%     | 20.9%     |            |           |            |             |
| Total %            | 9.5%                     | 35.0%      | 2.9%      |            | 47.4%      | 1.0%                                     | 7.2%      | 4.7%      |            | 12.8%     | 1.7%                     | 23.7%      | 1.4%     |            | 26.8%      | 2.9%                                     | 7.4%      | 2.7%      |            | 13.0%     |            | 100.0%      |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | Thomas L Berkley Way (20th St) Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | Thomas L Berkley Way (20th St) Eastbound |       |       |      |           | Total |  |
|---|--------------------------|-------|-------|------|-----------|--|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|--|-------|-------|------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 07:45 to 08:45            |                          |       |       |      |           |  |       |       |      |           |                          |       |       |      |           |  |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |       |       |      |           |  |       |       |      |           |                          |       |       |      |           |  |       |       |      |           |       |  |
| 7:45  | 1                        | 10    | 2     | 21   | 13        | 0  | 2     | 1     | 27   | 3         | 1                        | 2     | 0     | 51   | 3         | 0  | 3     | 1     | 30   | 4         | 23    |  |
| 8:00  | 4                        | 18    | 0     | 27   | 22        | 1  | 3     | 0     | 31   | 4         | 0                        | 1     | 1     | 44   | 2         | 4  | 2     | 3     | 19   | 9         | 37    |  |
| 8:15  | 3                        | 15    | 0     | 15   | 18        | 2  | 1     | 0     | 27   | 3         | 1                        | 3     | 2     | 76   | 6         | 0  | 7     | 3     | 22   | 10        | 37    |  |
| 8:30  | 5                        | 18    | 0     | 26   | 23        | 0  | 2     | 0     | 21   | 2         | 0                        | 3     | 0     | 49   | 3         | 0  | 9     | 2     | 21   | 11        | 39    |  |
| Total Volume                                      | 13                       | 61    | 2     | 89   | 76        | 3  | 8     | 1     | 106  | 12        | 2                        | 9     | 3     | 220  | 14        | 4  | 21    | 9     | 92   | 34        | 136   |  |
| % App Total                                       | 17.1%                    | 80.3% | 2.6%  |      |           | 25.0%                                    | 66.7% | 8.3%  |      |           | 14.3%                    | 64.3% | 21.4% |      |           | 11.8%                                    | 61.8% | 26.5% |      |           |       |  |
| PHF   | .650                     | .847  | .250  |      | .826      | .375                                     | .667  | .250  |      | .750      | .500                     | .750  | .375  |      | .583      | .250                                     | .583  | .750  |      | .773      | .872  |  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | Thomas L Berkley Way (20th St) Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | Thomas L Berkley Way (20th St) Eastbound |       |       |      |           | Total |  |
|---|--------------------------|-------|-------|------|-----------|--|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|--|-------|-------|------|-----------|-------|--|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                                     | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                          |       |       |      |           |  |       |       |      |           |                          |       |       |      |           |  |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                          |       |       |      |           |  |       |       |      |           |                          |       |       |      |           |  |       |       |      |           |       |  |
| 17:00   | 3                        | 4     | 0     | 21   | 7         | 0  | 4     | 5     | 35   | 9         | 1                        | 15    | 1     | 35   | 17        | 5  | 3     | 0     | 24   | 8         | 41    |  |
| 17:15   | 1                        | 7     | 0     | 37   | 8         | 0  | 6     | 2     | 47   | 8         | 0                        | 16    | 0     | 32   | 16        | 2  | 1     | 0     | 30   | 3         | 35    |  |
| 17:30   | 1                        | 9     | 0     | 20   | 10        | 0  | 2     | 6     | 31   | 8         | 0                        | 23    | 0     | 37   | 23        | 0  | 2     | 1     | 29   | 3         | 44    |  |
| 17:45   | 1                        | 6     | 1     | 34   | 8         | 0  | 3     | 2     | 43   | 5         | 3                        | 13    | 1     | 41   | 17        | 0  | 0     | 1     | 35   | 1         | 31    |  |
| Total Volume                                      | 6                        | 26    | 1     | 112  | 33        | 0  | 15    | 15    | 156  | 30        | 4                        | 67    | 2     | 145  | 73        | 7  | 6     | 2     | 118  | 15        | 151   |  |
| % App Total                                       | 18.2%                    | 78.8% | 3.0%  |      |           | 0.0%                                     | 50.0% | 50.0% |      |           | 5.5%                     | 91.8% | 2.7%  |      |           | 46.7%                                    | 40.0% | 13.3% |      |           |       |  |
| PHF   | .500                     | .722  | .250  |      | .825      | .000                                     | .625  | .625  |      | .833      | .333                     | .728  | .500  |      | .793      | .350                                     | .500  | .500  |      | .469      | .858  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-009 Broadway & 20th St

Date : 5/26/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | Broadway Southbound |             |            |          |             | 20th St Westbound |            |            |          |             | Broadway Northbound |             |            |          |             | 20th St Eastbound |            |            |          |             | Total       | Uturns Total |
|--------------------|---------------------|-------------|------------|----------|-------------|-------------------|------------|------------|----------|-------------|---------------------|-------------|------------|----------|-------------|-------------------|------------|------------|----------|-------------|-------------|--------------|
|                    | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU       | RIGHT      | UTURNS   | APP.TOTAL   |             |              |
| 7:00               | 3                   | 31          | 10         | 0        | 44          | 6                 | 18         | 16         | 0        | 40          | 14                  | 39          | 7          | 0        | 60          | 1                 | 24         | 6          | 0        | 31          | 175         | 0            |
| 7:15               | 8                   | 50          | 4          | 0        | 62          | 9                 | 15         | 15         | 0        | 39          | 14                  | 52          | 7          | 0        | 73          | 2                 | 26         | 17         | 0        | 45          | 219         | 0            |
| 7:30               | 2                   | 55          | 12         | 0        | 69          | 7                 | 20         | 21         | 0        | 48          | 16                  | 67          | 6          | 0        | 89          | 4                 | 31         | 19         | 0        | 54          | 260         | 0            |
| 7:45               | 12                  | 62          | 12         | 0        | 86          | 13                | 29         | 22         | 0        | 64          | 15                  | 66          | 8          | 0        | 89          | 7                 | 40         | 16         | 0        | 63          | 302         | 0            |
| <b>Total</b>       | <b>25</b>           | <b>198</b>  | <b>38</b>  | <b>0</b> | <b>261</b>  | <b>35</b>         | <b>82</b>  | <b>74</b>  | <b>0</b> | <b>191</b>  | <b>59</b>           | <b>224</b>  | <b>28</b>  | <b>0</b> | <b>311</b>  | <b>14</b>         | <b>121</b> | <b>58</b>  | <b>0</b> | <b>193</b>  | <b>956</b>  | <b>0</b>     |
| 8:00               | 11                  | 73          | 13         | 0        | 97          | 9                 | 44         | 14         | 0        | 67          | 20                  | 70          | 18         | 0        | 108         | 7                 | 50         | 16         | 0        | 73          | 345         | 0            |
| 8:15               | 8                   | 89          | 11         | 0        | 108         | 13                | 31         | 13         | 0        | 57          | 18                  | 77          | 15         | 0        | 110         | 4                 | 68         | 16         | 0        | 88          | 363         | 0            |
| 8:30               | 4                   | 100         | 12         | 0        | 116         | 8                 | 28         | 27         | 0        | 63          | 12                  | 75          | 5          | 0        | 92          | 4                 | 57         | 14         | 0        | 75          | 346         | 0            |
| 8:45               | 13                  | 91          | 12         | 0        | 116         | 6                 | 35         | 22         | 0        | 63          | 11                  | 74          | 15         | 0        | 100         | 4                 | 52         | 14         | 0        | 70          | 349         | 0            |
| <b>Total</b>       | <b>36</b>           | <b>353</b>  | <b>48</b>  | <b>0</b> | <b>437</b>  | <b>36</b>         | <b>138</b> | <b>76</b>  | <b>0</b> | <b>250</b>  | <b>61</b>           | <b>296</b>  | <b>53</b>  | <b>0</b> | <b>410</b>  | <b>19</b>         | <b>227</b> | <b>60</b>  | <b>0</b> | <b>306</b>  | <b>1403</b> | <b>0</b>     |
| 16:00              | 8                   | 124         | 25         | 0        | 157         | 14                | 36         | 12         | 1        | 63          | 16                  | 117         | 13         | 0        | 146         | 4                 | 30         | 24         | 0        | 58          | 424         | 1            |
| 16:15              | 9                   | 108         | 12         | 0        | 129         | 11                | 47         | 10         | 0        | 68          | 23                  | 95          | 12         | 0        | 130         | 2                 | 45         | 25         | 0        | 72          | 399         | 0            |
| 16:30              | 7                   | 104         | 20         | 0        | 131         | 12                | 41         | 17         | 0        | 70          | 14                  | 84          | 14         | 0        | 112         | 6                 | 43         | 17         | 0        | 66          | 379         | 0            |
| 16:45              | 5                   | 125         | 17         | 0        | 147         | 12                | 38         | 10         | 0        | 60          | 19                  | 94          | 13         | 0        | 126         | 4                 | 38         | 18         | 0        | 60          | 393         | 0            |
| <b>Total</b>       | <b>29</b>           | <b>461</b>  | <b>74</b>  | <b>0</b> | <b>564</b>  | <b>49</b>         | <b>162</b> | <b>49</b>  | <b>1</b> | <b>261</b>  | <b>72</b>           | <b>390</b>  | <b>52</b>  | <b>0</b> | <b>514</b>  | <b>16</b>         | <b>156</b> | <b>84</b>  | <b>0</b> | <b>256</b>  | <b>1595</b> | <b>1</b>     |
| 17:00              | 11                  | 107         | 14         | 0        | 132         | 13                | 63         | 15         | 0        | 91          | 23                  | 123         | 15         | 1        | 162         | 5                 | 36         | 29         | 1        | 71          | 456         | 2            |
| 17:15              | 9                   | 112         | 20         | 1        | 142         | 16                | 46         | 10         | 0        | 72          | 14                  | 104         | 17         | 0        | 135         | 7                 | 62         | 20         | 0        | 89          | 438         | 1            |
| 17:30              | 17                  | 114         | 13         | 0        | 144         | 11                | 48         | 12         | 0        | 71          | 18                  | 106         | 13         | 0        | 137         | 11                | 55         | 23         | 0        | 89          | 441         | 0            |
| 17:45              | 11                  | 119         | 11         | 0        | 141         | 14                | 35         | 19         | 0        | 68          | 17                  | 81          | 18         | 0        | 116         | 5                 | 36         | 22         | 0        | 63          | 388         | 0            |
| <b>Total</b>       | <b>48</b>           | <b>452</b>  | <b>58</b>  | <b>1</b> | <b>559</b>  | <b>54</b>         | <b>192</b> | <b>56</b>  | <b>0</b> | <b>302</b>  | <b>72</b>           | <b>414</b>  | <b>63</b>  | <b>1</b> | <b>550</b>  | <b>28</b>         | <b>189</b> | <b>94</b>  | <b>1</b> | <b>312</b>  | <b>1723</b> | <b>3</b>     |
| <b>Grand Total</b> | <b>138</b>          | <b>1464</b> | <b>218</b> | <b>1</b> | <b>1821</b> | <b>174</b>        | <b>574</b> | <b>255</b> | <b>1</b> | <b>1004</b> | <b>264</b>          | <b>1324</b> | <b>196</b> | <b>1</b> | <b>1785</b> | <b>77</b>         | <b>693</b> | <b>296</b> | <b>1</b> | <b>1067</b> | <b>5677</b> | <b>4</b>     |
| Apprch %           | 7.6%                | 80.4%       | 12.0%      | 0.1%     |             | 17.3%             | 57.2%      | 25.4%      | 0.1%     |             | 14.8%               | 74.2%       | 11.0%      | 0.1%     |             | 7.2%              | 64.9%      | 27.7%      | 0.1%     |             |             |              |
| Total %            | 2.4%                | 25.8%       | 3.8%       | 0.0%     | 32.1%       | 3.1%              | 10.1%      | 4.5%       | 0.0%     | 17.7%       | 4.7%                | 23.3%       | 3.5%       | 0.0%     | 31.4%       | 1.4%              | 12.2%      | 5.2%       | 0.0%     | 18.8%       | 100.0%      |              |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 20th St Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 20th St Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| 8:00  | 11                  | 73    | 13    | 0      | 97        | 9                 | 44    | 14    | 0      | 67        | 20                  | 70    | 18    | 0      | 108       | 7                 | 50    | 16    | 0      | 73        | 345   |  |
| 8:15  | 8                   | 89    | 11    | 0      | 108       | 13                | 31    | 13    | 0      | 57        | 18                  | 77    | 15    | 0      | 110       | 4                 | 68    | 16    | 0      | 88        | 363   |  |
| 8:30  | 4                   | 100   | 12    | 0      | 116       | 8                 | 28    | 27    | 0      | 63        | 12                  | 75    | 5     | 0      | 92        | 4                 | 57    | 14    | 0      | 75        | 346   |  |
| 8:45  | 13                  | 91    | 12    | 0      | 116       | 6                 | 35    | 22    | 0      | 63        | 11                  | 74    | 15    | 0      | 100       | 4                 | 52    | 14    | 0      | 70        | 349   |  |
| Total Volume                                      | 36                  | 353   | 48    | 0      | 437       | 36                | 138   | 76    | 0      | 250       | 61                  | 296   | 53    | 0      | 410       | 19                | 227   | 60    | 0      | 306       | 1403  |  |
| % App Total                                       | 8.2%                | 80.8% | 11.0% | 0.0%   |           | 14.4%             | 55.2% | 30.4% | 0.0%   |           | 14.9%               | 72.2% | 12.9% | 0.0%   |           | 6.2%              | 74.2% | 19.6% | 0.0%   |           |       |  |
| PHF   | .692                | .883  | .923  | .000   | .942      | .692              | .784  | .704  | .000   | .933      | .763                | .961  | .736  | .000   | .932      | .679              | .835  | .938  | .000   | .869      | .966  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 20th St Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 20th St Eastbound |       |       |        |           | Total |  |
|---|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |       |       |        |           |       |  |
| 17:00   | 11                  | 107   | 14    | 0      | 132       | 13                | 63    | 15    | 0      | 91        | 23                  | 123   | 15    | 1      | 162       | 5                 | 36    | 29    | 1      | 71        | 456   |  |
| 17:15   | 9                   | 112   | 20    | 1      | 142       | 16                | 46    | 10    | 0      | 72        | 14                  | 104   | 17    | 0      | 135       | 7                 | 62    | 20    | 0      | 89        | 438   |  |
| 17:30   | 17                  | 114   | 13    | 0      | 144       | 11                | 48    | 12    | 0      | 71        | 18                  | 106   | 13    | 0      | 137       | 11                | 55    | 23    | 0      | 89        | 441   |  |
| 17:45   | 11                  | 119   | 11    | 0      | 141       | 14                | 35    | 19    | 0      | 68        | 17                  | 81    | 18    | 0      | 116       | 5                 | 36    | 22    | 0      | 63        | 388   |  |
| Total Volume                                      | 48                  | 452   | 58    | 1      | 559       | 54                | 192   | 56    | 0      | 302       | 72                  | 414   | 63    | 1      | 550       | 28                | 189   | 94    | 1      | 312       | 1723  |  |
| % App Total                                       | 8.6%                | 80.9% | 10.4% | 0.2%   |           | 17.9%             | 63.6% | 18.5% | 0.0%   |           | 13.1%               | 75.3% | 11.5% | 0.2%   |           | 9.0%              | 60.6% | 30.1% | 0.3%   |           |       |  |
| PHF   | .706                | .950  | .725  | .250   | .970      | .844              | .762  | .737  | .000   | .830      | .783                | .841  | .875  | .250   | .849      | .636              | .762  | .810  | .250   | .876      | .945  |  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-009 Broadway & 20th St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |           |            |            | 20th St Westbound |           |          |            |           | Broadway Northbound |            |           |            |            | 20th St Eastbound |           |           |             |           | Total      | Peds Total  |
|--------------------|---------------------|------------|-----------|------------|------------|-------------------|-----------|----------|------------|-----------|---------------------|------------|-----------|------------|------------|-------------------|-----------|-----------|-------------|-----------|------------|-------------|
|                    | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT              | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT              | THRU      | RIGHT     | PEDS        | APP.TOTAL |            |             |
| 7:00               | 0                   | 7          | 0         | 18         | 7          | 4                 | 1         | 0        | 18         | 5         | 0                   | 1          | 0         | 11         | 1          | 0                 | 0         | 2         | 45          | 2         | 15         | 92          |
| 7:15               | 0                   | 10         | 1         | 34         | 11         | 3                 | 0         | 0        | 26         | 3         | 0                   | 3          | 0         | 13         | 3          | 0                 | 2         | 2         | 39          | 4         | 21         | 112         |
| 7:30               | 0                   | 17         | 2         | 41         | 19         | 3                 | 2         | 0        | 28         | 5         | 0                   | 2          | 0         | 25         | 2          | 1                 | 1         | 2         | 60          | 4         | 30         | 154         |
| 7:45               | 1                   | 31         | 2         | 46         | 34         | 1                 | 0         | 0        | 34         | 1         | 1                   | 2          | 0         | 19         | 3          | 1                 | 4         | 2         | 83          | 7         | 45         | 182         |
| <b>Total</b>       | <b>1</b>            | <b>65</b>  | <b>5</b>  | <b>139</b> | <b>71</b>  | <b>11</b>         | <b>3</b>  | <b>0</b> | <b>106</b> | <b>14</b> | <b>1</b>            | <b>8</b>   | <b>0</b>  | <b>68</b>  | <b>9</b>   | <b>2</b>          | <b>7</b>  | <b>8</b>  | <b>227</b>  | <b>17</b> | <b>111</b> | <b>540</b>  |
| 8:00               | 0                   | 14         | 1         | 46         | 15         | 5                 | 6         | 1        | 49         | 12        | 0                   | 1          | 1         | 22         | 2          | 1                 | 1         | 1         | 78          | 3         | 32         | 195         |
| 8:15               | 1                   | 20         | 0         | 50         | 21         | 4                 | 0         | 0        | 37         | 4         | 0                   | 1          | 0         | 27         | 1          | 1                 | 4         | 7         | 93          | 12        | 38         | 207         |
| 8:30               | 3                   | 23         | 0         | 44         | 26         | 8                 | 0         | 0        | 90         | 8         | 1                   | 0          | 0         | 31         | 1          | 2                 | 2         | 1         | 113         | 5         | 40         | 278         |
| 8:45               | 2                   | 24         | 1         | 79         | 27         | 4                 | 1         | 0        | 72         | 5         | 1                   | 2          | 2         | 36         | 5          | 0                 | 4         | 4         | 97          | 8         | 45         | 284         |
| <b>Total</b>       | <b>6</b>            | <b>81</b>  | <b>2</b>  | <b>219</b> | <b>89</b>  | <b>21</b>         | <b>7</b>  | <b>1</b> | <b>248</b> | <b>29</b> | <b>2</b>            | <b>4</b>   | <b>3</b>  | <b>116</b> | <b>9</b>   | <b>4</b>          | <b>11</b> | <b>13</b> | <b>381</b>  | <b>28</b> | <b>155</b> | <b>964</b>  |
| 16:00              | 0                   | 14         | 1         | 47         | 15         | 0                 | 3         | 0        | 47         | 3         | 1                   | 7          | 0         | 24         | 8          | 0                 | 0         | 1         | 116         | 1         | 27         | 234         |
| 16:15              | 1                   | 3          | 2         | 35         | 6          | 0                 | 2         | 0        | 50         | 2         | 2                   | 9          | 0         | 39         | 11         | 0                 | 2         | 0         | 84          | 2         | 21         | 208         |
| 16:30              | 0                   | 9          | 1         | 52         | 10         | 2                 | 0         | 0        | 65         | 2         | 3                   | 10         | 3         | 33         | 16         | 1                 | 3         | 4         | 94          | 8         | 36         | 244         |
| 16:45              | 0                   | 9          | 1         | 54         | 10         | 2                 | 3         | 1        | 56         | 6         | 3                   | 13         | 2         | 30         | 18         | 1                 | 4         | 2         | 97          | 7         | 41         | 237         |
| <b>Total</b>       | <b>1</b>            | <b>35</b>  | <b>5</b>  | <b>188</b> | <b>41</b>  | <b>4</b>          | <b>8</b>  | <b>1</b> | <b>218</b> | <b>13</b> | <b>9</b>            | <b>39</b>  | <b>5</b>  | <b>126</b> | <b>53</b>  | <b>2</b>          | <b>9</b>  | <b>7</b>  | <b>391</b>  | <b>18</b> | <b>125</b> | <b>923</b>  |
| 17:00              | 0                   | 5          | 3         | 59         | 8          | 0                 | 7         | 1        | 66         | 8         | 3                   | 11         | 5         | 45         | 19         | 0                 | 3         | 0         | 112         | 3         | 38         | 282         |
| 17:15              | 0                   | 11         | 2         | 70         | 13         | 0                 | 8         | 1        | 74         | 9         | 3                   | 16         | 5         | 44         | 24         | 0                 | 4         | 1         | 138         | 5         | 51         | 326         |
| 17:30              | 3                   | 12         | 0         | 57         | 15         | 0                 | 4         | 1        | 67         | 5         | 1                   | 18         | 4         | 44         | 23         | 0                 | 3         | 3         | 104         | 6         | 49         | 272         |
| 17:45              | 1                   | 1          | 3         | 71         | 5          | 0                 | 8         | 1        | 66         | 9         | 1                   | 18         | 3         | 44         | 22         | 2                 | 0         | 0         | 118         | 2         | 38         | 299         |
| <b>Total</b>       | <b>4</b>            | <b>29</b>  | <b>8</b>  | <b>257</b> | <b>41</b>  | <b>0</b>          | <b>27</b> | <b>4</b> | <b>273</b> | <b>31</b> | <b>8</b>            | <b>63</b>  | <b>17</b> | <b>177</b> | <b>88</b>  | <b>2</b>          | <b>10</b> | <b>4</b>  | <b>472</b>  | <b>16</b> | <b>176</b> | <b>1179</b> |
| <b>Grand Total</b> | <b>12</b>           | <b>210</b> | <b>20</b> | <b>803</b> | <b>242</b> | <b>36</b>         | <b>45</b> | <b>6</b> | <b>845</b> | <b>87</b> | <b>20</b>           | <b>114</b> | <b>25</b> | <b>487</b> | <b>159</b> | <b>10</b>         | <b>37</b> | <b>32</b> | <b>1471</b> | <b>79</b> | <b>567</b> | <b>3606</b> |
| Apprch %           | 5.0%                | 86.8%      | 8.3%      |            |            | 41.4%             | 51.7%     | 6.9%     |            |           | 12.6%               | 71.7%      | 15.7%     |            |            | 12.7%             | 46.8%     | 40.5%     |             |           |            |             |
| Total %            | 2.1%                | 37.0%      | 3.5%      |            | 42.7%      | 6.3%              | 7.9%      | 1.1%     |            | 15.3%     | 3.5%                | 20.1%      | 4.4%      |            | 28.0%      | 1.8%              | 6.5%      | 5.6%      |             | 13.9%     |            | 100.0%      |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 20th St Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 20th St Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |  |
| 8:00  | 0                   | 14    | 1     | 46   | 15        | 5                 | 6     | 1     | 49   | 12        | 0                   | 1     | 1     | 22   | 2         | 1                 | 1     | 1     | 78   | 3         | 32    |  |
| 8:15  | 1                   | 20    | 0     | 50   | 21        | 4                 | 0     | 0     | 37   | 4         | 0                   | 1     | 0     | 27   | 1         | 1                 | 4     | 7     | 93   | 12        | 38    |  |
| 8:30  | 3                   | 23    | 0     | 44   | 26        | 8                 | 0     | 0     | 90   | 8         | 1                   | 0     | 0     | 31   | 1         | 2                 | 2     | 1     | 113  | 5         | 40    |  |
| 8:45  | 2                   | 24    | 1     | 79   | 27        | 4                 | 1     | 0     | 72   | 5         | 1                   | 2     | 2     | 36   | 5         | 0                 | 4     | 4     | 97   | 8         | 45    |  |
| Total Volume                                      | 6                   | 81    | 2     | 219  | 89        | 21                | 7     | 1     | 248  | 29        | 2                   | 4     | 3     | 116  | 9         | 4                 | 11    | 13    | 381  | 28        | 155   |  |
| % App Total                                       | 6.7%                | 91.0% | 2.2%  |      |           | 72.4%             | 24.1% | 3.4%  |      |           | 22.2%               | 44.4% | 33.3% |      |           | 14.3%             | 39.3% | 46.4% |      |           |       |  |
| PHF   | .500                | .844  | .500  |      | .824      | .656              | .292  | .250  |      | .604      | .500                | .500  | .375  |      | .450      | .500              | .688  | .464  |      | .583      | .861  |  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 20th St Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 20th St Eastbound |       |       |      |           | Total |  |
|---|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|--|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |  |
| Peak Hour Analysis From 17:00 to 18:00            |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |  |
| Peak Hour For Entire Intersection Begins at 17:00 |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |  |
| 17:00   | 0                   | 5     | 3     | 59   | 8         | 0                 | 7     | 1     | 66   | 8         | 3                   | 11    | 5     | 45   | 19        | 0                 | 3     | 0     | 112  | 3         | 38    |  |
| 17:15   | 0                   | 11    | 2     | 70   | 13        | 0                 | 8     | 1     | 74   | 9         | 3                   | 16    | 5     | 44   | 24        | 0                 | 4     | 1     | 138  | 5         | 51    |  |
| 17:30   | 3                   | 12    | 0     | 57   | 15        | 0                 | 4     | 1     | 67   | 5         | 1                   | 18    | 4     | 44   | 23        | 0                 | 3     | 3     | 104  | 6         | 49    |  |
| 17:45   | 1                   | 1     | 3     | 71   | 5         | 0                 | 8     | 1     | 66   | 9         | 1                   | 18    | 3     | 44   | 22        | 2                 | 0     | 0     | 118  | 2         | 38    |  |
| Total Volume                                      | 4                   | 29    | 8     | 257  | 41        | 0                 | 27    | 4     | 273  | 31        | 8                   | 63    | 17    | 177  | 88        | 2                 | 10    | 4     | 472  | 16        | 176   |  |
| % App Total                                       | 9.8%                | 70.7% | 19.5% |      |           | 0.0%              | 87.1% | 12.9% |      |           | 9.1%                | 71.6% | 19.3% |      |           | 12.5%             | 62.5% | 25.0% |      |           |       |  |
| PHF   | .333                | .604  | .667  |      | .683      | .000              | .844  | 1.000 |      | .861      | .667                | .875  | .850  |      | .917      | .250              | .625  | .333  |      | .667      | .863  |  |



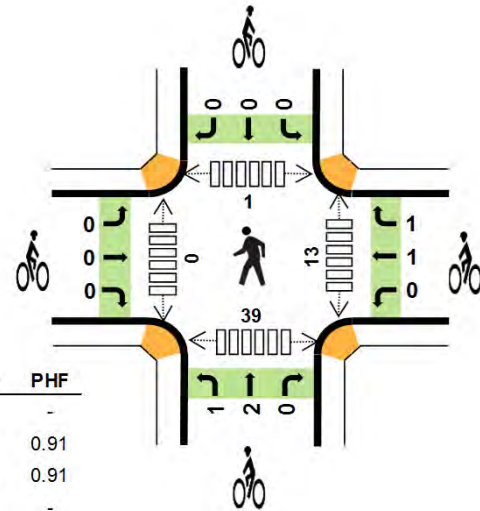
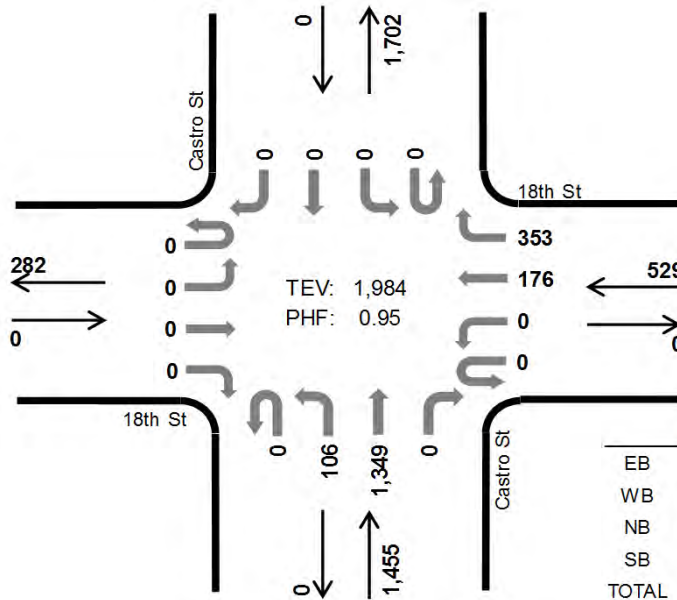


# Castro St 18th St



Peak Hour

Date: 04/29/2015  
 Count Period: 4:00 PM to 7:00 PM  
 Peak Hour: 4:30 PM to 5:30 PM



|       | HV %: | PHF  |
|-------|-------|------|
| EB    | -     | -    |
| WB    | 0.8%  | 0.91 |
| NB    | 1.4%  | 0.91 |
| SB    | -     | -    |
| TOTAL | 1.2%  | 0.95 |

## Three-Hour Count Summaries

| Interval Start | 18th St Eastbound |    |    |    | 18th St Westbound |    |    |     | Castro St Northbound |    |     |       | Castro St Southbound |    |    |    | 15-min Total | Rolling One Hour |   |
|----------------|-------------------|----|----|----|-------------------|----|----|-----|----------------------|----|-----|-------|----------------------|----|----|----|--------------|------------------|---|
|                | UT                | LT | TH | RT | UT                | LT | TH | RT  | UT                   | LT | TH  | RT    | UT                   | LT | TH | RT |              |                  |   |
| 4:30 PM        | 0                 | 0  | 0  | 0  | 0                 | 0  | 47 | 98  | 0                    | 24 | 333 | 0     | 0                    | 0  | 0  | 0  | 502          | 0                |   |
| 4:45 PM        | 0                 | 0  | 0  | 0  | 0                 | 0  | 45 | 81  | 0                    | 26 | 313 | 0     | 0                    | 0  | 0  | 0  | 465          | 0                |   |
| 5:00 PM        | 0                 | 0  | 0  | 0  | 0                 | 0  | 37 | 86  | 0                    | 31 | 368 | 0     | 0                    | 0  | 0  | 0  | 522          | 0                |   |
| 5:15 PM        | 0                 | 0  | 0  | 0  | 0                 | 0  | 47 | 88  | 0                    | 25 | 335 | 0     | 0                    | 0  | 0  | 0  | 495          | 1,984            |   |
| Peak Hour      | All               | 0  | 0  | 0  | 0                 | 0  | 0  | 176 | 353                  | 0  | 106 | 1,349 | 0                    | 0  | 0  | 0  | 0            | 1,984            | 0 |
|                | HV                | 0  | 0  | 0  | 0                 | 0  | 0  | 2   | 2                    | 0  | 5   | 15    | 0                    | 0  | 0  | 0  | 0            | 24               | 0 |
|                | HV%               | -  | -  | -  | -                 | -  | -  | 1%  | 1%                   | -  | 5%  | 1%    | -                    | -  | -  | -  | -            | 1%               | 0 |

Note: For all three-hour count summary, see next page.

| Interval Start | Heavy Vehicle Totals |    |    |    |       | Bicycles |    |    |    |       | Pedestrians (Crossing Leg) |      |       |       |       |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
|                | EB                   | WB | NB | SB | Total | EB       | WB | NB | SB | Total | East                       | West | North | South | Total |
| 4:30 PM        | 0                    | 0  | 7  | 0  | 7     | 0        | 0  | 0  | 0  | 0     | 2                          | 0    | 0     | 9     | 11    |
| 4:45 PM        | 0                    | 3  | 6  | 0  | 9     | 0        | 2  | 1  | 0  | 3     | 4                          | 0    | 1     | 9     | 14    |
| 5:00 PM        | 0                    | 0  | 4  | 0  | 4     | 0        | 0  | 2  | 0  | 2     | 7                          | 0    | 0     | 12    | 19    |
| 5:15 PM        | 0                    | 1  | 3  | 0  | 4     | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 0     | 9     | 9     |
| Peak Hour      | 0                    | 4  | 20 | 0  | 24    | 0        | 2  | 3  | 0  | 5     | 13                         | 0    | 1     | 39    | 53    |



# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-017 Martin Luther King Jr Way & 18th St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Martin Luther King Jr Way Southbound |           |           |           |           | 18th St Westbound |           |          |           |           | Martin Luther King Jr Way Northbound |           |          |            |           | 18th St Eastbound |          |          |           |           | Total     | Peds Total |
|--------------------|--------------------------------------|-----------|-----------|-----------|-----------|-------------------|-----------|----------|-----------|-----------|--------------------------------------|-----------|----------|------------|-----------|-------------------|----------|----------|-----------|-----------|-----------|------------|
|                    | LEFT                                 | THRU      | RIGHT     | PEDS      | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT                                 | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS      | APP.TOTAL |           |            |
| 7:00               | 0                                    | 0         | 0         | 1         | 0         | 0                 | 1         | 0        | 2         | 1         | 0                                    | 0         | 0        | 5          | 0         | 0                 | 0        | 0        | 3         | 0         | 1         | 11         |
| 7:15               | 0                                    | 1         | 0         | 1         | 1         | 0                 | 0         | 0        | 1         | 0         | 0                                    | 2         | 0        | 2          | 0         | 0                 | 0        | 0        | 6         | 0         | 3         | 10         |
| 7:30               | 0                                    | 1         | 1         | 2         | 2         | 0                 | 0         | 0        | 3         | 0         | 0                                    | 0         | 0        | 10         | 0         | 0                 | 0        | 0        | 3         | 0         | 2         | 18         |
| 7:45               | 0                                    | 3         | 1         | 2         | 4         | 0                 | 1         | 0        | 8         | 1         | 0                                    | 1         | 0        | 5          | 1         | 0                 | 0        | 0        | 7         | 0         | 6         | 22         |
| <b>Total</b>       | <b>0</b>                             | <b>5</b>  | <b>2</b>  | <b>6</b>  | <b>7</b>  | <b>0</b>          | <b>2</b>  | <b>0</b> | <b>14</b> | <b>2</b>  | <b>0</b>                             | <b>3</b>  | <b>0</b> | <b>22</b>  | <b>3</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>19</b> | <b>0</b>  | <b>12</b> | <b>61</b>  |
| 8:00               | 0                                    | 0         | 0         | 3         | 0         | 0                 | 0         | 0        | 2         | 0         | 0                                    | 0         | 0        | 7          | 0         | 0                 | 0        | 0        | 8         | 0         | 0         | 20         |
| 8:15               | 0                                    | 2         | 0         | 1         | 2         | 0                 | 2         | 0        | 2         | 2         | 0                                    | 2         | 0        | 7          | 2         | 0                 | 0        | 1        | 4         | 1         | 7         | 14         |
| 8:30               | 0                                    | 4         | 0         | 4         | 4         | 0                 | 1         | 0        | 6         | 1         | 0                                    | 2         | 0        | 4          | 2         | 0                 | 0        | 0        | 4         | 0         | 7         | 18         |
| 8:45               | 0                                    | 4         | 0         | 5         | 4         | 1                 | 0         | 0        | 4         | 1         | 0                                    | 1         | 0        | 9          | 1         | 0                 | 0        | 0        | 9         | 0         | 6         | 27         |
| <b>Total</b>       | <b>0</b>                             | <b>10</b> | <b>0</b>  | <b>13</b> | <b>10</b> | <b>1</b>          | <b>3</b>  | <b>0</b> | <b>14</b> | <b>4</b>  | <b>0</b>                             | <b>5</b>  | <b>0</b> | <b>27</b>  | <b>5</b>  | <b>0</b>          | <b>0</b> | <b>1</b> | <b>25</b> | <b>1</b>  | <b>20</b> | <b>79</b>  |
| 16:00              | 0                                    | 0         | 0         | 3         | 0         | 0                 | 1         | 0        | 6         | 1         | 0                                    | 0         | 0        | 2          | 0         | 0                 | 0        | 0        | 3         | 0         | 1         | 14         |
| 16:15              | 0                                    | 0         | 1         | 4         | 1         | 0                 | 0         | 0        | 2         | 0         | 0                                    | 0         | 0        | 8          | 0         | 0                 | 0        | 0        | 9         | 0         | 1         | 23         |
| 16:30              | 0                                    | 0         | 1         | 3         | 1         | 0                 | 0         | 0        | 4         | 0         | 0                                    | 0         | 0        | 6          | 0         | 2                 | 0        | 0        | 4         | 2         | 3         | 17         |
| 16:45              | 0                                    | 0         | 5         | 2         | 5         | 0                 | 0         | 0        | 1         | 0         | 0                                    | 2         | 1        | 11         | 3         | 0                 | 1        | 0        | 7         | 1         | 9         | 21         |
| <b>Total</b>       | <b>0</b>                             | <b>0</b>  | <b>7</b>  | <b>12</b> | <b>7</b>  | <b>0</b>          | <b>1</b>  | <b>0</b> | <b>13</b> | <b>1</b>  | <b>0</b>                             | <b>2</b>  | <b>1</b> | <b>27</b>  | <b>3</b>  | <b>2</b>          | <b>1</b> | <b>0</b> | <b>23</b> | <b>3</b>  | <b>14</b> | <b>75</b>  |
| 17:00              | 0                                    | 2         | 1         | 4         | 3         | 0                 | 1         | 0        | 6         | 1         | 0                                    | 5         | 0        | 7          | 5         | 0                 | 0        | 0        | 9         | 0         | 9         | 26         |
| 17:15              | 0                                    | 1         | 0         | 4         | 1         | 0                 | 2         | 0        | 3         | 2         | 0                                    | 1         | 0        | 4          | 1         | 0                 | 0        | 0        | 4         | 0         | 4         | 15         |
| 17:30              | 0                                    | 3         | 0         | 5         | 3         | 0                 | 0         | 0        | 8         | 0         | 0                                    | 2         | 0        | 10         | 2         | 0                 | 0        | 0        | 7         | 0         | 5         | 30         |
| 17:45              | 0                                    | 1         | 0         | 2         | 1         | 0                 | 3         | 0        | 0         | 3         | 1                                    | 4         | 0        | 5          | 5         | 0                 | 0        | 0        | 4         | 0         | 9         | 11         |
| <b>Total</b>       | <b>0</b>                             | <b>7</b>  | <b>1</b>  | <b>15</b> | <b>8</b>  | <b>0</b>          | <b>6</b>  | <b>0</b> | <b>17</b> | <b>6</b>  | <b>1</b>                             | <b>12</b> | <b>0</b> | <b>26</b>  | <b>13</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>24</b> | <b>0</b>  | <b>27</b> | <b>82</b>  |
| <b>Grand Total</b> | <b>0</b>                             | <b>22</b> | <b>10</b> | <b>46</b> | <b>32</b> | <b>1</b>          | <b>12</b> | <b>0</b> | <b>58</b> | <b>13</b> | <b>1</b>                             | <b>22</b> | <b>1</b> | <b>102</b> | <b>24</b> | <b>2</b>          | <b>1</b> | <b>1</b> | <b>91</b> | <b>4</b>  | <b>73</b> | <b>297</b> |
| Apprch %           | 0.0%                                 | 68.8%     | 31.3%     |           |           | 7.7%              | 92.3%     | 0.0%     |           |           | 4.2%                                 | 91.7%     | 4.2%     |            |           | 50.0%             | 25.0%    | 25.0%    |           |           |           |            |
| Total %            | 0.0%                                 | 30.1%     | 13.7%     |           | 43.8%     | 1.4%              | 16.4%     | 0.0%     |           | 17.8%     | 1.4%                                 | 30.1%     | 1.4%     |            | 32.9%     | 2.7%              | 1.4%     | 1.4%     |           | 5.5%      |           | 100.0%     |

| AM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |        |       |      |           | 18th St Westbound |       |       |      |           | Martin Luther King Jr Way Northbound |        |       |      |           | 18th St Eastbound |      |        |      |           | Total |
|---|--------------------------------------|--------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------------------|--------|-------|------|-----------|-------------------|------|--------|------|-----------|-------|
| START TIME  | LEFT                                 | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                                 | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT  | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 08:00 to 09:00            |                                      |        |       |      |           |                   |       |       |      |           |                                      |        |       |      |           |                   |      |        |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                                      |        |       |      |           |                   |       |       |      |           |                                      |        |       |      |           |                   |      |        |      |           |       |
| 8:00  | 0                                    | 0      | 0     | 3    | 0         | 0                 | 0     | 0     | 2    | 0         | 0                                    | 0      | 0     | 7    | 0         | 0                 | 0    | 0      | 8    | 0         | 0     |
| 8:15  | 0                                    | 2      | 0     | 1    | 2         | 0                 | 2     | 0     | 2    | 2         | 0                                    | 2      | 0     | 7    | 2         | 0                 | 0    | 1      | 4    | 1         | 7     |
| 8:30  | 0                                    | 4      | 0     | 4    | 4         | 0                 | 1     | 0     | 6    | 1         | 0                                    | 2      | 0     | 4    | 2         | 0                 | 0    | 0      | 4    | 0         | 7     |
| 8:45  | 0                                    | 4      | 0     | 5    | 4         | 1                 | 0     | 0     | 4    | 1         | 0                                    | 1      | 0     | 9    | 1         | 0                 | 0    | 0      | 9    | 0         | 6     |
| Total Volume                                      | 0                                    | 10     | 0     | 13   | 10        | 1                 | 3     | 0     | 14   | 4         | 0                                    | 5      | 0     | 27   | 5         | 0                 | 0    | 1      | 25   | 1         | 20    |
| % App Total                                       | 0.0%                                 | 100.0% | 0.0%  |      |           | 25.0%             | 75.0% | 0.0%  |      |           | 0.0%                                 | 100.0% | 0.0%  |      |           | 0.0%              | 0.0% | 100.0% |      |           |       |
| PHF   | .000                                 | .625   | .000  |      | .625      | .250              | .375  | .000  |      | .500      | .000                                 | .625   | .000  |      | .625      | .000              | .000 | .250   |      | .250      | .714  |

| PM PEAK HOUR                                      | Martin Luther King Jr Way Southbound |       |       |      |           | 18th St Westbound |        |       |      |           | Martin Luther King Jr Way Northbound |       |       |      |           | 18th St Eastbound |       |       |      |           | Total |
|---|--------------------------------------|-------|-------|------|-----------|-------------------|--------|-------|------|-----------|--------------------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
| START TIME  | LEFT                                 | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU   | RIGHT | PEDS | APP.TOTAL | LEFT                                 | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | Total |
| Peak Hour Analysis From 16:15 to 17:15            |                                      |       |       |      |           |                   |        |       |      |           |                                      |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:15 |                                      |       |       |      |           |                   |        |       |      |           |                                      |       |       |      |           |                   |       |       |      |           |       |
| 16:15   | 0                                    | 0     | 1     | 4    | 1         | 0                 | 0      | 0     | 2    | 0         | 0                                    | 0     | 0     | 8    | 0         | 0                 | 0     | 0     | 9    | 0         | 1     |
| 16:30   | 0                                    | 0     | 1     | 3    | 1         | 0                 | 0      | 0     | 4    | 0         | 0                                    | 0     | 0     | 6    | 0         | 2                 | 0     | 0     | 4    | 2         | 3     |
| 16:45   | 0                                    | 0     | 5     | 2    | 5         | 0                 | 0      | 0     | 1    | 0         | 0                                    | 2     | 1     | 11   | 3         | 0                 | 1     | 0     | 7    | 1         | 9     |
| 17:00   | 0                                    | 2     | 1     | 4    | 3         | 0                 | 1      | 0     | 6    | 1         | 0                                    | 5     | 0     | 7    | 5         | 0                 | 0     | 0     | 9    | 0         | 9     |
| Total Volume                                      | 0                                    | 2     | 8     | 13   | 10        | 0                 | 1      | 0     | 13   | 1         | 0                                    | 7     | 1     | 32   | 8         | 2                 | 1     | 0     | 29   | 3         | 22    |
| % App Total                                       | 0.0%                                 | 20.0% | 80.0% |      |           | 0.0%              | 100.0% | 0.0%  |      |           | 0.0%                                 | 87.5% | 12.5% |      |           | 66.7%             | 33.3% | 0.0%  |      |           |       |
| PHF   | .000                                 | .250  | .400  |      | .500      | .000              | .250   | .000  |      | .250      | .000                                 | .350  | .250  |      | .400      | .250              | .250  | .000  |      | .375      | .611  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-032 San Pablo Ave & 19th St

Date : 5/26/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | San Pablo Ave Southbound |            |           |           |            | 19th St Westbound |            |            |          |             | San Pablo Ave Northbound |            |          |          |            | 19th St Eastbound |          |          |          |           | Total       | Utturns Total |
|--------------------|--------------------------|------------|-----------|-----------|------------|-------------------|------------|------------|----------|-------------|--------------------------|------------|----------|----------|------------|-------------------|----------|----------|----------|-----------|-------------|---------------|
|                    | LEFT                     | THRU       | RIGHT     | UTURNS    | APP.TOTAL  | LEFT              | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                     | THRU       | RIGHT    | UTURNS   | APP.TOTAL  | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL |             |               |
| 7:00               | 0                        | 24         | 0         | 0         | 24         | 2                 | 16         | 5          | 0        | 23          | 1                        | 7          | 0        | 1        | 9          | 0                 | 0        | 0        | 0        | 0         | 56          | 1             |
| 7:15               | 0                        | 22         | 1         | 0         | 23         | 3                 | 21         | 8          | 0        | 32          | 1                        | 15         | 0        | 0        | 16         | 0                 | 0        | 0        | 0        | 0         | 71          | 0             |
| 7:30               | 0                        | 37         | 4         | 1         | 42         | 5                 | 33         | 7          | 0        | 45          | 1                        | 7          | 0        | 0        | 8          | 0                 | 0        | 0        | 0        | 0         | 95          | 1             |
| 7:45               | 0                        | 66         | 4         | 0         | 70         | 14                | 62         | 20         | 0        | 96          | 3                        | 14         | 0        | 0        | 17         | 0                 | 0        | 0        | 0        | 0         | 183         | 0             |
| <b>Total</b>       | <b>0</b>                 | <b>149</b> | <b>9</b>  | <b>1</b>  | <b>159</b> | <b>24</b>         | <b>132</b> | <b>40</b>  | <b>0</b> | <b>196</b>  | <b>6</b>                 | <b>43</b>  | <b>0</b> | <b>1</b> | <b>50</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>405</b>  | <b>2</b>      |
| 8:00               | 0                        | 42         | 5         | 2         | 49         | 19                | 99         | 17         | 0        | 135         | 0                        | 20         | 0        | 0        | 20         | 0                 | 0        | 0        | 0        | 0         | 204         | 2             |
| 8:15               | 0                        | 47         | 5         | 0         | 52         | 8                 | 58         | 16         | 0        | 82          | 3                        | 20         | 0        | 0        | 23         | 0                 | 0        | 0        | 0        | 0         | 157         | 0             |
| 8:30               | 0                        | 48         | 8         | 1         | 57         | 9                 | 46         | 10         | 0        | 65          | 2                        | 21         | 0        | 0        | 23         | 0                 | 0        | 0        | 0        | 0         | 145         | 1             |
| 8:45               | 0                        | 60         | 5         | 2         | 67         | 7                 | 28         | 11         | 0        | 46          | 7                        | 16         | 0        | 0        | 23         | 0                 | 0        | 0        | 0        | 0         | 136         | 2             |
| <b>Total</b>       | <b>0</b>                 | <b>197</b> | <b>23</b> | <b>5</b>  | <b>225</b> | <b>43</b>         | <b>231</b> | <b>54</b>  | <b>0</b> | <b>328</b>  | <b>12</b>                | <b>77</b>  | <b>0</b> | <b>0</b> | <b>89</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>642</b>  | <b>5</b>      |
| 16:00              | 0                        | 45         | 8         | 0         | 53         | 11                | 79         | 20         | 0        | 110         | 5                        | 38         | 0        | 0        | 43         | 0                 | 0        | 0        | 0        | 0         | 206         | 0             |
| 16:15              | 0                        | 60         | 4         | 4         | 68         | 12                | 105        | 32         | 0        | 149         | 5                        | 41         | 0        | 1        | 47         | 0                 | 0        | 0        | 0        | 0         | 264         | 5             |
| 16:30              | 0                        | 62         | 7         | 1         | 70         | 14                | 68         | 29         | 0        | 111         | 8                        | 39         | 0        | 0        | 47         | 0                 | 0        | 0        | 0        | 0         | 228         | 1             |
| 16:45              | 0                        | 71         | 3         | 1         | 75         | 14                | 71         | 26         | 0        | 111         | 1                        | 37         | 0        | 0        | 38         | 0                 | 0        | 0        | 0        | 0         | 224         | 1             |
| <b>Total</b>       | <b>0</b>                 | <b>238</b> | <b>22</b> | <b>6</b>  | <b>266</b> | <b>51</b>         | <b>323</b> | <b>107</b> | <b>0</b> | <b>481</b>  | <b>19</b>                | <b>155</b> | <b>0</b> | <b>1</b> | <b>175</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>922</b>  | <b>7</b>      |
| 17:00              | 0                        | 73         | 12        | 1         | 86         | 6                 | 89         | 45         | 0        | 140         | 6                        | 56         | 0        | 0        | 62         | 0                 | 0        | 0        | 0        | 0         | 288         | 1             |
| 17:15              | 0                        | 72         | 7         | 2         | 81         | 15                | 54         | 39         | 0        | 108         | 9                        | 53         | 0        | 0        | 62         | 0                 | 0        | 0        | 0        | 0         | 251         | 2             |
| 17:30              | 0                        | 60         | 3         | 1         | 64         | 17                | 48         | 34         | 0        | 99          | 5                        | 42         | 0        | 0        | 47         | 0                 | 0        | 0        | 0        | 0         | 210         | 1             |
| 17:45              | 0                        | 57         | 5         | 0         | 62         | 15                | 64         | 23         | 0        | 102         | 10                       | 36         | 0        | 0        | 46         | 0                 | 0        | 0        | 0        | 0         | 210         | 0             |
| <b>Total</b>       | <b>0</b>                 | <b>262</b> | <b>27</b> | <b>4</b>  | <b>293</b> | <b>53</b>         | <b>255</b> | <b>141</b> | <b>0</b> | <b>449</b>  | <b>30</b>                | <b>187</b> | <b>0</b> | <b>0</b> | <b>217</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>959</b>  | <b>4</b>      |
| <b>Grand Total</b> | <b>0</b>                 | <b>846</b> | <b>81</b> | <b>16</b> | <b>943</b> | <b>171</b>        | <b>941</b> | <b>342</b> | <b>0</b> | <b>1454</b> | <b>67</b>                | <b>462</b> | <b>0</b> | <b>2</b> | <b>531</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>2928</b> | <b>18</b>     |
| Apprch %           | 0.0%                     | 89.7%      | 8.6%      | 1.7%      |            | 11.8%             | 64.7%      | 23.5%      | 0.0%     |             | 12.6%                    | 87.0%      | 0.0%     | 0.4%     |            | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      |             |               |
| Total %            | 0.0%                     | 28.9%      | 2.8%      | 0.5%      | 32.2%      | 5.8%              | 32.1%      | 11.7%      | 0.0%     | 49.7%       | 2.3%                     | 15.8%      | 0.0%     | 0.1%     | 18.1%      | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 100.0%      |               |

| AM PEAK HOUR                                      | San Pablo Ave Southbound |       |       |        |           | 19th St Westbound |       |       |        |           | San Pablo Ave Northbound |       |       |        |           | 19th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 7:45  | 0                        | 66    | 4     | 0      | 70        | 14                | 62    | 20    | 0      | 96        | 3                        | 14    | 0     | 0      | 17        | 0                 | 0    | 0     | 0      | 0         | 183   |
| 8:00  | 0                        | 42    | 5     | 2      | 49        | 19                | 99    | 17    | 0      | 135       | 0                        | 20    | 0     | 0      | 20        | 0                 | 0    | 0     | 0      | 0         | 204   |
| 8:15  | 0                        | 47    | 5     | 0      | 52        | 8                 | 58    | 16    | 0      | 82        | 3                        | 20    | 0     | 0      | 23        | 0                 | 0    | 0     | 0      | 0         | 157   |
| 8:30  | 0                        | 48    | 8     | 1      | 57        | 9                 | 46    | 10    | 0      | 65        | 2                        | 21    | 0     | 0      | 23        | 0                 | 0    | 0     | 0      | 0         | 145   |
| Total Volume                                      | 0                        | 203   | 22    | 3      | 228       | 50                | 265   | 63    | 0      | 378       | 8                        | 75    | 0     | 0      | 83        | 0                 | 0    | 0     | 0      | 0         | 689   |
| % App Total                                       | 0.0%                     | 89.0% | 9.6%  | 1.3%   |           | 13.2%             | 70.1% | 16.7% | 0.0%   |           | 9.6%                     | 90.4% | 0.0%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .000                     | .769  | .688  | .375   | .814      | .658              | .669  | .788  | .000   | .700      | .667                     | .893  | .000  | .000   | .902      | .000              | .000 | .000  | .000   | .000      | .844  |

| PM PEAK HOUR                                      | San Pablo Ave Southbound |       |       |        |           | 19th St Westbound |       |       |        |           | San Pablo Ave Northbound |       |       |        |           | 19th St Eastbound |      |       |        |           | Total |
|---|--------------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|--------------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 16:15 to 17:15            |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 16:15 |                          |       |       |        |           |                   |       |       |        |           |                          |       |       |        |           |                   |      |       |        |           |       |
| 16:15   | 0                        | 60    | 4     | 4      | 68        | 12                | 105   | 32    | 0      | 149       | 5                        | 41    | 0     | 1      | 47        | 0                 | 0    | 0     | 0      | 0         | 264   |
| 16:30   | 0                        | 62    | 7     | 1      | 70        | 14                | 68    | 29    | 0      | 111       | 8                        | 39    | 0     | 0      | 47        | 0                 | 0    | 0     | 0      | 0         | 228   |
| 16:45   | 0                        | 71    | 3     | 1      | 75        | 14                | 71    | 26    | 0      | 111       | 1                        | 37    | 0     | 0      | 38        | 0                 | 0    | 0     | 0      | 0         | 224   |
| 17:00   | 0                        | 73    | 12    | 1      | 86        | 6                 | 89    | 45    | 0      | 140       | 6                        | 56    | 0     | 0      | 62        | 0                 | 0    | 0     | 0      | 0         | 288   |
| Total Volume                                      | 0                        | 266   | 26    | 7      | 299       | 46                | 333   | 132   | 0      | 511       | 20                       | 173   | 0     | 1      | 194       | 0                 | 0    | 0     | 0      | 0         | 1004  |
| % App Total                                       | 0.0%                     | 89.0% | 8.7%  | 2.3%   |           | 9.0%              | 65.2% | 25.8% | 0.0%   |           | 10.3%                    | 89.2% | 0.0%  | 0.5%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .000                     | .911  | .542  | .438   | .869      | .821              | .793  | .733  | .000   | .857      | .625                     | .772  | .000  | .250   | .782      | .000              | .000 | .000  | .000   | .000      | .872  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Turns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-032 San Pablo Ave & 19th St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | San Pablo Ave Southbound |            |          |            |            | 19th St Westbound |           |           |            |           | San Pablo Ave Northbound |           |          |           |           | 19th St Eastbound |          |          |            |           | Total      | Peds Total |
|--------------------|--------------------------|------------|----------|------------|------------|-------------------|-----------|-----------|------------|-----------|--------------------------|-----------|----------|-----------|-----------|-------------------|----------|----------|------------|-----------|------------|------------|
|                    | LEFT                     | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT              | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                     | THRU      | RIGHT    | PEDS      | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |            |
| 7:00               | 0                        | 3          | 0        | 1          | 3          | 0                 | 1         | 0         | 5          | 1         | 0                        | 3         | 0        | 1         | 3         | 0                 | 0        | 0        | 3          | 0         | 7          | 10         |
| 7:15               | 0                        | 7          | 0        | 3          | 7          | 0                 | 0         | 0         | 3          | 0         | 0                        | 2         | 0        | 1         | 2         | 0                 | 0        | 0        | 5          | 0         | 9          | 12         |
| 7:30               | 0                        | 3          | 0        | 4          | 3          | 0                 | 1         | 0         | 10         | 1         | 0                        | 0         | 0        | 6         | 0         | 0                 | 0        | 0        | 6          | 0         | 4          | 26         |
| 7:45               | 1                        | 9          | 0        | 8          | 10         | 1                 | 1         | 1         | 10         | 3         | 0                        | 1         | 0        | 2         | 1         | 0                 | 0        | 0        | 3          | 0         | 14         | 23         |
| <b>Total</b>       | <b>1</b>                 | <b>22</b>  | <b>0</b> | <b>16</b>  | <b>23</b>  | <b>1</b>          | <b>3</b>  | <b>1</b>  | <b>28</b>  | <b>5</b>  | <b>0</b>                 | <b>6</b>  | <b>0</b> | <b>10</b> | <b>6</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>17</b>  | <b>0</b>  | <b>34</b>  | <b>71</b>  |
| 8:00               | 0                        | 9          | 0        | 14         | 9          | 1                 | 0         | 0         | 6          | 1         | 0                        | 2         | 0        | 1         | 2         | 0                 | 0        | 0        | 4          | 0         | 12         | 25         |
| 8:15               | 0                        | 15         | 0        | 8          | 15         | 2                 | 2         | 0         | 10         | 4         | 1                        | 1         | 0        | 1         | 2         | 0                 | 0        | 0        | 5          | 0         | 21         | 24         |
| 8:30               | 0                        | 15         | 0        | 5          | 15         | 1                 | 1         | 0         | 16         | 2         | 0                        | 3         | 0        | 4         | 3         | 0                 | 0        | 0        | 8          | 0         | 20         | 33         |
| 8:45               | 0                        | 17         | 0        | 3          | 17         | 2                 | 1         | 0         | 20         | 3         | 0                        | 2         | 0        | 11        | 2         | 0                 | 0        | 0        | 7          | 0         | 22         | 41         |
| <b>Total</b>       | <b>0</b>                 | <b>56</b>  | <b>0</b> | <b>30</b>  | <b>56</b>  | <b>6</b>          | <b>4</b>  | <b>0</b>  | <b>52</b>  | <b>10</b> | <b>1</b>                 | <b>8</b>  | <b>0</b> | <b>17</b> | <b>9</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>24</b>  | <b>0</b>  | <b>75</b>  | <b>123</b> |
| 16:00              | 0                        | 0          | 0        | 4          | 0          | 0                 | 1         | 0         | 14         | 1         | 0                        | 11        | 0        | 8         | 11        | 0                 | 0        | 1        | 5          | 1         | 13         | 31         |
| 16:15              | 1                        | 3          | 0        | 16         | 4          | 0                 | 0         | 2         | 18         | 2         | 0                        | 2         | 0        | 3         | 2         | 0                 | 0        | 0        | 6          | 0         | 8          | 43         |
| 16:30              | 0                        | 2          | 0        | 15         | 2          | 0                 | 0         | 1         | 16         | 1         | 0                        | 11        | 1        | 9         | 12        | 0                 | 0        | 0        | 10         | 0         | 15         | 50         |
| 16:45              | 0                        | 5          | 0        | 16         | 5          | 0                 | 0         | 1         | 16         | 1         | 0                        | 9         | 2        | 3         | 11        | 0                 | 0        | 0        | 12         | 0         | 17         | 47         |
| <b>Total</b>       | <b>1</b>                 | <b>10</b>  | <b>0</b> | <b>51</b>  | <b>11</b>  | <b>0</b>          | <b>1</b>  | <b>4</b>  | <b>64</b>  | <b>5</b>  | <b>0</b>                 | <b>33</b> | <b>3</b> | <b>23</b> | <b>36</b> | <b>0</b>          | <b>0</b> | <b>1</b> | <b>33</b>  | <b>1</b>  | <b>53</b>  | <b>171</b> |
| 17:00              | 0                        | 2          | 0        | 18         | 2          | 0                 | 1         | 3         | 14         | 4         | 0                        | 12        | 0        | 4         | 12        | 0                 | 0        | 0        | 5          | 0         | 18         | 41         |
| 17:15              | 0                        | 6          | 0        | 8          | 6          | 0                 | 1         | 2         | 16         | 3         | 0                        | 8         | 0        | 4         | 8         | 0                 | 0        | 0        | 12         | 0         | 17         | 40         |
| 17:30              | 0                        | 2          | 0        | 20         | 2          | 0                 | 0         | 1         | 9          | 1         | 0                        | 12        | 0        | 6         | 12        | 0                 | 0        | 0        | 2          | 0         | 15         | 37         |
| 17:45              | 0                        | 3          | 0        | 8          | 3          | 0                 | 3         | 5         | 17         | 8         | 0                        | 9         | 0        | 6         | 9         | 0                 | 0        | 0        | 10         | 0         | 20         | 41         |
| <b>Total</b>       | <b>0</b>                 | <b>13</b>  | <b>0</b> | <b>54</b>  | <b>13</b>  | <b>0</b>          | <b>5</b>  | <b>11</b> | <b>56</b>  | <b>16</b> | <b>0</b>                 | <b>41</b> | <b>0</b> | <b>20</b> | <b>41</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>29</b>  | <b>0</b>  | <b>70</b>  | <b>159</b> |
| <b>Grand Total</b> | <b>2</b>                 | <b>101</b> | <b>0</b> | <b>151</b> | <b>103</b> | <b>7</b>          | <b>13</b> | <b>16</b> | <b>200</b> | <b>36</b> | <b>1</b>                 | <b>88</b> | <b>3</b> | <b>70</b> | <b>92</b> | <b>0</b>          | <b>0</b> | <b>1</b> | <b>103</b> | <b>1</b>  | <b>232</b> | <b>524</b> |
| Apprch %           | 1.9%                     | 98.1%      | 0.0%     |            |            | 19.4%             | 36.1%     | 44.4%     |            |           | 1.1%                     | 95.7%     | 3.3%     |           |           | 0.0%              | 0.0%     | 100.0%   |            |           |            |            |
| Total %            | 0.9%                     | 43.5%      | 0.0%     |            | 44.4%      | 3.0%              | 5.6%      | 6.9%      |            | 15.5%     | 0.4%                     | 37.9%     | 1.3%     |           | 39.7%     | 0.0%              | 0.0%     | 0.4%     |            | 0.4%      | 100.0%     |            |

| AM PEAK HOUR                                      | San Pablo Ave Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | San Pablo Ave Northbound |       |       |      |           | 19th St Eastbound |      |       |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| 7:45  | 1                        | 9     | 0     | 8    | 10        | 1                 | 1     | 1     | 10   | 3         | 0                        | 1     | 0     | 2    | 1         | 0                 | 0    | 0     | 3    | 0         | 14    |
| 8:00  | 0                        | 9     | 0     | 14   | 9         | 1                 | 0     | 0     | 6    | 1         | 0                        | 2     | 0     | 1    | 2         | 0                 | 0    | 0     | 4    | 0         | 12    |
| 8:15  | 0                        | 15    | 0     | 8    | 15        | 2                 | 2     | 0     | 10   | 4         | 1                        | 1     | 0     | 1    | 2         | 0                 | 0    | 0     | 5    | 0         | 21    |
| 8:30  | 0                        | 15    | 0     | 5    | 15        | 1                 | 1     | 0     | 16   | 2         | 0                        | 3     | 0     | 4    | 3         | 0                 | 0    | 0     | 8    | 0         | 20    |
| Total Volume                                      | 1                        | 48    | 0     | 35   | 49        | 5                 | 4     | 1     | 42   | 10        | 1                        | 7     | 0     | 8    | 8         | 0                 | 0    | 0     | 20   | 0         | 67    |
| % App Total                                       | 2.0%                     | 98.0% | 0.0%  |      |           | 50.0%             | 40.0% | 10.0% |      |           | 12.5%                    | 87.5% | 0.0%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           |       |
| PHF   | .250                     | .800  | .000  |      | .817      | .625              | .500  | .250  |      | .625      | .250                     | .583  | .000  |      | .667      | .000              | .000 | .000  |      | .000      | .798  |

| PM PEAK HOUR                                      | San Pablo Ave Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | San Pablo Ave Northbound |       |       |      |           | 19th St Eastbound |      |       |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|------|-------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:15 to 17:15            |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:15 |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |      |       |      |           |       |
| 16:15   | 1                        | 3     | 0     | 16   | 4         | 0                 | 0     | 2     | 18   | 2         | 0                        | 2     | 0     | 3    | 2         | 0                 | 0    | 0     | 6    | 0         | 8     |
| 16:30   | 0                        | 2     | 0     | 15   | 2         | 0                 | 0     | 1     | 16   | 1         | 0                        | 11    | 1     | 9    | 12        | 0                 | 0    | 0     | 10   | 0         | 15    |
| 16:45   | 0                        | 5     | 0     | 16   | 5         | 0                 | 0     | 1     | 16   | 1         | 0                        | 9     | 2     | 3    | 11        | 0                 | 0    | 0     | 12   | 0         | 17    |
| 17:00   | 0                        | 2     | 0     | 18   | 2         | 0                 | 1     | 3     | 14   | 4         | 0                        | 12    | 0     | 4    | 12        | 0                 | 0    | 0     | 5    | 0         | 18    |
| Total Volume                                      | 1                        | 12    | 0     | 65   | 13        | 0                 | 1     | 7     | 64   | 8         | 0                        | 34    | 3     | 19   | 37        | 0                 | 0    | 0     | 33   | 0         | 58    |
| % App Total                                       | 7.7%                     | 92.3% | 0.0%  |      |           | 0.0%              | 12.5% | 87.5% |      |           | 0.0%                     | 91.9% | 8.1%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           |       |
| PHF   | .250                     | .600  | .000  |      | .650      | .000              | .250  | .583  |      | .500      | .000                     | .708  | .375  |      | .771      | .000              | .000 | .000  |      | .000      | .806  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Uturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-132 San Pablo Ave & 19th St

Date : 5/26/2016

## Unshifted Count = All Vehicles & Uturns

| START TIME         | San Pablo Ave Southbound |            |          |          |            | 19th St Westbound |          |          |          |           | San Pablo Ave Northbound |          |          |          |           | 19th St Eastbound |            |           |          |            | Total      | Uturns Total |
|--------------------|--------------------------|------------|----------|----------|------------|-------------------|----------|----------|----------|-----------|--------------------------|----------|----------|----------|-----------|-------------------|------------|-----------|----------|------------|------------|--------------|
|                    | LEFT                     | THRU       | RIGHT    | UTURNS   | APP.TOTAL  | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT                     | THRU     | RIGHT    | UTURNS   | APP.TOTAL | LEFT              | THRU       | RIGHT     | UTURNS   | APP.TOTAL  |            |              |
| 7:00               | 0                        | 3          | 0        | 0        | 3          | 4                 | 0        | 0        | 0        | 4         | 0                        | 0        | 0        | 0        | 0         | 2                 | 3          | 0         | 0        | 5          | 12         | 0            |
| 7:15               | 0                        | 9          | 0        | 0        | 9          | 2                 | 0        | 0        | 0        | 2         | 0                        | 0        | 0        | 0        | 0         | 3                 | 9          | 1         | 0        | 13         | 24         | 0            |
| 7:30               | 0                        | 3          | 0        | 0        | 3          | 4                 | 0        | 0        | 0        | 4         | 0                        | 0        | 0        | 0        | 0         | 3                 | 11         | 0         | 0        | 14         | 21         | 0            |
| 7:45               | 0                        | 5          | 0        | 0        | 5          | 5                 | 0        | 0        | 0        | 5         | 0                        | 0        | 0        | 0        | 0         | 4                 | 15         | 1         | 0        | 20         | 30         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>20</b>  | <b>0</b> | <b>0</b> | <b>20</b>  | <b>15</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>15</b> | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>12</b>         | <b>38</b>  | <b>2</b>  | <b>0</b> | <b>52</b>  | <b>87</b>  | <b>0</b>     |
| 8:00               | 0                        | 11         | 0        | 0        | 11         | 8                 | 0        | 0        | 0        | 8         | 1                        | 0        | 0        | 0        | 1         | 2                 | 15         | 0         | 0        | 17         | 37         | 0            |
| 8:15               | 0                        | 16         | 0        | 0        | 16         | 3                 | 0        | 0        | 0        | 3         | 1                        | 0        | 0        | 0        | 1         | 2                 | 16         | 1         | 0        | 19         | 39         | 0            |
| 8:30               | 0                        | 8          | 0        | 0        | 8          | 5                 | 0        | 0        | 0        | 5         | 0                        | 0        | 0        | 0        | 0         | 4                 | 14         | 1         | 0        | 19         | 32         | 0            |
| 8:45               | 0                        | 11         | 0        | 0        | 11         | 2                 | 0        | 0        | 0        | 2         | 2                        | 0        | 0        | 0        | 2         | 5                 | 8          | 0         | 0        | 13         | 28         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>46</b>  | <b>0</b> | <b>0</b> | <b>46</b>  | <b>18</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>18</b> | <b>4</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>4</b>  | <b>13</b>         | <b>53</b>  | <b>2</b>  | <b>0</b> | <b>68</b>  | <b>136</b> | <b>0</b>     |
| 16:00              | 0                        | 12         | 0        | 0        | 12         | 3                 | 0        | 0        | 0        | 3         | 0                        | 0        | 0        | 0        | 0         | 3                 | 28         | 1         | 0        | 32         | 47         | 0            |
| 16:15              | 0                        | 9          | 0        | 0        | 9          | 7                 | 0        | 0        | 0        | 7         | 0                        | 0        | 0        | 0        | 0         | 5                 | 27         | 3         | 0        | 35         | 51         | 0            |
| 16:30              | 0                        | 8          | 0        | 0        | 8          | 4                 | 0        | 0        | 0        | 4         | 1                        | 0        | 0        | 0        | 1         | 4                 | 24         | 1         | 0        | 29         | 42         | 0            |
| 16:45              | 0                        | 4          | 0        | 0        | 4          | 7                 | 0        | 0        | 0        | 7         | 1                        | 0        | 0        | 0        | 1         | 5                 | 29         | 2         | 0        | 36         | 48         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>33</b>  | <b>0</b> | <b>0</b> | <b>33</b>  | <b>21</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>21</b> | <b>2</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b>  | <b>17</b>         | <b>108</b> | <b>7</b>  | <b>0</b> | <b>132</b> | <b>188</b> | <b>0</b>     |
| 17:00              | 0                        | 10         | 0        | 0        | 10         | 7                 | 0        | 0        | 0        | 7         | 1                        | 0        | 0        | 0        | 1         | 6                 | 39         | 2         | 0        | 47         | 65         | 0            |
| 17:15              | 0                        | 21         | 0        | 0        | 21         | 5                 | 0        | 0        | 0        | 5         | 1                        | 0        | 0        | 0        | 1         | 4                 | 28         | 0         | 0        | 32         | 59         | 0            |
| 17:30              | 0                        | 9          | 0        | 0        | 9          | 9                 | 0        | 0        | 0        | 9         | 0                        | 0        | 0        | 0        | 0         | 3                 | 19         | 1         | 0        | 23         | 41         | 0            |
| 17:45              | 0                        | 16         | 0        | 0        | 16         | 5                 | 0        | 0        | 0        | 5         | 9                        | 0        | 0        | 0        | 9         | 3                 | 15         | 1         | 0        | 19         | 49         | 0            |
| <b>Total</b>       | <b>0</b>                 | <b>56</b>  | <b>0</b> | <b>0</b> | <b>56</b>  | <b>26</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>26</b> | <b>11</b>                | <b>0</b> | <b>0</b> | <b>0</b> | <b>11</b> | <b>16</b>         | <b>101</b> | <b>4</b>  | <b>0</b> | <b>121</b> | <b>214</b> | <b>0</b>     |
| <b>Grand Total</b> | <b>0</b>                 | <b>155</b> | <b>0</b> | <b>0</b> | <b>155</b> | <b>80</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>80</b> | <b>17</b>                | <b>0</b> | <b>0</b> | <b>0</b> | <b>17</b> | <b>58</b>         | <b>300</b> | <b>15</b> | <b>0</b> | <b>373</b> | <b>625</b> | <b>0</b>     |
| Apprch %           | 0.0%                     | 100.0%     | 0.0%     | 0.0%     |            | 100.0%            | 0.0%     | 0.0%     | 0.0%     |           | 100.0%                   | 0.0%     | 0.0%     | 0.0%     |           | 15.5%             | 80.4%      | 4.0%      | 0.0%     |            |            |              |
| Total %            | 0.0%                     | 24.8%      | 0.0%     | 0.0%     | 24.8%      | 12.8%             | 0.0%     | 0.0%     | 0.0%     | 12.8%     | 2.7%                     | 0.0%     | 0.0%     | 0.0%     | 2.7%      | 9.3%              | 48.0%      | 2.4%      | 0.0%     | 59.7%      | 100.0%     |              |

| AM PEAK HOUR                                      | San Pablo Ave Southbound |        |       |        |           | 19th St Westbound |      |       |        |           | San Pablo Ave Northbound |      |       |        |           | 19th St Eastbound |       |       |        |           | Total |
|---|--------------------------|--------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU   | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |        |       |        |           |                   |      |       |        |           |                          |      |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |        |       |        |           |                   |      |       |        |           |                          |      |       |        |           |                   |       |       |        |           |       |
| 7:45  | 0                        | 5      | 0     | 0      | 5         | 5                 | 0    | 0     | 0      | 5         | 0                        | 0    | 0     | 0      | 0         | 4                 | 15    | 1     | 0      | 20        | 30    |
| 8:00  | 0                        | 11     | 0     | 0      | 11        | 8                 | 0    | 0     | 0      | 8         | 1                        | 0    | 0     | 0      | 1         | 2                 | 15    | 0     | 0      | 17        | 37    |
| 8:15  | 0                        | 16     | 0     | 0      | 16        | 3                 | 0    | 0     | 0      | 3         | 1                        | 0    | 0     | 0      | 1         | 2                 | 16    | 1     | 0      | 19        | 39    |
| 8:30  | 0                        | 8      | 0     | 0      | 8         | 5                 | 0    | 0     | 0      | 5         | 0                        | 0    | 0     | 0      | 0         | 4                 | 14    | 1     | 0      | 19        | 32    |
| Total Volume                                      | 0                        | 40     | 0     | 0      | 40        | 21                | 0    | 0     | 0      | 21        | 2                        | 0    | 0     | 0      | 2         | 12                | 60    | 3     | 0      | 75        | 138   |
| % App Total                                       | 0.0%                     | 100.0% | 0.0%  | 0.0%   |           | 100.0%            | 0.0% | 0.0%  | 0.0%   |           | 100.0%                   | 0.0% | 0.0%  | 0.0%   |           | 16.0%             | 80.0% | 4.0%  | 0.0%   |           |       |
| PHF   | .000                     | .625   | .000  | .000   | .625      | .656              | .000 | .000  | .000   | .656      | .500                     | .000 | .000  | .000   | .500      | .750              | .938  | .750  | .000   | .938      | .885  |

| PM PEAK HOUR                                      | San Pablo Ave Southbound |        |       |        |           | 19th St Westbound |      |       |        |           | San Pablo Ave Northbound |      |       |        |           | 19th St Eastbound |       |       |        |           | Total |
|---|--------------------------|--------|-------|--------|-----------|-------------------|------|-------|--------|-----------|--------------------------|------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|-------|
|   | LEFT                     | THRU   | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT                     | THRU | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 16:30 to 17:30            |                          |        |       |        |           |                   |      |       |        |           |                          |      |       |        |           |                   |       |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 16:30 |                          |        |       |        |           |                   |      |       |        |           |                          |      |       |        |           |                   |       |       |        |           |       |
| 16:30   | 0                        | 8      | 0     | 0      | 8         | 4                 | 0    | 0     | 0      | 4         | 1                        | 0    | 0     | 0      | 1         | 4                 | 24    | 1     | 0      | 29        | 42    |
| 16:45   | 0                        | 4      | 0     | 0      | 4         | 7                 | 0    | 0     | 0      | 7         | 1                        | 0    | 0     | 0      | 1         | 5                 | 29    | 2     | 0      | 36        | 48    |
| 17:00   | 0                        | 10     | 0     | 0      | 10        | 7                 | 0    | 0     | 0      | 7         | 1                        | 0    | 0     | 0      | 1         | 6                 | 39    | 2     | 0      | 47        | 65    |
| 17:15   | 0                        | 21     | 0     | 0      | 21        | 5                 | 0    | 0     | 0      | 5         | 1                        | 0    | 0     | 0      | 1         | 4                 | 28    | 0     | 0      | 32        | 59    |
| Total Volume                                      | 0                        | 43     | 0     | 0      | 43        | 23                | 0    | 0     | 0      | 23        | 4                        | 0    | 0     | 0      | 4         | 19                | 120   | 5     | 0      | 144       | 214   |
| % App Total                                       | 0.0%                     | 100.0% | 0.0%  | 0.0%   |           | 100.0%            | 0.0% | 0.0%  | 0.0%   |           | 100.0%                   | 0.0% | 0.0%  | 0.0%   |           | 13.2%             | 83.3% | 3.5%  | 0.0%   |           |       |
| PHF   | .000                     | .512   | .000  | .000   | .512      | .821              | .000 | .000  | .000   | .821      | 1.000                    | .000 | .000  | .000   | 1.000     | .792              | .769  | .625  | .000   | .766      | .823  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-132 San Pablo Ave & 19th St

Date : 5/26/2016

### Bank 1 Count = Bikes & Peds

| START TIME         | San Pablo Ave Southbound |          |          |          |           | 19th St Westbound |          |          |          |           | San Pablo Ave Northbound |          |          |          |           | 19th St Eastbound |           |          |            |           | Total     | Peds Total |
|--------------------|--------------------------|----------|----------|----------|-----------|-------------------|----------|----------|----------|-----------|--------------------------|----------|----------|----------|-----------|-------------------|-----------|----------|------------|-----------|-----------|------------|
|                    | LEFT                     | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT                     | THRU     | RIGHT    | PEDS     | APP.TOTAL | LEFT              | THRU      | RIGHT    | PEDS       | APP.TOTAL |           |            |
| 7:00               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 1        | 2          | 1         | 1         | 2          |
| 7:15               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 0        | 6          | 0         | 0         | 6          |
| 7:30               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 0        | 12         | 0         | 0         | 12         |
| 7:45               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 0        | 2          | 0         | 0         | 2          |
| <b>Total</b>       | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>0</b>  | <b>1</b> | <b>22</b>  | <b>1</b>  | <b>1</b>  | <b>22</b>  |
| 8:00               | 0                        | 0        | 0        | 0        | 0         | 1                 | 0        | 0        | 0        | 1         | 0                        | 0        | 0        | 0        | 0         | 0                 | 2         | 1        | 4          | 3         | 4         | 4          |
| 8:15               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 1        | 5          | 1         | 1         | 5          |
| 8:30               | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 0        | 8          | 0         | 0         | 8          |
| 8:45               | 2                        | 0        | 0        | 0        | 2         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 1        | 10         | 1         | 3         | 10         |
| <b>Total</b>       | <b>2</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b>  | <b>1</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b>  | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>2</b>  | <b>3</b> | <b>27</b>  | <b>5</b>  | <b>8</b>  | <b>27</b>  |
| 16:00              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 2         | 0        | 5          | 2         | 2         | 5          |
| 16:15              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 0         | 1        | 4          | 1         | 1         | 4          |
| 16:30              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 1         | 0        | 7          | 1         | 1         | 7          |
| 16:45              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 2         | 0        | 8          | 2         | 2         | 8          |
| <b>Total</b>       | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>          | <b>5</b>  | <b>1</b> | <b>24</b>  | <b>6</b>  | <b>6</b>  | <b>24</b>  |
| 17:00              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 1         | 0        | 13         | 1         | 1         | 13         |
| 17:15              | 1                        | 0        | 0        | 0        | 1         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 1                 | 1         | 0        | 10         | 2         | 3         | 10         |
| 17:30              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 2         | 1        | 2          | 3         | 3         | 2          |
| 17:45              | 0                        | 0        | 0        | 0        | 0         | 0                 | 0        | 0        | 0        | 0         | 0                        | 0        | 0        | 0        | 0         | 0                 | 2         | 0        | 8          | 2         | 2         | 8          |
| <b>Total</b>       | <b>1</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>          | <b>6</b>  | <b>1</b> | <b>33</b>  | <b>8</b>  | <b>9</b>  | <b>33</b>  |
| <b>Grand Total</b> | <b>3</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>3</b>  | <b>1</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b>  | <b>0</b>                 | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1</b>          | <b>13</b> | <b>6</b> | <b>106</b> | <b>20</b> | <b>24</b> | <b>106</b> |
| Apprch %           | 100.0%                   | 0.0%     | 0.0%     |          |           | 100.0%            | 0.0%     | 0.0%     |          |           | 0.0%                     | 0.0%     | 0.0%     |          |           | 5.0%              | 65.0%     | 30.0%    |            |           |           |            |
| Total %            | 12.5%                    | 0.0%     | 0.0%     |          | 12.5%     | 4.2%              | 0.0%     | 0.0%     |          | 4.2%      | 0.0%                     | 0.0%     | 0.0%     |          | 0.0%      | 4.2%              | 54.2%     | 25.0%    |            | 83.3%     | 100.0%    |            |

| AM PEAK HOUR                                      | San Pablo Ave Southbound |      |       |      |           | 19th St Westbound |      |       |      |           | San Pablo Ave Northbound |      |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|--------------------------|------|-------|------|-----------|-------------------|------|-------|------|-----------|--------------------------|------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                     | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |      |       |      |           |                   |      |       |      |           |                          |      |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |      |       |      |           |                   |      |       |      |           |                          |      |       |      |           |                   |       |       |      |           |       |
| 7:45  | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 0     | 0     | 2    | 0         | 0     |
| 8:00  | 0                        | 0    | 0     | 0    | 0         | 1                 | 0    | 0     | 0    | 1         | 0                        | 0    | 0     | 0    | 0         | 0                 | 2     | 1     | 4    | 3         | 4     |
| 8:15  | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 0     | 1     | 5    | 1         | 1     |
| 8:30  | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 0     | 0     | 8    | 0         | 0     |
| Total Volume                                      | 0                        | 0    | 0     | 0    | 0         | 1                 | 0    | 0     | 0    | 1         | 0                        | 0    | 0     | 0    | 0         | 0                 | 2     | 2     | 19   | 4         | 5     |
| % App Total                                       | 0.0%                     | 0.0% | 0.0%  |      |           | 100.0%            | 0.0% | 0.0%  |      |           | 0.0%                     | 0.0% | 0.0%  |      |           | 0.0%              | 50.0% | 50.0% |      |           |       |
| PHF   | .000                     | .000 | .000  |      | .000      | .250              | .000 | .000  |      | .250      | .000                     | .000 | .000  |      | .000      | .250              | .500  |       | .333 | .313      |       |

| PM PEAK HOUR                                      | San Pablo Ave Southbound |      |       |      |           | 19th St Westbound |      |       |      |           | San Pablo Ave Northbound |      |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|--------------------------|------|-------|------|-----------|-------------------|------|-------|------|-----------|--------------------------|------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                     | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:30 to 17:30            |                          |      |       |      |           |                   |      |       |      |           |                          |      |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:30 |                          |      |       |      |           |                   |      |       |      |           |                          |      |       |      |           |                   |       |       |      |           |       |
| 16:30   | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 1     | 0     | 7    | 1         | 1     |
| 16:45   | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 2     | 0     | 8    | 2         | 2     |
| 17:00   | 0                        | 0    | 0     | 0    | 0         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 0                 | 1     | 0     | 13   | 1         | 1     |
| 17:15   | 1                        | 0    | 0     | 0    | 1         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 1                 | 1     | 0     | 10   | 2         | 3     |
| Total Volume                                      | 1                        | 0    | 0     | 0    | 1         | 0                 | 0    | 0     | 0    | 0         | 0                        | 0    | 0     | 0    | 0         | 1                 | 5     | 0     | 38   | 6         | 7     |
| % App Total                                       | 100.0%                   | 0.0% | 0.0%  |      |           | 0.0%              | 0.0% | 0.0%  |      |           | 0.0%                     | 0.0% | 0.0%  |      |           | 16.7%             | 83.3% | 0.0%  |      |           |       |
| PHF   | .250                     | .000 | .000  |      | .250      | .000              | .000 | .000  |      | .000      | .000                     | .000 | .000  |      | .000      | .250              | .625  | .000  | .750 | .583      |       |





# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-015 Telegraph Ave & 19th St

Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Telegraph Ave Southbound |            |           |            |            | 19th St Westbound |           |           |            |           | Telegraph Ave Northbound |           |          |            |           | 19th St Eastbound |          |          |            |           | Total      | Peds Total  |
|--------------------|--------------------------|------------|-----------|------------|------------|-------------------|-----------|-----------|------------|-----------|--------------------------|-----------|----------|------------|-----------|-------------------|----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                     | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT              | THRU      | RIGHT     | PEDS       | APP.TOTAL | LEFT                     | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 0                        | 3          | 0         | 3          | 3          | 0                 | 1         | 0         | 3          | 1         | 1                        | 3         | 0        | 10         | 4         | 0                 | 0        | 0        | 3          | 0         | 8          | 19          |
| 7:15               | 2                        | 4          | 0         | 4          | 6          | 0                 | 0         | 0         | 5          | 0         | 0                        | 0         | 0        | 9          | 0         | 0                 | 0        | 0        | 7          | 0         | 6          | 25          |
| 7:30               | 0                        | 5          | 0         | 4          | 5          | 1                 | 0         | 6         | 7          | 7         | 0                        | 0         | 0        | 20         | 0         | 0                 | 0        | 0        | 13         | 0         | 12         | 44          |
| 7:45               | 0                        | 7          | 1         | 6          | 8          | 4                 | 2         | 1         | 13         | 7         | 0                        | 2         | 0        | 33         | 2         | 0                 | 1        | 0        | 9          | 1         | 18         | 61          |
| <b>Total</b>       | <b>2</b>                 | <b>19</b>  | <b>1</b>  | <b>17</b>  | <b>22</b>  | <b>5</b>          | <b>3</b>  | <b>7</b>  | <b>28</b>  | <b>15</b> | <b>1</b>                 | <b>5</b>  | <b>0</b> | <b>72</b>  | <b>6</b>  | <b>0</b>          | <b>1</b> | <b>0</b> | <b>32</b>  | <b>1</b>  | <b>44</b>  | <b>149</b>  |
| 8:00               | 2                        | 13         | 0         | 5          | 15         | 1                 | 1         | 0         | 13         | 2         | 0                        | 0         | 0        | 55         | 0         | 0                 | 0        | 0        | 20         | 0         | 17         | 93          |
| 8:15               | 2                        | 8          | 2         | 5          | 12         | 1                 | 1         | 1         | 12         | 3         | 0                        | 1         | 0        | 27         | 1         | 1                 | 0        | 0        | 13         | 1         | 17         | 57          |
| 8:30               | 1                        | 11         | 1         | 5          | 13         | 1                 | 1         | 0         | 6          | 2         | 1                        | 3         | 0        | 19         | 4         | 0                 | 0        | 0        | 15         | 0         | 19         | 45          |
| 8:45               | 1                        | 17         | 3         | 6          | 21         | 5                 | 0         | 1         | 9          | 6         | 0                        | 0         | 0        | 31         | 0         | 0                 | 0        | 0        | 23         | 0         | 27         | 69          |
| <b>Total</b>       | <b>6</b>                 | <b>49</b>  | <b>6</b>  | <b>21</b>  | <b>61</b>  | <b>8</b>          | <b>3</b>  | <b>2</b>  | <b>40</b>  | <b>13</b> | <b>1</b>                 | <b>4</b>  | <b>0</b> | <b>132</b> | <b>5</b>  | <b>1</b>          | <b>0</b> | <b>0</b> | <b>71</b>  | <b>1</b>  | <b>80</b>  | <b>264</b>  |
| 16:00              | 0                        | 4          | 0         | 13         | 4          | 0                 | 1         | 5         | 15         | 6         | 0                        | 2         | 0        | 40         | 2         | 0                 | 0        | 0        | 43         | 0         | 12         | 111         |
| 16:15              | 0                        | 2          | 1         | 4          | 3          | 0                 | 2         | 6         | 26         | 8         | 0                        | 6         | 0        | 118        | 6         | 0                 | 1        | 0        | 41         | 1         | 18         | 189         |
| 16:30              | 0                        | 3          | 1         | 9          | 4          | 0                 | 1         | 3         | 26         | 4         | 0                        | 4         | 0        | 24         | 4         | 0                 | 0        | 0        | 32         | 0         | 12         | 91          |
| 16:45              | 1                        | 3          | 0         | 15         | 4          | 1                 | 1         | 2         | 33         | 4         | 0                        | 9         | 0        | 31         | 9         | 1                 | 0        | 0        | 35         | 1         | 18         | 114         |
| <b>Total</b>       | <b>1</b>                 | <b>12</b>  | <b>2</b>  | <b>41</b>  | <b>15</b>  | <b>1</b>          | <b>5</b>  | <b>16</b> | <b>100</b> | <b>22</b> | <b>0</b>                 | <b>21</b> | <b>0</b> | <b>213</b> | <b>21</b> | <b>1</b>          | <b>1</b> | <b>0</b> | <b>151</b> | <b>2</b>  | <b>60</b>  | <b>505</b>  |
| 17:00              | 0                        | 4          | 0         | 22         | 4          | 0                 | 4         | 1         | 35         | 5         | 1                        | 13        | 0        | 26         | 14        | 0                 | 0        | 0        | 18         | 0         | 23         | 101         |
| 17:15              | 0                        | 7          | 0         | 15         | 7          | 0                 | 4         | 7         | 50         | 11        | 1                        | 11        | 0        | 28         | 12        | 1                 | 0        | 0        | 39         | 1         | 31         | 132         |
| 17:30              | 0                        | 9          | 0         | 10         | 9          | 0                 | 1         | 4         | 48         | 5         | 0                        | 11        | 0        | 40         | 11        | 0                 | 0        | 1        | 42         | 1         | 26         | 140         |
| 17:45              | 0                        | 7          | 1         | 11         | 8          | 1                 | 5         | 6         | 51         | 12        | 0                        | 3         | 0        | 41         | 3         | 0                 | 0        | 0        | 33         | 0         | 23         | 136         |
| <b>Total</b>       | <b>0</b>                 | <b>27</b>  | <b>1</b>  | <b>58</b>  | <b>28</b>  | <b>1</b>          | <b>14</b> | <b>18</b> | <b>184</b> | <b>33</b> | <b>2</b>                 | <b>38</b> | <b>0</b> | <b>135</b> | <b>40</b> | <b>1</b>          | <b>0</b> | <b>1</b> | <b>132</b> | <b>2</b>  | <b>103</b> | <b>509</b>  |
| <b>Grand Total</b> | <b>9</b>                 | <b>107</b> | <b>10</b> | <b>137</b> | <b>126</b> | <b>15</b>         | <b>25</b> | <b>43</b> | <b>352</b> | <b>83</b> | <b>4</b>                 | <b>68</b> | <b>0</b> | <b>552</b> | <b>72</b> | <b>3</b>          | <b>2</b> | <b>1</b> | <b>386</b> | <b>6</b>  | <b>287</b> | <b>1427</b> |
| Apprch %           | 7.1%                     | 84.9%      | 7.9%      |            |            | 18.1%             | 30.1%     | 51.8%     |            |           | 5.6%                     | 94.4%     | 0.0%     |            |           | 50.0%             | 33.3%    | 16.7%    |            |           |            |             |
| Total %            | 3.1%                     | 37.3%      | 3.5%      |            | 43.9%      | 5.2%              | 8.7%      | 15.0%     |            | 28.9%     | 1.4%                     | 23.7%     | 0.0%     |            | 25.1%     | 1.0%              | 0.7%     | 0.3%     |            | 2.1%      | 100.0%     |             |

| AM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 07:45 to 08:45            |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 07:45 |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |       |       |      |           |       |
| 7:45  | 0                        | 7     | 1     | 6    | 8         | 4                 | 2     | 1     | 13   | 7         | 0                        | 2     | 0     | 33   | 2         | 0                 | 1     | 0     | 9    | 1         | 18    |
| 8:00  | 2                        | 13    | 0     | 5    | 15        | 1                 | 1     | 0     | 13   | 2         | 0                        | 0     | 0     | 55   | 0         | 0                 | 0     | 0     | 20   | 0         | 17    |
| 8:15  | 2                        | 8     | 2     | 5    | 12        | 1                 | 1     | 1     | 12   | 3         | 0                        | 1     | 0     | 27   | 1         | 1                 | 0     | 0     | 13   | 1         | 17    |
| 8:30  | 1                        | 11    | 1     | 5    | 13        | 1                 | 1     | 0     | 6    | 2         | 1                        | 3     | 0     | 19   | 4         | 0                 | 0     | 0     | 15   | 0         | 19    |
| Total Volume                                      | 5                        | 39    | 4     | 21   | 48        | 7                 | 5     | 2     | 44   | 14        | 1                        | 6     | 0     | 134  | 7         | 1                 | 1     | 0     | 57   | 2         | 71    |
| % App Total                                       | 10.4%                    | 81.3% | 8.3%  |      |           | 50.0%             | 35.7% | 14.3% |      |           | 14.3%                    | 85.7% | 0.0%  |      |           | 50.0%             | 50.0% | 0.0%  |      |           |       |
| PHF   | .625                     | .750  | .500  |      | .800      | .438              | .625  | .500  |      | .500      | .250                     | .500  | .000  |      | .438      | .250              | .250  | .000  |      | .500      | .934  |

| PM PEAK HOUR                                      | Telegraph Ave Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | Telegraph Ave Northbound |       |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|--------------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                     | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:15 to 17:15            |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:15 |                          |       |       |      |           |                   |       |       |      |           |                          |       |       |      |           |                   |       |       |      |           |       |
| 16:15   | 0                        | 2     | 1     | 4    | 3         | 0                 | 2     | 6     | 26   | 8         | 0                        | 6     | 0     | 118  | 6         | 0                 | 1     | 0     | 41   | 1         | 18    |
| 16:30   | 0                        | 3     | 1     | 9    | 4         | 0                 | 1     | 3     | 26   | 4         | 0                        | 4     | 0     | 24   | 4         | 0                 | 0     | 0     | 32   | 0         | 12    |
| 16:45   | 1                        | 3     | 0     | 15   | 4         | 1                 | 1     | 2     | 33   | 4         | 0                        | 9     | 0     | 31   | 9         | 1                 | 0     | 0     | 35   | 1         | 18    |
| 17:00   | 0                        | 4     | 0     | 22   | 4         | 0                 | 4     | 1     | 35   | 5         | 1                        | 13    | 0     | 26   | 14        | 0                 | 0     | 0     | 18   | 0         | 23    |
| Total Volume                                      | 1                        | 12    | 2     | 50   | 15        | 1                 | 8     | 12    | 120  | 21        | 1                        | 32    | 0     | 199  | 33        | 1                 | 1     | 0     | 126  | 2         | 71    |
| % App Total                                       | 6.7%                     | 80.0% | 13.3% |      |           | 4.8%              | 38.1% | 57.1% |      |           | 3.0%                     | 97.0% | 0.0%  |      |           | 50.0%             | 50.0% | 0.0%  |      |           |       |
| PHF   | .250                     | .750  | .500  |      | .938      | .250              | .500  | .500  |      | .656      | .250                     | .615  | .000  |      | .589      | .250              | .250  | .000  |      | .500      | .772  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-016 Broadway & 19th St

Date : 5/26/2016

## Unshifted Count = All Vehicles & Utturns

| START TIME         | Broadway Southbound |             |            |          |             | 19th St Westbound |            |            |          |             | Broadway Northbound |             |          |          |             | 19th St Eastbound |          |          |          |           | Total       | Utturns Total |
|--------------------|---------------------|-------------|------------|----------|-------------|-------------------|------------|------------|----------|-------------|---------------------|-------------|----------|----------|-------------|-------------------|----------|----------|----------|-----------|-------------|---------------|
|                    | LEFT                | THRU        | RIGHT      | UTURNS   | APP.TOTAL   | LEFT              | THRU       | RIGHT      | UTURNS   | APP.TOTAL   | LEFT                | THRU        | RIGHT    | UTURNS   | APP.TOTAL   | LEFT              | THRU     | RIGHT    | UTURNS   | APP.TOTAL |             |               |
| 7:00               | 0                   | 39          | 2          | 1        | 42          | 7                 | 22         | 4          | 0        | 33          | 5                   | 57          | 0        | 0        | 62          | 0                 | 0        | 0        | 0        | 0         | 137         | 1             |
| 7:15               | 0                   | 63          | 9          | 0        | 72          | 5                 | 21         | 12         | 0        | 38          | 9                   | 61          | 0        | 0        | 70          | 0                 | 0        | 0        | 0        | 0         | 180         | 0             |
| 7:30               | 0                   | 76          | 8          | 0        | 84          | 4                 | 20         | 10         | 0        | 34          | 11                  | 76          | 0        | 0        | 87          | 0                 | 0        | 0        | 0        | 0         | 205         | 0             |
| 7:45               | 0                   | 86          | 7          | 0        | 93          | 4                 | 38         | 13         | 0        | 55          | 14                  | 79          | 0        | 1        | 94          | 0                 | 0        | 0        | 0        | 0         | 242         | 1             |
| <b>Total</b>       | <b>0</b>            | <b>264</b>  | <b>26</b>  | <b>1</b> | <b>291</b>  | <b>20</b>         | <b>101</b> | <b>39</b>  | <b>0</b> | <b>160</b>  | <b>39</b>           | <b>273</b>  | <b>0</b> | <b>1</b> | <b>313</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>764</b>  | <b>2</b>      |
| 8:00               | 0                   | 89          | 8          | 0        | 97          | 2                 | 41         | 19         | 0        | 62          | 27                  | 89          | 0        | 0        | 116         | 0                 | 0        | 0        | 0        | 0         | 275         | 0             |
| 8:15               | 0                   | 108         | 6          | 0        | 114         | 6                 | 47         | 14         | 0        | 67          | 16                  | 92          | 0        | 0        | 108         | 0                 | 0        | 0        | 0        | 0         | 289         | 0             |
| 8:30               | 0                   | 120         | 8          | 0        | 128         | 6                 | 38         | 12         | 0        | 56          | 20                  | 83          | 0        | 0        | 103         | 0                 | 0        | 0        | 0        | 0         | 287         | 0             |
| 8:45               | 0                   | 106         | 5          | 0        | 111         | 4                 | 33         | 6          | 0        | 43          | 19                  | 91          | 0        | 0        | 110         | 0                 | 0        | 0        | 0        | 0         | 264         | 0             |
| <b>Total</b>       | <b>0</b>            | <b>423</b>  | <b>27</b>  | <b>0</b> | <b>450</b>  | <b>18</b>         | <b>159</b> | <b>51</b>  | <b>0</b> | <b>228</b>  | <b>82</b>           | <b>355</b>  | <b>0</b> | <b>0</b> | <b>437</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1115</b> | <b>0</b>      |
| 16:00              | 0                   | 148         | 8          | 0        | 156         | 15                | 82         | 23         | 0        | 120         | 23                  | 127         | 0        | 0        | 150         | 0                 | 0        | 0        | 0        | 0         | 426         | 0             |
| 16:15              | 0                   | 136         | 14         | 0        | 150         | 24                | 100        | 21         | 0        | 145         | 18                  | 103         | 0        | 2        | 123         | 0                 | 0        | 0        | 0        | 0         | 418         | 2             |
| 16:30              | 0                   | 116         | 14         | 1        | 131         | 17                | 88         | 21         | 0        | 126         | 25                  | 91          | 0        | 1        | 117         | 0                 | 0        | 0        | 0        | 0         | 374         | 2             |
| 16:45              | 0                   | 139         | 15         | 0        | 154         | 21                | 94         | 21         | 0        | 136         | 25                  | 114         | 0        | 0        | 139         | 0                 | 0        | 0        | 0        | 0         | 429         | 0             |
| <b>Total</b>       | <b>0</b>            | <b>539</b>  | <b>51</b>  | <b>1</b> | <b>591</b>  | <b>77</b>         | <b>364</b> | <b>86</b>  | <b>0</b> | <b>527</b>  | <b>91</b>           | <b>435</b>  | <b>0</b> | <b>3</b> | <b>529</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1647</b> | <b>4</b>      |
| 17:00              | 0                   | 143         | 10         | 0        | 153         | 17                | 108        | 23         | 0        | 148         | 26                  | 135         | 0        | 0        | 161         | 0                 | 0        | 0        | 0        | 0         | 462         | 0             |
| 17:15              | 0                   | 132         | 16         | 0        | 148         | 15                | 83         | 25         | 0        | 123         | 34                  | 109         | 0        | 2        | 145         | 0                 | 0        | 0        | 0        | 0         | 416         | 2             |
| 17:30              | 0                   | 138         | 9          | 1        | 148         | 19                | 80         | 20         | 0        | 119         | 27                  | 114         | 0        | 1        | 142         | 0                 | 0        | 0        | 0        | 0         | 409         | 2             |
| 17:45              | 0                   | 132         | 22         | 0        | 154         | 10                | 78         | 21         | 0        | 109         | 20                  | 97          | 0        | 0        | 117         | 0                 | 0        | 0        | 0        | 0         | 380         | 0             |
| <b>Total</b>       | <b>0</b>            | <b>545</b>  | <b>57</b>  | <b>1</b> | <b>603</b>  | <b>61</b>         | <b>349</b> | <b>89</b>  | <b>0</b> | <b>499</b>  | <b>107</b>          | <b>455</b>  | <b>0</b> | <b>3</b> | <b>565</b>  | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>1667</b> | <b>4</b>      |
| <b>Grand Total</b> | <b>0</b>            | <b>1771</b> | <b>161</b> | <b>3</b> | <b>1935</b> | <b>176</b>        | <b>973</b> | <b>265</b> | <b>0</b> | <b>1414</b> | <b>319</b>          | <b>1518</b> | <b>0</b> | <b>7</b> | <b>1844</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>  | <b>5193</b> | <b>10</b>     |
| Apprch %           | 0.0%                | 91.5%       | 8.3%       | 0.2%     |             | 12.4%             | 68.8%      | 18.7%      | 0.0%     |             | 17.3%               | 82.3%       | 0.0%     | 0.4%     |             | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      |             |               |
| Total %            | 0.0%                | 34.1%       | 3.1%       | 0.1%     | 37.3%       | 3.4%              | 18.7%      | 5.1%       | 0.0%     | 27.2%       | 6.1%                | 29.2%       | 0.0%     | 0.1%     | 35.5%       | 0.0%              | 0.0%     | 0.0%     | 0.0%     | 0.0%      | 100.0%      |               |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 19th St Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 19th St Eastbound |      |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |      |       |        |           |       |
| 8:00  | 0                   | 89    | 8     | 0      | 97        | 2                 | 41    | 19    | 0      | 62        | 27                  | 89    | 0     | 0      | 116       | 0                 | 0    | 0     | 0      | 0         | 275   |
| 8:15  | 0                   | 108   | 6     | 0      | 114       | 6                 | 47    | 14    | 0      | 67        | 16                  | 92    | 0     | 0      | 108       | 0                 | 0    | 0     | 0      | 0         | 289   |
| 8:30  | 0                   | 120   | 8     | 0      | 128       | 6                 | 38    | 12    | 0      | 56        | 20                  | 83    | 0     | 0      | 103       | 0                 | 0    | 0     | 0      | 0         | 287   |
| 8:45  | 0                   | 106   | 5     | 0      | 111       | 4                 | 33    | 6     | 0      | 43        | 19                  | 91    | 0     | 0      | 110       | 0                 | 0    | 0     | 0      | 0         | 264   |
| Total Volume                                      | 0                   | 423   | 27    | 0      | 450       | 18                | 159   | 51    | 0      | 228       | 82                  | 355   | 0     | 0      | 437       | 0                 | 0    | 0     | 0      | 0         | 1115  |
| % App Total                                       | 0.0%                | 94.0% | 6.0%  | 0.0%   |           | 7.9%              | 69.7% | 22.4% | 0.0%   |           | 18.8%               | 81.2% | 0.0%  | 0.0%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .000                | .881  | .844  | .000   | .879      | .750              | .846  | .671  | .000   | .851      | .759                | .965  | .000  | .000   | .942      | .000              | .000 | .000  | .000   | .000      | .965  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |        |           | 19th St Westbound |       |       |        |           | Broadway Northbound |       |       |        |           | 19th St Eastbound |      |       |        |           | Total |
|---|---------------------|-------|-------|--------|-----------|-------------------|-------|-------|--------|-----------|---------------------|-------|-------|--------|-----------|-------------------|------|-------|--------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT                | THRU  | RIGHT | UTURNS | APP.TOTAL | LEFT              | THRU | RIGHT | UTURNS | APP.TOTAL |       |
| Peak Hour Analysis From 16:45 to 17:45            |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |      |       |        |           |       |
| Peak Hour For Entire Intersection Begins at 16:45 |                     |       |       |        |           |                   |       |       |        |           |                     |       |       |        |           |                   |      |       |        |           |       |
| 16:45   | 0                   | 139   | 15    | 0      | 154       | 21                | 94    | 21    | 0      | 136       | 25                  | 114   | 0     | 0      | 139       | 0                 | 0    | 0     | 0      | 0         | 429   |
| 17:00   | 0                   | 143   | 10    | 0      | 153       | 17                | 108   | 23    | 0      | 148       | 26                  | 135   | 0     | 0      | 161       | 0                 | 0    | 0     | 0      | 0         | 462   |
| 17:15   | 0                   | 132   | 16    | 0      | 148       | 15                | 83    | 25    | 0      | 123       | 34                  | 109   | 0     | 2      | 145       | 0                 | 0    | 0     | 0      | 0         | 416   |
| 17:30   | 0                   | 138   | 9     | 1      | 148       | 19                | 80    | 20    | 0      | 119       | 27                  | 114   | 0     | 1      | 142       | 0                 | 0    | 0     | 0      | 0         | 409   |
| Total Volume                                      | 0                   | 552   | 50    | 1      | 603       | 72                | 365   | 89    | 0      | 526       | 112                 | 472   | 0     | 3      | 587       | 0                 | 0    | 0     | 0      | 0         | 1716  |
| % App Total                                       | 0.0%                | 91.5% | 8.3%  | 0.2%   |           | 13.7%             | 69.4% | 16.9% | 0.0%   |           | 19.1%               | 80.4% | 0.0%  | 0.5%   |           | 0.0%              | 0.0% | 0.0%  | 0.0%   | 0.0%      |       |
| PHF   | .000                | .965  | .781  | .250   | .979      | .857              | .845  | .890  | .000   | .889      | .824                | .874  | .000  | .375   | .911      | .000              | .000 | .000  | .000   | .000      | .929  |

# ALL TRAFFIC DATA

City of Oakland  
 All Vehicles & Utturns On Unshifted  
 Bikes & Peds On Bank 1  
 Heavy Trucks On Bank 2

(916) 771-8700

[orders@atdtraffic.com](mailto:orders@atdtraffic.com)

File Name : 16-7388-016 Broadway & 19th St

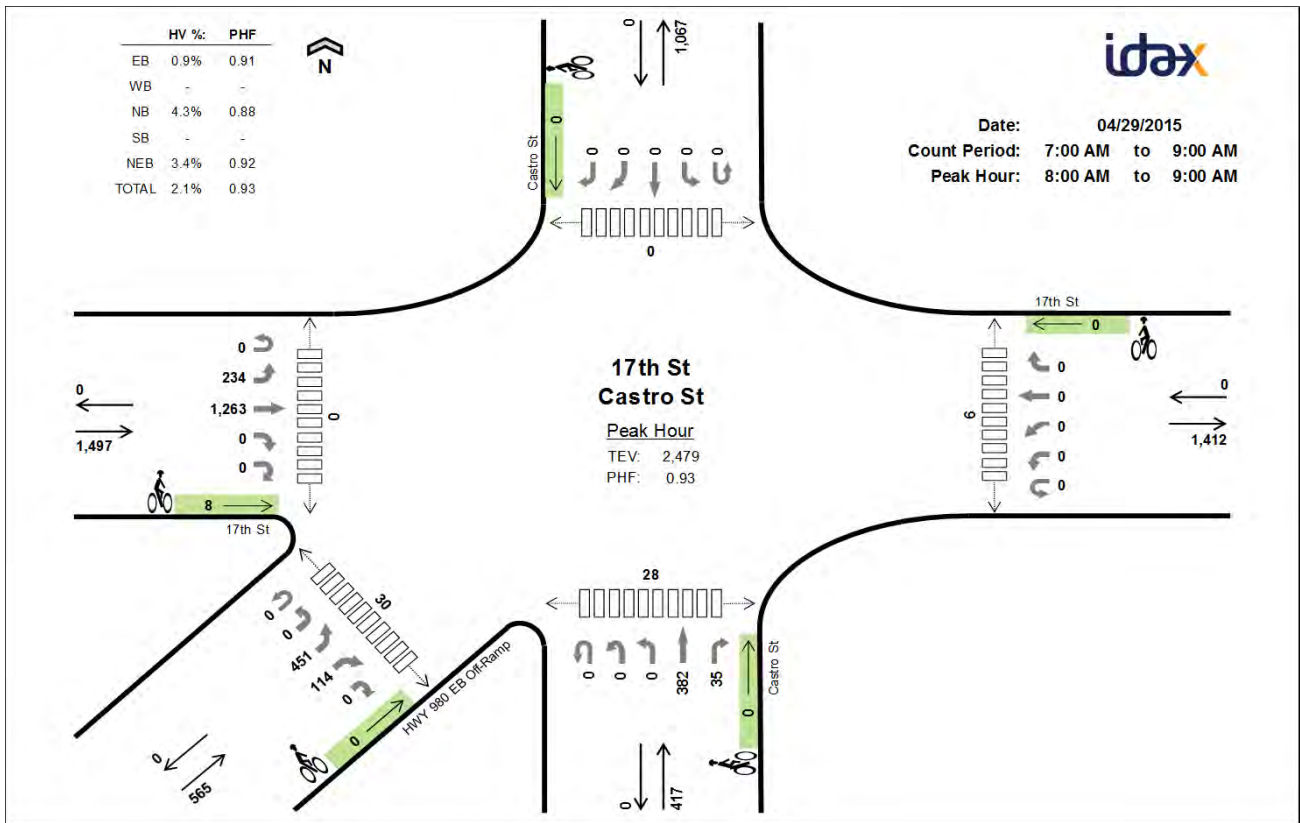
Date : 5/26/2016

## Bank 1 Count = Bikes & Peds

| START TIME         | Broadway Southbound |            |           |            |            | 19th St Westbound |           |          |            |           | Broadway Northbound |            |          |            |            | 19th St Eastbound |          |          |            |           | Total      | Peds Total  |
|--------------------|---------------------|------------|-----------|------------|------------|-------------------|-----------|----------|------------|-----------|---------------------|------------|----------|------------|------------|-------------------|----------|----------|------------|-----------|------------|-------------|
|                    | LEFT                | THRU       | RIGHT     | PEDS       | APP.TOTAL  | LEFT              | THRU      | RIGHT    | PEDS       | APP.TOTAL | LEFT                | THRU       | RIGHT    | PEDS       | APP.TOTAL  | LEFT              | THRU     | RIGHT    | PEDS       | APP.TOTAL |            |             |
| 7:00               | 1                   | 6          | 1         | 3          | 8          | 0                 | 0         | 1        | 22         | 1         | 0                   | 1          | 0        | 17         | 1          | 0                 | 0        | 0        | 5          | 0         | 10         | 47          |
| 7:15               | 0                   | 12         | 0         | 4          | 12         | 0                 | 0         | 1        | 24         | 1         | 0                   | 1          | 0        | 15         | 1          | 0                 | 0        | 2        | 12         | 2         | 16         | 55          |
| 7:30               | 0                   | 16         | 2         | 9          | 18         | 4                 | 3         | 0        | 25         | 7         | 1                   | 2          | 0        | 17         | 3          | 0                 | 0        | 0        | 10         | 0         | 28         | 61          |
| 7:45               | 0                   | 24         | 4         | 9          | 28         | 2                 | 3         | 0        | 39         | 5         | 0                   | 3          | 0        | 36         | 3          | 0                 | 0        | 1        | 23         | 1         | 37         | 107         |
| <b>Total</b>       | <b>1</b>            | <b>58</b>  | <b>7</b>  | <b>25</b>  | <b>66</b>  | <b>6</b>          | <b>6</b>  | <b>2</b> | <b>110</b> | <b>14</b> | <b>1</b>            | <b>7</b>   | <b>0</b> | <b>85</b>  | <b>8</b>   | <b>0</b>          | <b>0</b> | <b>3</b> | <b>50</b>  | <b>3</b>  | <b>91</b>  | <b>270</b>  |
| 8:00               | 0                   | 16         | 1         | 14         | 17         | 0                 | 2         | 0        | 46         | 2         | 0                   | 2          | 0        | 48         | 2          | 0                 | 0        | 0        | 24         | 0         | 21         | 132         |
| 8:15               | 1                   | 24         | 1         | 15         | 26         | 2                 | 2         | 0        | 36         | 4         | 2                   | 1          | 0        | 52         | 3          | 0                 | 1        | 0        | 31         | 1         | 34         | 134         |
| 8:30               | 0                   | 26         | 1         | 12         | 27         | 4                 | 1         | 0        | 104        | 5         | 0                   | 0          | 0        | 43         | 0          | 0                 | 0        | 2        | 48         | 2         | 34         | 207         |
| 8:45               | 0                   | 23         | 3         | 16         | 26         | 2                 | 5         | 0        | 74         | 7         | 1                   | 4          | 0        | 60         | 5          | 0                 | 0        | 1        | 28         | 1         | 39         | 178         |
| <b>Total</b>       | <b>1</b>            | <b>89</b>  | <b>6</b>  | <b>57</b>  | <b>96</b>  | <b>8</b>          | <b>10</b> | <b>0</b> | <b>260</b> | <b>18</b> | <b>3</b>            | <b>7</b>   | <b>0</b> | <b>203</b> | <b>10</b>  | <b>0</b>          | <b>1</b> | <b>3</b> | <b>131</b> | <b>4</b>  | <b>128</b> | <b>651</b>  |
| 16:00              | 0                   | 11         | 1         | 23         | 12         | 1                 | 1         | 0        | 56         | 2         | 2                   | 4          | 0        | 41         | 6          | 0                 | 0        | 0        | 52         | 0         | 20         | 172         |
| 16:15              | 0                   | 3          | 1         | 19         | 4          | 1                 | 2         | 0        | 54         | 3         | 3                   | 9          | 1        | 66         | 13         | 0                 | 0        | 0        | 66         | 0         | 20         | 205         |
| 16:30              | 0                   | 10         | 0         | 31         | 10         | 0                 | 2         | 1        | 63         | 3         | 1                   | 12         | 0        | 32         | 13         | 0                 | 0        | 0        | 28         | 0         | 26         | 154         |
| 16:45              | 0                   | 5          | 1         | 20         | 6          | 0                 | 0         | 0        | 64         | 0         | 2                   | 11         | 0        | 49         | 13         | 0                 | 2        | 0        | 45         | 2         | 21         | 178         |
| <b>Total</b>       | <b>0</b>            | <b>29</b>  | <b>3</b>  | <b>93</b>  | <b>32</b>  | <b>2</b>          | <b>5</b>  | <b>1</b> | <b>237</b> | <b>8</b>  | <b>8</b>            | <b>36</b>  | <b>1</b> | <b>188</b> | <b>45</b>  | <b>0</b>          | <b>2</b> | <b>0</b> | <b>191</b> | <b>2</b>  | <b>87</b>  | <b>709</b>  |
| 17:00              | 0                   | 2          | 0         | 28         | 2          | 0                 | 5         | 2        | 65         | 7         | 0                   | 15         | 1        | 42         | 16         | 0                 | 2        | 0        | 44         | 2         | 27         | 179         |
| 17:15              | 0                   | 5          | 0         | 19         | 5          | 2                 | 7         | 0        | 55         | 9         | 2                   | 20         | 0        | 43         | 22         | 0                 | 1        | 1        | 37         | 2         | 38         | 154         |
| 17:30              | 0                   | 13         | 0         | 27         | 13         | 1                 | 4         | 0        | 73         | 5         | 1                   | 18         | 0        | 54         | 19         | 0                 | 0        | 0        | 55         | 0         | 37         | 209         |
| 17:45              | 0                   | 1          | 0         | 28         | 1          | 2                 | 7         | 0        | 66         | 9         | 2                   | 18         | 0        | 68         | 20         | 0                 | 0        | 0        | 45         | 0         | 30         | 207         |
| <b>Total</b>       | <b>0</b>            | <b>21</b>  | <b>0</b>  | <b>102</b> | <b>21</b>  | <b>5</b>          | <b>23</b> | <b>2</b> | <b>259</b> | <b>30</b> | <b>5</b>            | <b>71</b>  | <b>1</b> | <b>207</b> | <b>77</b>  | <b>0</b>          | <b>3</b> | <b>1</b> | <b>181</b> | <b>4</b>  | <b>132</b> | <b>749</b>  |
| <b>Grand Total</b> | <b>2</b>            | <b>197</b> | <b>16</b> | <b>277</b> | <b>215</b> | <b>21</b>         | <b>44</b> | <b>5</b> | <b>866</b> | <b>70</b> | <b>17</b>           | <b>121</b> | <b>2</b> | <b>683</b> | <b>140</b> | <b>0</b>          | <b>6</b> | <b>7</b> | <b>553</b> | <b>13</b> | <b>438</b> | <b>2379</b> |
| Apprch %           | 0.9%                | 91.6%      | 7.4%      |            |            | 30.0%             | 62.9%     | 7.1%     |            |           | 12.1%               | 86.4%      | 1.4%     |            |            | 0.0%              | 46.2%    | 53.8%    |            |           |            |             |
| Total %            | 0.5%                | 45.0%      | 3.7%      |            | 49.1%      | 4.8%              | 10.0%     | 1.1%     |            | 16.0%     | 3.9%                | 27.6%      | 0.5%     |            | 32.0%      | 0.0%              | 1.4%     | 1.6%     |            | 3.0%      | 100.0%     |             |

| AM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 08:00 to 09:00            |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 08:00 |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| 8:00  | 0                   | 16    | 1     | 14   | 17        | 0                 | 2     | 0     | 46   | 2         | 0                   | 2     | 0     | 48   | 2         | 0                 | 0     | 0     | 24   | 0         | 21    |
| 8:15  | 1                   | 24    | 1     | 15   | 26        | 2                 | 2     | 0     | 36   | 4         | 2                   | 1     | 0     | 52   | 3         | 0                 | 1     | 0     | 31   | 1         | 34    |
| 8:30  | 0                   | 26    | 1     | 12   | 27        | 4                 | 1     | 0     | 104  | 5         | 0                   | 0     | 0     | 43   | 0         | 0                 | 0     | 2     | 48   | 2         | 34    |
| 8:45  | 0                   | 23    | 3     | 16   | 26        | 2                 | 5     | 0     | 74   | 7         | 1                   | 4     | 0     | 60   | 5         | 0                 | 0     | 1     | 28   | 1         | 39    |
| Total Volume                                      | 1                   | 89    | 6     | 57   | 96        | 8                 | 10    | 0     | 260  | 18        | 3                   | 7     | 0     | 203  | 10        | 0                 | 1     | 3     | 131  | 4         | 128   |
| % App Total                                       | 1.0%                | 92.7% | 6.3%  |      |           | 44.4%             | 55.6% | 0.0%  |      |           | 30.0%               | 70.0% | 0.0%  |      |           | 0.0%              | 25.0% | 75.0% |      |           |       |
| PHF   | .250                | .856  | .500  |      | .889      | .500              | .500  | .000  |      | .643      | .375                | .438  | .000  |      | .500      | .000              | .250  | .375  |      | .500      | .821  |

| PM PEAK HOUR                                      | Broadway Southbound |       |       |      |           | 19th St Westbound |       |       |      |           | Broadway Northbound |       |       |      |           | 19th St Eastbound |       |       |      |           | Total |
|---|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|---------------------|-------|-------|------|-----------|-------------------|-------|-------|------|-----------|-------|
|   | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT                | THRU  | RIGHT | PEDS | APP.TOTAL | LEFT              | THRU  | RIGHT | PEDS | APP.TOTAL |       |
| Peak Hour Analysis From 16:45 to 17:45            |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| Peak Hour For Entire Intersection Begins at 16:45 |                     |       |       |      |           |                   |       |       |      |           |                     |       |       |      |           |                   |       |       |      |           |       |
| 16:45   | 0                   | 5     | 1     | 20   | 6         | 0                 | 0     | 0     | 64   | 0         | 2                   | 11    | 0     | 49   | 13        | 0                 | 2     | 0     | 45   | 2         | 21    |
| 17:00   | 0                   | 2     | 0     | 28   | 2         | 0                 | 5     | 2     | 65   | 7         | 0                   | 15    | 1     | 42   | 16        | 0                 | 2     | 0     | 44   | 2         | 27    |
| 17:15   | 0                   | 5     | 0     | 19   | 5         | 2                 | 7     | 0     | 55   | 9         | 2                   | 20    | 0     | 43   | 22        | 0                 | 1     | 1     | 37   | 2         | 38    |
| 17:30   | 0                   | 13    | 0     | 27   | 13        | 1                 | 4     | 0     | 73   | 5         | 1                   | 18    | 0     | 54   | 19        | 0                 | 0     | 0     | 55   | 0         | 37    |
| Total Volume                                      | 0                   | 25    | 1     | 94   | 26        | 3                 | 16    | 2     | 257  | 21        | 5                   | 64    | 1     | 188  | 70        | 0                 | 5     | 1     | 181  | 6         | 123   |
| % App Total                                       | 0.0%                | 96.2% | 3.8%  |      |           | 14.3%             | 76.2% | 9.5%  |      |           | 7.1%                | 91.4% | 1.4%  |      |           | 0.0%              | 83.3% | 16.7% |      |           |       |
| PHF   | .000                | .481  | .250  |      | .500      | .375              | .571  | .250  |      | .583      | .625                | .800  | .250  |      | .795      | .000              | .625  | .250  |      | .750      | .809  |



**Six-Hour Count Summaries**

| Interval Start | 17th St Eastbound |           |            |          |          | 17th St Westbound |          |          |          |          | Castro St Northbound |          |          |            | Castro St Southbound |          |          |          |          | HWY 980 EB Off-Ramp |          |          |            |           | 15-min Total | Rolling One Hour |       |
|----------------|-------------------|-----------|------------|----------|----------|-------------------|----------|----------|----------|----------|----------------------|----------|----------|------------|----------------------|----------|----------|----------|----------|---------------------|----------|----------|------------|-----------|--------------|------------------|-------|
|                | UT                | LT        | TH         | RT       | HR       | UT                | LT       | BL       | TH       | RT       | UT                   | HL       | LT       | TH         | RT                   | UT       | LT       | TH       | BR       | RT                  | UT       | HL       | BL         | BR        |              |                  | HR    |
| 7:00 AM        | 0                 | 30        | 121        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 62         | 12                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 58         | 12        | 0            | 295              | 0     |
| 7:15 AM        | 0                 | 47        | 128        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 80         | 11                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 89         | 23        | 0            | 378              | 0     |
| 7:30 AM        | 0                 | 63        | 154        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 97         | 5                    | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 88         | 22        | 0            | 429              | 0     |
| 7:45 AM        | 0                 | 60        | 260        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 88         | 13                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 107        | 35        | 0            | 563              | 1,665 |
| <b>8:00 AM</b> | <b>0</b>          | <b>53</b> | <b>359</b> | <b>0</b> | <b>0</b> | <b>0</b>          | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>             | <b>0</b> | <b>0</b> | <b>109</b> | <b>10</b>            | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>            | <b>0</b> | <b>0</b> | <b>108</b> | <b>29</b> | <b>0</b>     | <b>668</b>       | 2,038 |
| 8:15 AM        | 0                 | 74        | 272        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 93         | 7                    | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 115        | 32        | 0            | 593              | 2,253 |
| 8:30 AM        | 0                 | 57        | 314        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 95         | 11                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 104        | 23        | 0            | 604              | 2,428 |
| 8:45 AM        | 0                 | 50        | 318        | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 85         | 7                    | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 124        | 30        | 0            | 614              | 2,479 |
| Count Total    | 0                 | 434       | 1,926      | 0        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 709        | 76                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 793        | 206       | 0            | 4,144            | 0     |
| Peak Hour      | All               | 0         | 234        | 1,263    | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 382        | 35                   | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 451        | 114       | 0            | 2,479            | 0     |
|                | HV                | 0         | 8          | 6        | 0        | 0                 | 0        | 0        | 0        | 0        | 0                    | 0        | 0        | 18         | 0                    | 0        | 0        | 0        | 0        | 0                   | 0        | 0        | 17         | 2         | 0            | 51               | 0     |
|                | HV%               | -         | 3%         | 0%       | -        | -                 | -        | -        | -        | -        | -                    | -        | -        | -          | 5%                   | 0%       | -        | -        | -        | -                   | -        | -        | -          | 4%        | 2%           | -                | 2%    |

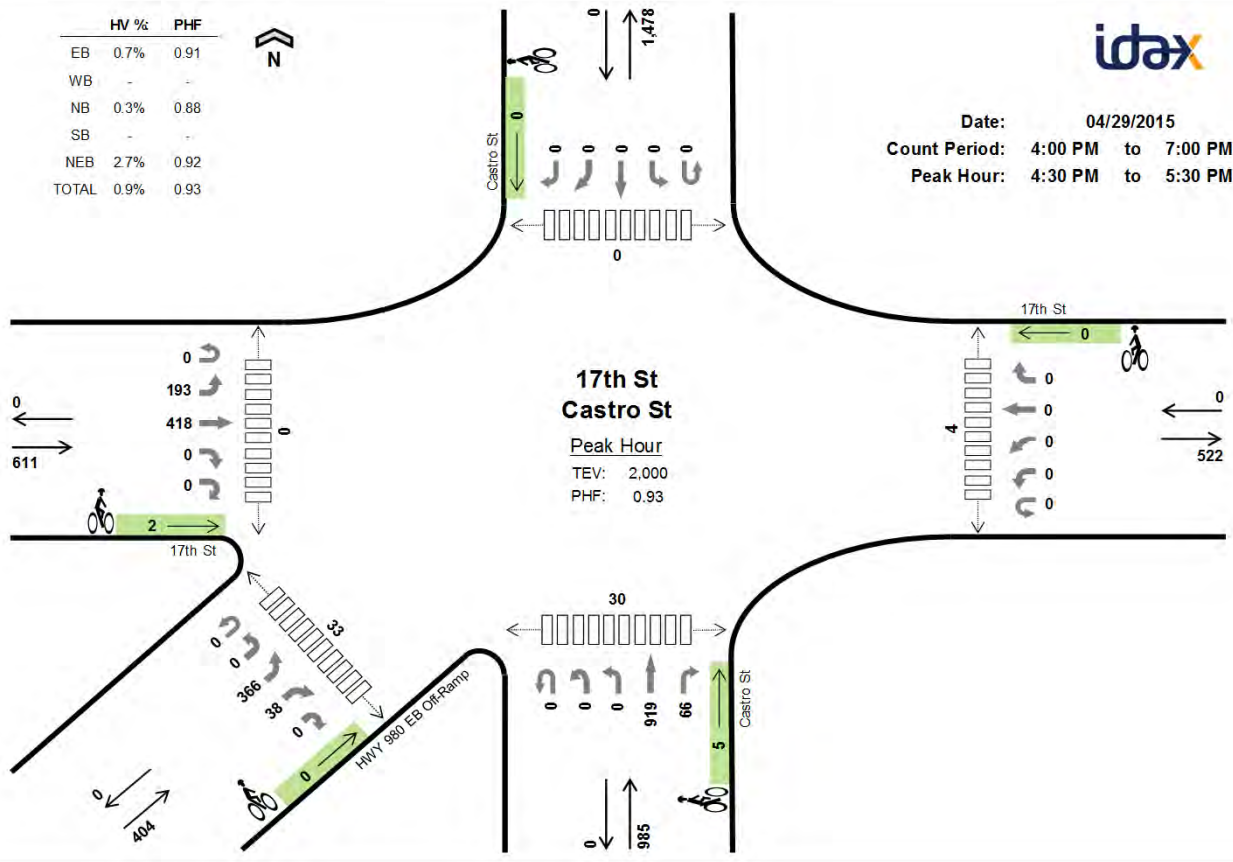
Note: Six-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |          |          |          |          |          | Bicycles |          |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |           |           |     |
|----------------|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|-----------|-----------|-----|
|                | EB                   | WB       | NB       | SB       | NEB      | Total    | EB       | WB       | NB       | SB       | NEB      | Total    | East                       | West     | North    | South    | Southwest | Total     |     |
| 7:00 AM        | 5                    | 0        | 11       | 0        | 4        | 20       | 0        | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 2        | 2         | 2         | 4   |
| 7:15 AM        | 2                    | 0        | 8        | 0        | 9        | 19       | 0        | 0        | 0        | 0        | 0        | 0        | 1                          | 0        | 0        | 3        | 3         | 7         | 7   |
| 7:30 AM        | 4                    | 0        | 5        | 0        | 4        | 13       | 2        | 0        | 0        | 0        | 0        | 2        | 2                          | 0        | 0        | 12       | 15        | 29        | 29  |
| 7:45 AM        | 0                    | 0        | 4        | 0        | 2        | 6        | 1        | 0        | 0        | 0        | 0        | 1        | 0                          | 0        | 0        | 7        | 6         | 13        | 13  |
| <b>8:00 AM</b> | <b>2</b>             | <b>0</b> | <b>2</b> | <b>0</b> | <b>2</b> | <b>6</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>6</b> | <b>6</b>  | <b>12</b> | 12  |
| 8:15 AM        | 5                    | 0        | 6        | 0        | 6        | 17       | 4        | 0        | 0        | 0        | 0        | 4        | 3                          | 0        | 0        | 10       | 9         | 22        | 22  |
| 8:30 AM        | 4                    | 0        | 3        | 0        | 2        | 9        | 2        | 0        | 0        | 0        | 0        | 2        | 1                          | 0        | 0        | 6        | 8         | 15        | 15  |
| 8:45 AM        | 3                    | 0        | 7        | 0        | 9        | 19       | 0        | 0        | 0        | 0        | 0        | 0        | 2                          | 0        | 0        | 6        | 7         | 15        | 15  |
| Count Total    | 25                   | 0        | 46       | 0        | 38       | 109      | 11       | 0        | 0        | 0        | 0        | 11       | 9                          | 0        | 0        | 52       | 56        | 117       | 117 |
| Peak Hr        | 14                   | 0        | 18       | 0        | 19       | 51       | 8        | 0        | 0        | 0        | 0        | 8        | 6                          | 0        | 0        | 28       | 30        | 64        | 64  |

|       | HV % | PHF  |
|-------|------|------|
| EB    | 0.7% | 0.91 |
| WB    | -    | -    |
| NB    | 0.3% | 0.88 |
| SB    | -    | -    |
| NEB   | 2.7% | 0.92 |
| TOTAL | 0.9% | 0.93 |



Date: 04/29/2015  
 Count Period: 4:00 PM to 7:00 PM  
 Peak Hour: 4:30 PM to 5:30 PM



Six-Hour Count Summaries

| Interval Start | 17th St Eastbound |     |       |     | 17th St Westbound |    |    |    | Castro St Northbound |    |    |       | Castro St Southbound |    |    |    | HWY 980 EB Off-Ramp Northeastbound |    |    |    | 15-min Total | Rolling One Hour |    |       |       |
|----------------|-------------------|-----|-------|-----|-------------------|----|----|----|----------------------|----|----|-------|----------------------|----|----|----|------------------------------------|----|----|----|--------------|------------------|----|-------|-------|
|                | UT                | LT  | TH    | HR  | UT                | LT | TH | RT | UT                   | HL | LT | TH    | RT                   | UT | LT | TH | BR                                 | RT | UT | HL |              |                  | BL | BR    | HR    |
| 4:00 PM        | 0                 | 44  | 114   | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 200   | 13                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 92           | 8                | 0  | 469   | 0     |
| 4:15 PM        | 0                 | 45  | 91    | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 241   | 13                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 65           | 15               | 0  | 470   | 0     |
| 4:30 PM        | 0                 | 62  | 102   | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 220   | 18                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 84           | 8                | 0  | 494   | 0     |
| 4:45 PM        | 0                 | 54  | 113   | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 208   | 14                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 88           | 7                | 0  | 484   | 1,917 |
| 5:00 PM        | 0                 | 42  | 108   | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 264   | 16                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 98           | 12               | 0  | 540   | 1,988 |
| 5:15 PM        | 0                 | 35  | 95    | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 227   | 18                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 96           | 11               | 0  | 482   | 2,000 |
| 5:30 PM        | 0                 | 35  | 90    | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 223   | 15                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 108          | 7                | 0  | 478   | 1,984 |
| 5:45 PM        | 0                 | 48  | 112   | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 156   | 7                    | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 105          | 14               | 0  | 442   | 1,942 |
| Count Total    | 0                 | 524 | 1,176 | 0   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 2,347 | 141                  | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 1,064        | 116              | 0  | 5,368 | 0     |
| Peak Hour      | All               | 0   | 193   | 418 | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 919   | 66                   | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 366          | 38               | 0  | 2,000 | 0     |
|                | HV                | 0   | 3     | 1   | 0                 | 0  | 0  | 0  | 0                    | 0  | 0  | 3     | 0                    | 0  | 0  | 0  | 0                                  | 0  | 0  | 0  | 11           | 0                | 0  | 18    | 0     |
|                | HV%               | -   | 2%    | 0%  | -                 | -  | -  | -  | -                    | -  | -  | 0%    | 0%                   | -  | -  | -  | -                                  | -  | -  | -  | 3%           | 0%               | -  | 1%    | 0     |

Note: Six-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |    |    |    |     |       | Bicycles |    |    |    |     |       | Pedestrians (Crossing Leg) |      |       |       |           |       |
|----------------|----------------------|----|----|----|-----|-------|----------|----|----|----|-----|-------|----------------------------|------|-------|-------|-----------|-------|
|                | EB                   | WB | NB | SB | NEB | Total | EB       | WB | NB | SB | NEB | Total | East                       | West | North | South | Southwest | Total |
| 4:00 PM        | 1                    | 0  | 3  | 0  | 3   | 7     | 2        | 0  | 0  | 0  | 0   | 2     | 6                          | 2    | 2     | 1     | 5         | 16    |
| 4:15 PM        | 6                    | 0  | 1  | 0  | 4   | 11    | 0        | 0  | 0  | 0  | 0   | 0     | 0                          | 1    | 0     | 9     | 11        | 21    |
| 4:30 PM        | 2                    | 0  | 1  | 0  | 5   | 8     | 1        | 0  | 0  | 0  | 0   | 1     | 0                          | 0    | 0     | 12    | 11        | 23    |
| 4:45 PM        | 1                    | 0  | 0  | 0  | 1   | 2     | 1        | 0  | 5  | 0  | 0   | 6     | 0                          | 0    | 0     | 8     | 8         | 16    |
| 5:00 PM        | 1                    | 0  | 1  | 0  | 3   | 5     | 0        | 0  | 0  | 0  | 0   | 0     | 3                          | 0    | 0     | 5     | 7         | 15    |
| 5:15 PM        | 0                    | 0  | 1  | 0  | 2   | 3     | 0        | 0  | 0  | 0  | 0   | 0     | 1                          | 0    | 0     | 0     | 5         | 13    |
| 5:30 PM        | 1                    | 0  | 2  | 0  | 1   | 4     | 0        | 0  | 0  | 0  | 0   | 0     | 2                          | 0    | 0     | 8     | 10        | 20    |
| 5:45 PM        | 4                    | 0  | 3  | 0  | 2   | 9     | 0        | 0  | 0  | 0  | 0   | 0     | 2                          | 0    | 0     | 6     | 7         | 15    |
| Count Total    | 21                   | 0  | 15 | 0  | 26  | 62    | 8        | 0  | 10 | 0  | 0   | 18    | 21                         | 3    | 2     | 81    | 94        | 201   |
| Peak Hr        | 4                    | 0  | 3  | 0  | 11  | 18    | 2        | 0  | 5  | 0  | 0   | 7     | 4                          | 0    | 0     | 30    | 33        | 67    |



























## **Attachment B**

### Intersection Level of Service Calculations























HCM 2010 Signalized Intersection Summary  
 1: Northgate Avenue/1-980 SB Off Ramp & 27th Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |  |  |  |
| Traffic Volume (veh/h)       | 0   | 226   | 16  | 13  | 143   | 0   | 0  | 0   | 0   | 644   | 1020  | 363   |
| Future Volume (veh/h)        | 0   | 226   | 16  | 13  | 143   | 0   | 0  | 0   | 0   | 644   | 1020  | 363   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.95  | 0.99  |   | 1.00  |  |   |   | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 0   | 1676  | 1710  | 1676  | 1676  | 0   |  |   |   | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 0   | 226   | 10  | 13  | 143   | 0   |  |   |   | 555   | 1145  | 247   |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 1   | 2   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 2   | 2   | 2   | 0   |  |   |   | 2   | 2   | 2   |
| Cap, veh/h                   | 0   | 670   | 29  | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| Arrive On Green              | 0.00  | 0.22  | 0.21  | 0.23  | 0.23  | 0.00  |  |   |   | 0.67  | 0.67  | 0.67  |
| Sat Flow, veh/h              | 0   | 3184  | 136   | 1014  | 3269  | 0   |  |   |   | 1597  | 3353  | 1425  |
| Grp Volume(v), veh/h         | 0   | 115   | 121   | 13  | 143   | 0   |  |   |   | 555   | 1145  | 247   |
| Grp Sat Flow(s),veh/h/ln     | 0   | 1593  | 1644  | 1014  | 1593  | 0   |  |   |   | 1597  | 1676  | 1425  |
| Q Serve(g_s), s              | 0.0   | 5.0   | 5.0   | 0.9   | 2.9   | 0.0   |  |   |   | 14.1  | 13.7  | 5.6   |
| Cycle Q Clear(g_c), s        | 0.0   | 5.0   | 5.0   | 5.9   | 2.9   | 0.0   |  |   |   | 14.1  | 13.7  | 5.6   |
| Prop In Lane                 | 0.00  |   | 0.08  | 1.00  |   | 0.00  |  |   |   | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 0   | 344   | 355   | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| V/C Ratio(X)                 | 0.00  | 0.34  | 0.34  | 0.05  | 0.20  | 0.00  |  |   |   | 0.52  | 0.51  | 0.26  |
| Avail Cap(c_a), veh/h        | 0   | 344   | 355   | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 0.0   | 26.8  | 26.9  | 28.5  | 25.2  | 0.0   |  |   |   | 6.6   | 6.6   | 5.2   |
| Incr Delay (d2), s/veh       | 0.0   | 2.6   | 2.6   | 0.4   | 0.6   | 0.0   |  |   |   | 1.8   | 0.8   | 0.7   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 2.4   | 2.5   | 0.3   | 1.4   | 0.0   |  |   |   | 6.7   | 6.5   | 2.3   |
| LnGrp Delay(d),s/veh         | 0.0   | 29.5  | 29.5  | 28.9  | 25.9  | 0.0   |  |   |   | 8.4   | 7.4   | 5.9   |
| LnGrp LOS                    |   | C   | C   | C   | C   |   |  |   |   | A   | A   | A   |
| Approach Vol, veh/h          |   | 236   |   |   | 156   |   |  |   |   |   | 1947  |   |
| Approach Delay, s/veh        |   | 29.5  |   |   | 26.1  |   |  |   |   |   | 7.5   |   |
| Approach LOS                 |   | C   |   |   | C   |   |  |   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   | 22.5  |   | 58.5  |  | 22.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   | * 5.5   |   | 6.5   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   | * 17  |   | 52.0  |  | 16.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   | 7.0   |   | 16.1  |  | 7.9   |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   | 1.6   |   | 20.9  |  | 1.4   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 11.0  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |


























HCM 2010 Signalized Intersection Summary  
 2: Northgate Avenue/I-980 NB On Ramp & 27th Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |    |  |  |    |    |  |    |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |   |   |  |    |   |   |   |   |
| Traffic Volume (veh/h)       | 165   | 705   | 0   | 0   | 142   | 307   | 14   | 307   | 11  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 165   | 705   | 0   | 0   | 142   | 307   | 14   | 307   | 11  | 0   | 0   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  |   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   |   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.96  | 1.00   |   | 1.00  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 0   | 1676  | 1676  | 1710   | 1676  | 1710  |   |   |   |
| Adj Flow Rate, veh/h         | 165   | 705   | 0   | 0   | 142   | 63  | 14   | 307   | 6   |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 2   | 0  | 3   | 0   |   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 0   | 2   | 2   | 0  | 2   | 0   |   |   |   |
| Cap, veh/h                   | 349   | 1593  | 0   | 0   | 657   | 495   | 83   | 1940  | 39  |   |   |   |
| Arrive On Green              | 0.07  | 0.16  | 0.00  | 0.00  | 0.21  | 0.21  | 0.43   | 0.43  | 0.41  |   |   |   |
| Sat Flow, veh/h              | 1597  | 3353  | 0   | 0   | 3269  | 2401  | 195  | 4565  | 92  |   |   |   |
| Grp Volume(v), veh/h         | 165   | 705   | 0   | 0   | 142   | 63  | 119  | 99  | 108   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1676  | 0   | 0   | 1593  | 1200  | 1667   | 1526  | 1660  |   |   |   |
| Q Serve(g_s), s              | 7.9   | 15.2  | 0.0   | 0.0   | 3.0   | 1.7   | 3.5  | 3.2   | 3.2   |   |   |   |
| Cycle Q Clear(g_c), s        | 7.9   | 15.2  | 0.0   | 0.0   | 3.0   | 1.7   | 3.5  | 3.2   | 3.2   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 0.12   |   | 0.06  |   |   |   |
| Lane Grp Cap(c), veh/h       | 349   | 1593  | 0   | 0   | 657   | 495   | 708  | 648   | 706   |   |   |   |
| V/C Ratio(X)                 | 0.47  | 0.44  | 0.00  | 0.00  | 0.22  | 0.13  | 0.17   | 0.15  | 0.15  |   |   |   |
| Avail Cap(c_a), veh/h        | 349   | 1593  | 0   | 0   | 657   | 495   | 708  | 648   | 706   |   |   |   |
| HCM Platoon Ratio            | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Uniform Delay (d), s/veh     | 32.7  | 24.1  | 0.0   | 0.0   | 26.4  | 25.9  | 14.2   | 14.1  | 14.2  |   |   |   |
| Incr Delay (d2), s/veh       | 4.5   | 0.9   | 0.0   | 0.0   | 0.8   | 0.5   | 0.5  | 0.5   | 0.5   |   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |   |   |   |
| %ile BackOfQ(50%),veh/ln     | 4.0   | 7.3   | 0.0   | 0.0   | 1.4   | 0.6   | 1.7  | 1.4   | 1.6   |   |   |   |
| LnGrp Delay(d),s/veh         | 37.2  | 25.0  | 0.0   | 0.0   | 27.1  | 26.4  | 14.8   | 14.6  | 14.6  |   |   |   |
| LnGrp LOS                    | D   | C   |   |   | C   | C   | B  | B   | B   |   |   |   |
| Approach Vol, veh/h          |   | 870   |   |   | 205   |   |  | 327   |   |   |   |   |
| Approach Delay, s/veh        |   | 27.3  |   |   | 26.9  |   |  | 14.7  |   |   |   |   |
| Approach LOS                 |   | C   |   |   | C   |   |  | B   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 38.0  |   | 42.0  |   |   | 21.5   | 20.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   |   | 5.5   |   |   | 3.5  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 32.5  |   | 36.5  |   |   | 18.0   | 15.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 5.5   |   | 17.2  |   |   | 9.9  | 5.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.4   |   | 1.4   |   |   | 0.1  | 1.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 24.3  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

























HCM 2010 Signalized Intersection Summary  
3: Telegraph Avenue & 27th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |   |  |  |   |  |  |  |  |  |   |  |
|------------------------------|---|--|---|---|--|---|--|---|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL  | NBT   | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |  | <br> |   |  |  |  |  | <br> |  |
| Traffic Volume (veh/h)       | 260   | 375  | 84  | 39  | 241  | 97  | 59   | 269   | 22  | 44  | 229  | 128   |
| Future Volume (veh/h)        | 260   | 375  | 84  | 39  | 241  | 97  | 59   | 269   | 22  | 44  | 229  | 128   |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5  | 2   | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0  | 0   | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |  | 0.95  | 1.00  |  | 0.92  | 0.99   |   | 0.96  | 0.99  |  | 0.93  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  | 1676   | 1676  | 1676  | 1676  | 1676   | 1676  |
| Adj Flow Rate, veh/h         | 260   | 375  | 84  | 39  | 241  | 97  | 59   | 269   | 10  | 44  | 229  | 61  |
| Adj No. of Lanes             | 1   | 2  | 0   | 1   | 2  | 0   | 1  | 1   | 1   | 1   | 1  | 1   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2  | 2   | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 305   | 817  | 181   | 66  | 370  | 142   | 490  | 837   | 683   | 478   | 837  | 659   |
| Arrive On Green              | 0.19  | 0.32   | 0.32  | 0.01  | 0.06   | 0.06  | 0.50   | 0.50  | 0.50  | 0.50  | 0.50   | 0.50  |
| Sat Flow, veh/h              | 1597  | 2567   | 567   | 1597  | 2190   | 843   | 966  | 1676  | 1368  | 976   | 1676   | 1319  |
| Grp Volume(v), veh/h         | 260   | 231  | 228   | 39  | 172  | 166   | 59   | 269   | 10  | 44  | 229  | 61  |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593   | 1542  | 1597  | 1593   | 1441  | 966  | 1676  | 1368  | 976   | 1676   | 1319  |
| Q Serve(g_s), s              | 13.4  | 9.8  | 10.1  | 2.1   | 9.0  | 9.6   | 3.2  | 8.1   | 0.3   | 2.4   | 6.7  | 2.1   |
| Cycle Q Clear(g_c), s        | 13.4  | 9.8  | 10.1  | 2.1   | 9.0  | 9.6   | 9.9  | 8.1   | 0.3   | 10.5  | 6.7  | 2.1   |
| Prop In Lane                 | 1.00  |  | 0.37  | 1.00  |  | 0.59  | 1.00   |   | 1.00  | 1.00  |  | 1.00  |
| Lane Grp Cap(c), veh/h       | 305   | 507  | 491   | 66  | 269  | 243   | 490  | 837   | 683   | 478   | 837  | 659   |
| V/C Ratio(X)                 | 0.85  | 0.45   | 0.47  | 0.59  | 0.64   | 0.68  | 0.12   | 0.32  | 0.01  | 0.09  | 0.27   | 0.09  |
| Avail Cap(c_a), veh/h        | 376   | 507  | 491   | 376   | 412  | 373   | 490  | 837   | 683   | 478   | 837  | 659   |
| HCM Platoon Ratio            | 1.00  | 1.00   | 1.00  | 0.33  | 0.33   | 0.33  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.57  | 0.57   | 0.57  | 0.89  | 0.89   | 0.89  | 0.97   | 0.97  | 0.97  | 1.00  | 1.00   | 1.00  |
| Uniform Delay (d), s/veh     | 33.2  | 23.1   | 23.1  | 41.2  | 37.6   | 37.8  | 15.2   | 12.7  | 10.7  | 15.8  | 12.3   | 11.2  |
| Incr Delay (d2), s/veh       | 7.6   | 0.1  | 0.1   | 2.8   | 0.9  | 1.1   | 0.5  | 1.0   | 0.0   | 0.4   | 0.8  | 0.3   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 6.5   | 4.3  | 4.3   | 1.0   | 4.0  | 3.9   | 0.9  | 4.0   | 0.1   | 0.7   | 3.3  | 0.8   |
| LnGrp Delay(d),s/veh         | 40.8  | 23.2   | 23.2  | 44.0  | 38.5   | 39.0  | 15.7   | 13.7  | 10.8  | 16.2  | 13.2   | 11.5  |
| LnGrp LOS                    | D   | C  | C   | D   | D  | D   | B  | B   | B   | B   | B  | B   |
| Approach Vol, veh/h          |   | 719  |   |   | 377  |   |  | 338   |   |   | 334  |   |
| Approach Delay, s/veh        |   | 29.6   |   |   | 39.3   |   |  | 14.0  |   |   | 13.2   |   |
| Approach LOS                 |   | C  |   |   | D  |   |  | B   |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7  | 8   |   |   |  |   |
| Assigned Phs                 |   | 2  | 3   | 4   |  | 6   | 7  | 8   |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 46.4   | 7.5   | 31.1  |  | 46.4  | 20.2   | 18.4  |   |   |  |   |
| Change Period (Y+Rc), s      |   | 5.5  | 4.5   | 3.5   |  | 5.5   | 4.5  | 3.5   |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 29.5   | 19.5  | 22.5  |  | 29.5  | 19.5   | 22.5  |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 11.9   | 4.1   | 12.1  |  | 12.5  | 15.4   | 11.6  |   |   |  |   |
| Green Ext Time (p_c), s      |   | 2.9  | 0.1   | 2.5   |  | 2.9   | 0.4  | 1.1   |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |  |   |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  | 25.6  |   |  |   |  |   |   |   |  |   |
| HCM 2010 LOS                 |   |  | C   |   |  |   |  |   |   |   |  |   |













HCM 2010 Signalized Intersection Summary  
4: Broadway & 27th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |   |  |  |   |  |   |   |  |  |   |  |
|------------------------------|---|--|---|---|--|---|---|--|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |   | <br> |  |  | <br> |   |  | <br> |   |
| Traffic Volume (veh/h)       | 143   | 171  | 187   | 54  | 232  | 215   | 74  | 442  | 29  | 93  | 469  | 100   |
| Future Volume (veh/h)        | 143   | 171  | 187   | 54  | 232  | 215   | 74  | 442  | 29  | 93  | 469  | 100   |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5   | 2  | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 0.97  |  | 0.94  | 0.97  |  | 1.00  | 0.98  |  | 0.94  | 0.98  |  | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 0.90  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1710  | 1676   | 1676  | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 143   | 171  | 55  | 54  | 232  | 0   | 74  | 442  | 26  | 93  | 469  | 87  |
| Adj No. of Lanes             | 1   | 2  | 0   | 0   | 2  | 1   | 1   | 2  | 0   | 1   | 2  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 346   | 780  | 240   | 199   | 798  | 471   | 420   | 1576   | 92  | 526   | 1440   | 264   |
| Arrive On Green              | 0.55  | 0.55   | 0.54  | 0.33  | 0.33   | 0.00  | 1.00  | 1.00   | 1.00  | 0.55  | 0.55   | 0.54  |
| Sat Flow, veh/h              | 999   | 2358   | 725   | 427   | 2412   | 1425  | 752   | 2889   | 169   | 809   | 2638   | 485   |
| Grp Volume(v), veh/h         | 143   | 113  | 113   | 149   | 137  | 0   | 74  | 243  | 225   | 93  | 281  | 275   |
| Grp Sat Flow(s),veh/h/ln     | 999   | 1593   | 1490  | 1390  | 1449   | 1425  | 752   | 1593   | 1466  | 809   | 1593   | 1530  |
| Q Serve(g_s), s              | 9.0   | 3.1  | 3.3   | 2.6   | 5.9  | 0.0   | 1.9   | 0.0  | 0.0   | 5.0   | 8.3  | 8.5   |
| Cycle Q Clear(g_c), s        | 14.9  | 3.1  | 3.3   | 6.1   | 5.9  | 0.0   | 10.3  | 0.0  | 0.0   | 5.0   | 8.3  | 8.5   |
| Prop In Lane                 | 1.00  |  | 0.49  | 0.36  |  | 1.00  | 1.00  |  | 0.12  | 1.00  |  | 0.32  |
| Lane Grp Cap(c), veh/h       | 346   | 527  | 493   | 517   | 479  | 471   | 420   | 869  | 800   | 526   | 869  | 835   |
| V/C Ratio(X)                 | 0.41  | 0.21   | 0.23  | 0.29  | 0.29   | 0.00  | 0.18  | 0.28   | 0.28  | 0.18  | 0.32   | 0.33  |
| Avail Cap(c_a), veh/h        | 438   | 675  | 631   | 642   | 614  | 604   | 420   | 869  | 800   | 526   | 869  | 835   |
| HCM Platoon Ratio            | 1.67  | 1.67   | 1.67  | 1.00  | 1.00   | 1.00  | 2.00  | 2.00   | 2.00  | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.91  | 0.91   | 0.91  | 0.71  | 0.71   | 0.00  | 0.99  | 0.99   | 0.99  | 1.00  | 1.00   | 1.00  |
| Uniform Delay (d), s/veh     | 18.3  | 13.4   | 13.6  | 21.0  | 21.0   | 0.0   | 0.9   | 0.0  | 0.0   | 9.9   | 10.7   | 10.7  |
| Incr Delay (d2), s/veh       | 0.3   | 0.1  | 0.1   | 0.1   | 0.1  | 0.0   | 0.9   | 0.8  | 0.9   | 0.7   | 1.0  | 1.1   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.5   | 1.3  | 1.4   | 2.6   | 2.4  | 0.0   | 0.5   | 0.2  | 0.2   | 1.2   | 3.8  | 3.8   |
| LnGrp Delay(d),s/veh         | 18.5  | 13.5   | 13.7  | 21.0  | 21.1   | 0.0   | 1.9   | 0.8  | 0.9   | 10.6  | 11.6   | 11.8  |
| LnGrp LOS                    | B   | B  | B   | C   | C  |   | A   | A  | A   | B   | B  | B   |
| Approach Vol, veh/h          |   | 369  |   |   | 286  |   |   | 542  |   |   | 649  |   |
| Approach Delay, s/veh        |   | 15.5   |   |   | 21.1   |   |   | 1.0  |   |   | 11.6   |   |
| Approach LOS                 |   | B  |   |   | C  |   |   | A  |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7   | 8  |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  | 6   |   | 8  |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 51.9   |   | 33.1  |  | 51.9  |   | 33.1   |   |   |  |   |
| Change Period (Y+Rc), s      |   | 6.0  |   | 5.5   |  | 6.0   |   | 5.5  |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 38.0   |   | 35.5  |  | 38.0  |   | 35.5   |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 12.3   |   | 16.9  |  | 10.5  |   | 8.1  |   |   |  |   |
| Green Ext Time (p_c), s      |   | 6.4  |   | 2.8   |  | 6.5   |   | 3.0  |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 10.7  |  |   |   |  |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | B   |  |   |   |  |   |   |  |   |


















HCM 2010 Signalized Intersection Summary  
5: Telegraph Avenue & 26th Street\

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | WBL   | WBR   | NBT   | NBR   | SBL   | SBT   |   |   |
| Lane Configurations          |  |  |  |  |  |  |   |   |
| Traffic Volume (veh/h)       | 8   | 13  | 335   | 21  | 20  | 326   |   |   |
| Future Volume (veh/h)        | 8   | 13  | 335   | 21  | 20  | 326   |   |   |
| Number                       | 7   | 14  | 2   | 12  | 1   | 6   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  |   | 0.95  | 0.99  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |   |   |
| Adj Flow Rate, veh/h         | 8   | 3   | 335   | 15  | 20  | 326   |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 1   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 21  | 19  | 1506  | 1222  | 883   | 1506  |   |   |
| Arrive On Green              | 0.01  | 0.01  | 0.90  | 0.90  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 1676  | 1360  | 915   | 1676  |   |   |
| Grp Volume(v), veh/h         | 8   | 3   | 335   | 15  | 20  | 326   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 1676  | 1360  | 915   | 1676  |   |   |
| Q Serve(g_s), s              | 0.4   | 0.2   | 2.2   | 0.1   | 0.1   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.4   | 0.2   | 2.2   | 0.1   | 2.2   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 21  | 19  | 1506  | 1222  | 883   | 1506  |   |   |
| V/C Ratio(X)                 | 0.37  | 0.16  | 0.22  | 0.01  | 0.02  | 0.22  |   |   |
| Avail Cap(c_a), veh/h        | 423   | 377   | 1506  | 1222  | 883   | 1506  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.97  | 0.97  | 0.97  | 0.97  |   |   |
| Uniform Delay (d), s/veh     | 41.6  | 41.5  | 0.5   | 0.4   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 3.9   | 1.4   | 0.3   | 0.0   | 0.0   | 0.3   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.2   | 0.1   | 1.1   | 0.0   | 0.0   | 0.1   |   |   |
| LnGrp Delay(d),s/veh         | 45.5  | 42.8  | 0.9   | 0.5   | 0.1   | 0.3   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   | A   | A   |   |   |
| Approach Vol, veh/h          | 11  |   | 350   |   |   | 346   |   |   |
| Approach Delay, s/veh        | 44.8  |   | 0.9   |   |   | 0.3   |   |   |
| Approach LOS                 | D   |   | A   |   |   | A   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.9  |   | 5.1   |   | 79.9  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 55.0  |   | 22.5  |   | 55.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.2   |   | 2.4   |   | 4.2   |   |   |
| Green Ext Time (p_c), s      |   | 1.7   |   | 0.0   |   | 1.7   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.3   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
6: Broadway & 26th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |   |   |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 1   | 2   | 10  | 0   | 0   | 0   | 16  | 521   | 23  | 19  | 679   | 17  |
| Future Volume (veh/h)        | 1   | 2   | 10  | 0   | 0   | 0   | 16  | 521   | 23  | 19  | 679   | 17  |
| Number                       | 7   | 4   | 14  |   |   |   | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  |   |   |   | 0.98  |   | 0.91  | 0.97  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 1   | 2   | 0   |   |   |   | 16  | 521   | 22  | 19  | 679   | 16  |
| Adj No. of Lanes             | 0   | 1   | 0   |   |   |   | 1   | 2   | 0   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 65  | 130   | 0   |   |   |   | 582   | 2352  | 99  | 654   | 2403  | 57  |
| Arrive On Green              | 0.12  | 0.12  | 0.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 550   | 1099  | 0   |   |   |   | 656   | 3101  | 131   | 751   | 3169  | 75  |
| Grp Volume(v), veh/h         | 3   | 0   | 0   |   |   |   | 16  | 267   | 276   | 19  | 341   | 354   |
| Grp Sat Flow(s),veh/h/ln     | 1649  | 0   | 0   |   |   |   | 656   | 1593  | 1639  | 751   | 1593  | 1651  |
| Q Serve(g_s), s              | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 | 0.33  |   | 0.00  |   |   |   | 1.00  |   | 0.08  | 1.00  |   | 0.05  |
| Lane Grp Cap(c), veh/h       | 195   | 0   | 0   |   |   |   | 582   | 1208  | 1243  | 654   | 1208  | 1252  |
| V/C Ratio(X)                 | 0.02  | 0.00  | 0.00  |   |   |   | 0.03  | 0.22  | 0.22  | 0.03  | 0.28  | 0.28  |
| Avail Cap(c_a), veh/h        | 708   | 0   | 0   |   |   |   | 582   | 1208  | 1243  | 654   | 1208  | 1252  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  |   |   |   | 0.98  | 0.98  | 0.98  | 0.97  | 0.97  | 0.97  |
| Uniform Delay (d), s/veh     | 33.1  | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.0   |   |   |   | 0.1   | 0.4   | 0.4   | 0.1   | 0.6   | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.1   | 0.1   | 0.0   | 0.2   | 0.2   |
| LnGrp Delay(d),s/veh         | 33.1  | 0.0   | 0.0   |   |   |   | 0.1   | 0.4   | 0.4   | 0.1   | 0.6   | 0.5   |
| LnGrp LOS                    | C   |   |   |   |   |   | A   | A   | A   | A   | A   | A   |
| Approach Vol, veh/h          |   | 3   |   |   |   |   |   | 559   |   |   | 714   |   |
| Approach Delay, s/veh        |   | 33.1  |   |   |   |   |   | 0.4   |   |   | 0.5   |   |
| Approach LOS                 |   | C   |   |   |   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 69.5  |   | 15.5  |   | 69.5  |   |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |   |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 36.5  |   | 18.0  |   |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.1   |   | 2.0   |   |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.4   |   | 0.0   |   | 3.1   |   |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 0.6   |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |   |   |   |   |

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & 25th Street

2100 Telegraph  
Existing Conditions AM



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↗     |      |      |      | ↖    |      | ↕     | ↗    | ↖     | ↕    |      |
| Traffic Volume (vph)   | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 473   | 5    | 248   | 427  | 16   |
| Future Volume (vph)    | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 473   | 5    | 248   | 427  | 16   |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.5   |      |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      | 1.00 |      | 0.95  |      | 1.00  | 0.95 |      |
| Frbp, ped/bikes        |      | 0.95  |      |      |      | 1.00 |      | 1.00  |      | 1.00  | 0.99 |      |
| Flpb, ped/bikes        |      | 1.00  |      |      |      | 1.00 |      | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      | 0.90  |      |      |      | 0.86 |      | 1.00  |      | 1.00  | 0.99 |      |
| Flt Protected          |      | 1.00  |      |      |      | 1.00 |      | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      | 1439  |      |      |      | 1450 |      | 3162  |      | 1593  | 3136 |      |
| Flt Permitted          |      | 1.00  |      |      |      | 1.00 |      | 0.94  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      | 1439  |      |      |      | 1450 |      | 2990  |      | 1593  | 3136 |      |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 473   | 5    | 248   | 427  | 16   |
| RTOR Reduction (vph)   | 0    | 22    | 0    | 0    | 0    | 39   | 0    | 1     | 0    | 0     | 3    | 0    |
| Lane Group Flow (vph)  | 0    | 10    | 0    | 0    | 0    | 14   | 0    | 488   | 0    | 248   | 440  | 0    |
| Confl. Peds. (#/hr)    |      |       | 16   | 16   |      |      | 121  |       | 82   |       |      | 121  |
| Confl. Bikes (#/hr)    |      |       |      |      |      |      |      |       | 8    |       |      | 61   |
| Turn Type              |      | NA    |      |      |      | Prot | Perm | NA    |      | Prot  | NA   |      |
| Protected Phases       |      | 4     |      |      |      | 8    |      | 2     |      | 3     | 6    |      |
| Permitted Phases       |      |       |      |      |      |      | 2    |       |      |       |      |      |
| Actuated Green, G (s)  |      | 3.7   |      |      |      | 22.3 |      | 53.2  |      | 16.6  | 53.2 |      |
| Effective Green, g (s) |      | 3.7   |      |      |      | 22.3 |      | 53.2  |      | 16.6  | 53.2 |      |
| Actuated g/C Ratio     |      | 0.04  |      |      |      | 0.26 |      | 0.63  |      | 0.20  | 0.63 |      |
| Clearance Time (s)     |      | 4.5   |      |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0  |      |
| Vehicle Extension (s)  |      | 2.0   |      |      |      | 2.0  |      | 2.0   |      | 2.0   | 2.0  |      |
| Lane Grp Cap (vph)     |      | 62    |      |      |      | 380  |      | 1871  |      | 311   | 1962 |      |
| v/s Ratio Prot         |      | c0.01 |      |      |      | 0.01 |      |       |      | c0.16 | 0.14 |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      | c0.16 |      |       |      |      |
| v/c Ratio              |      | 0.16  |      |      |      | 0.04 |      | 0.26  |      | 0.80  | 0.22 |      |
| Uniform Delay, d1      |      | 39.2  |      |      |      | 23.3 |      | 7.1   |      | 32.6  | 6.9  |      |
| Progression Factor     |      | 1.00  |      |      |      | 1.00 |      | 0.85  |      | 0.84  | 1.35 |      |
| Incremental Delay, d2  |      | 0.4   |      |      |      | 0.0  |      | 0.3   |      | 12.3  | 0.3  |      |
| Delay (s)              |      | 39.6  |      |      |      | 23.4 |      | 6.4   |      | 39.7  | 9.6  |      |
| Level of Service       |      | D     |      |      |      | C    |      | A     |      | D     | A    |      |
| Approach Delay (s)     |      | 39.6  |      |      | 23.4 |      |      | 6.4   |      |       | 20.4 |      |
| Approach LOS           |      | D     |      |      | C    |      |      | A     |      |       | C    |      |

### Intersection Summary












|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 15.6  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.37  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 11.5 |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group



HCM 2010 Signalized Intersection Summary  
8: Telegraph Avenue & 24th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBR   | NBL   | NBT   | SBT   | SBR   |   |   |
| Lane Configurations          |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 22  | 62  | 18  | 348   | 310   | 24  |   |   |
| Future Volume (veh/h)        | 22  | 62  | 18  | 348   | 310   | 24  |   |   |
| Number                       | 7   | 14  | 5   | 2   | 6   | 16  |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  | 0.97  |   |   | 0.89  |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1710  |   |   |
| Adj Flow Rate, veh/h         | 22  | 12  | 18  | 348   | 310   | 24  |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 0   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 52  | 46  | 884   | 1474  | 1337  | 104   |   |   |
| Arrive On Green              | 0.03  | 0.03  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 909   | 1676  | 1521  | 118   |   |   |
| Grp Volume(v), veh/h         | 22  | 12  | 18  | 348   | 0   | 334   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 909   | 1676  | 0   | 1639  |   |   |
| Q Serve(g_s), s              | 1.1   | 0.7   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 1.1   | 0.7   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  | 1.00  |   |   | 0.07  |   |   |
| Lane Grp Cap(c), veh/h       | 52  | 46  | 884   | 1474  | 0   | 1441  |   |   |
| V/C Ratio(X)                 | 0.42  | 0.26  | 0.02  | 0.24  | 0.00  | 0.23  |   |   |
| Avail Cap(c_a), veh/h        | 441   | 394   | 884   | 1474  | 0   | 1441  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.97  | 0.97  | 0.00  | 0.97  |   |   |
| Uniform Delay (d), s/veh     | 40.3  | 40.1  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 2.0   | 1.1   | 0.0   | 0.4   | 0.0   | 0.4   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.5   | 0.3   | 0.0   | 0.1   | 0.0   | 0.1   |   |   |
| LnGrp Delay(d),s/veh         | 42.4  | 41.2  | 0.0   | 0.4   | 0.0   | 0.4   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   |   | A   |   |   |
| Approach Vol, veh/h          | 34  |   |   | 366   | 334   |   |   |   |
| Approach Delay, s/veh        | 42.0  |   |   | 0.3   | 0.4   |   |   |   |
| Approach LOS                 | D   |   |   | A   | A   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 78.2  |   | 6.8   |   | 78.2  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 54.0  |   | 23.5  |   | 54.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 3.1   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 1.7   |   | 0.0   |   | 1.7   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 2.3   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

2100 Telegraph  
 Existing Conditions AM



| Movement                          | EBU  | EBL   | EBT   | EBR  | EBR2 | WBL2 | WBL   | WBT   | WBR  | NBL   | NBT                       | NBR  |
|-----------------------------------|------|-------|-------|------|------|------|-------|-------|------|-------|---------------------------|------|
| Lane Configurations               |      | ↔     | ↕     | ↔    |      |      | ↔     | ↕     | ↔    | ↕↔    | ↕↔                        |      |
| Traffic Volume (vph)              | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 307                       | 60   |
| Future Volume (vph)               | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 307                       | 60   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 4.0   | 4.0   | 4.0  |      |      | 4.0   | 4.0   | 4.0  | 4.0   | 4.0                       |      |
| Lane Util. Factor                 |      | 1.00  | 0.95  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 0.97  | 0.95                      |      |
| Frbp, ped/bikes                   |      | 1.00  | 1.00  | 0.87 |      |      | 1.00  | 1.00  | 0.79 | 1.00  | 1.00                      |      |
| Flpb, ped/bikes                   |      | 1.00  | 1.00  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      |      |
| Frt                               |      | 1.00  | 1.00  | 0.85 |      |      | 1.00  | 1.00  | 0.85 | 1.00  | 0.98                      |      |
| Flt Protected                     |      | 0.95  | 1.00  | 1.00 |      |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00                      |      |
| Satd. Flow (prot)                 |      | 1593  | 3185  | 1242 |      |      | 1593  | 1676  | 1121 | 3090  | 3100                      |      |
| Flt Permitted                     |      | 0.95  | 1.00  | 1.00 |      |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00                      |      |
| Satd. Flow (perm)                 |      | 1593  | 3185  | 1242 |      |      | 1593  | 1676  | 1121 | 3090  | 3100                      |      |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 307                       | 60   |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 98   | 0    | 0    | 0     | 0     | 132  | 0     | 9                         | 0    |
| Lane Group Flow (vph)             | 0    | 142   | 112   | 12   | 0    | 0    | 73    | 189   | 31   | 263   | 358                       | 0    |
| Confl. Peds. (#/hr)               |      |       |       | 36   |      |      |       |       | 70   |       |                           |      |
| Confl. Bikes (#/hr)               |      |       |       | 10   |      |      |       |       | 39   |       |                           | 3    |
| Turn Type                         | Prot | Prot  | NA    | Perm |      |      | Prot  | Prot  | NA   | Perm  | Prot                      | NA   |
| Protected Phases                  | 7    | 7     | 4     |      |      |      | 3     | 3     | 8    |       | 5                         | 2    |
| Permitted Phases                  |      |       |       | 4    |      |      |       |       |      | 8     |                           |      |
| Actuated Green, G (s)             |      | 17.7  | 13.9  | 13.9 |      |      | 7.0   | 25.9  | 25.9 | 16.0  | 63.1                      |      |
| Effective Green, g (s)            |      | 18.7  | 14.9  | 14.9 |      |      | 8.0   | 26.9  | 26.9 | 17.0  | 64.1                      |      |
| Actuated g/C Ratio                |      | 0.13  | 0.11  | 0.11 |      |      | 0.06  | 0.19  | 0.19 | 0.12  | 0.46                      |      |
| Clearance Time (s)                |      | 5.0   | 5.0   | 5.0  |      |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0                       |      |
| Vehicle Extension (s)             |      | 3.0   | 3.0   | 3.0  |      |      | 3.0   | 3.0   | 3.0  | 3.0   | 3.0                       |      |
| Lane Grp Cap (vph)                |      | 212   | 338   | 132  |      |      | 91    | 322   | 215  | 375   | 1419                      |      |
| v/s Ratio Prot                    |      | c0.09 | 0.04  |      |      |      | c0.05 | c0.11 |      | c0.09 | c0.12                     |      |
| v/s Ratio Perm                    |      |       |       | 0.01 |      |      |       |       | 0.03 |       |                           |      |
| v/c Ratio                         |      | 0.67  | 0.33  | 0.09 |      |      | 0.80  | 0.59  | 0.15 | 0.70  | 0.25                      |      |
| Uniform Delay, d1                 |      | 57.7  | 57.9  | 56.4 |      |      | 65.2  | 51.5  | 47.0 | 59.1  | 23.3                      |      |
| Progression Factor                |      | 1.00  | 1.00  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      |      |
| Incremental Delay, d2             |      | 7.8   | 0.6   | 0.3  |      |      | 38.2  | 2.7   | 0.3  | 5.8   | 0.4                       |      |
| Delay (s)                         |      | 65.5  | 58.5  | 56.7 |      |      | 103.4 | 54.2  | 47.3 | 64.9  | 23.7                      |      |
| Level of Service                  |      | E     | E     | E    |      |      | F     | D     | D    | E     | C                         |      |
| Approach Delay (s)                |      |       | 60.7  |      |      |      |       | 60.0  |      |       | 40.9                      |      |
| Approach LOS                      |      |       | E     |      |      |      |       | E     |      |       | D                         |      |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |       |       |      |       |                           |      |
| HCM 2000 Control Delay            |      |       | 46.8  |      |      |      |       |       |      |       | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.75  |      |      |      |       |       |      |       |                           |      |
| Actuated Cycle Length (s)         |      |       | 140.0 |      |      |      |       |       |      |       | Sum of lost time (s)      | 21.0 |
| Intersection Capacity Utilization |      |       | 78.1% |      |      |      |       |       |      |       | ICU Level of Service      | D    |
| Analysis Period (min)             |      |       | 15    |      |      |      |       |       |      |       |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

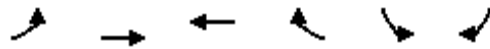
2100 Telegraph  
 Existing Conditions AM



| Movement                    | SBL  | SBT   | SBR  | SBR2 |
|-----------------------------|------|-------|------|------|
| Lane Configurations         | ↙    | ↑↑    |      |      |
| Traffic Volume (vph)        | 91   | 851   | 92   | 125  |
| Future Volume (vph)         | 91   | 851   | 92   | 125  |
| Ideal Flow (vphpl)          | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0  | 4.0   |      |      |
| Lane Util. Factor           | 1.00 | 0.95  |      |      |
| Frbp, ped/bikes             | 1.00 | 0.99  |      |      |
| Flpb, ped/bikes             | 1.00 | 1.00  |      |      |
| Frt                         | 1.00 | 0.97  |      |      |
| Flt Protected               | 0.95 | 1.00  |      |      |
| Satd. Flow (prot)           | 1593 | 3054  |      |      |
| Flt Permitted               | 0.95 | 1.00  |      |      |
| Satd. Flow (perm)           | 1593 | 3054  |      |      |
| Peak-hour factor, PHF       | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 91   | 851   | 92   | 125  |
| RTOR Reduction (vph)        | 0    | 7     | 0    | 0    |
| Lane Group Flow (vph)       | 91   | 1061  | 0    | 0    |
| Confl. Peds. (#/hr)         |      |       |      |      |
| Confl. Bikes (#/hr)         |      |       | 41   |      |
| Turn Type                   | Prot | NA    |      |      |
| Protected Phases            | 1    | 6     |      |      |
| Permitted Phases            |      |       |      |      |
| Actuated Green, G (s)       | 13.3 | 60.4  |      |      |
| Effective Green, g (s)      | 14.3 | 61.4  |      |      |
| Actuated g/C Ratio          | 0.10 | 0.44  |      |      |
| Clearance Time (s)          | 5.0  | 5.0   |      |      |
| Vehicle Extension (s)       | 3.0  | 3.0   |      |      |
| Lane Grp Cap (vph)          | 162  | 1339  |      |      |
| v/s Ratio Prot              | 0.06 | c0.35 |      |      |
| v/s Ratio Perm              |      |       |      |      |
| v/c Ratio                   | 0.56 | 0.79  |      |      |
| Uniform Delay, d1           | 59.9 | 33.8  |      |      |
| Progression Factor          | 1.00 | 1.00  |      |      |
| Incremental Delay, d2       | 4.4  | 4.9   |      |      |
| Delay (s)                   | 64.3 | 38.7  |      |      |
| Level of Service            | E    | D     |      |      |
| Approach Delay (s)          |      | 40.7  |      |      |
| Approach LOS                |      | D     |      |      |
| <b>Intersection Summary</b> |      |       |      |      |

HCM 2010 Signalized Intersection Summary  
 10: Grand Avenue & Northgate Avenue


























2100 Telegraph  
 Existing Conditions AM



| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |   |
|------------------------------|------|------|------|------|------|------|---|---|
| Lane Configurations          |      |      |      |      |      |      |   |   |
| Traffic Volume (veh/h)       | 143  | 460  | 449  | 115  | 619  | 198  |   |   |
| Future Volume (veh/h)        | 143  | 460  | 449  | 115  | 619  | 198  |   |   |
| Number                       | 5    | 2    | 6    | 16   | 7    | 14   |   |   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.96 | 1.00 | 1.00 |   |   |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1710 | 1676 | 1676 |   |   |
| Adj Flow Rate, veh/h         | 143  | 460  | 449  | 90   | 619  | 67   |   |   |
| Adj No. of Lanes             | 1    | 2    | 2    | 0    | 2    | 1    |   |   |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |   |
| Cap, veh/h                   | 423  | 2078 | 888  | 176  | 791  | 353  |   |   |
| Arrive On Green              | 0.53 | 1.00 | 0.34 | 0.33 | 0.25 | 0.25 |   |   |
| Sat Flow, veh/h              | 1597 | 3269 | 2714 | 523  | 3193 | 1425 |   |   |
| Grp Volume(v), veh/h         | 143  | 460  | 270  | 269  | 619  | 67   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597 | 1593 | 1593 | 1561 | 1597 | 1425 |   |   |
| Q Serve(g_s), s              | 4.1  | 0.0  | 10.8 | 11.0 | 14.5 | 3.0  |   |   |
| Cycle Q Clear(g_c), s        | 4.1  | 0.0  | 10.8 | 11.0 | 14.5 | 3.0  |   |   |
| Prop In Lane                 | 1.00 |      |      | 0.34 | 1.00 | 1.00 |   |   |
| Lane Grp Cap(c), veh/h       | 423  | 2078 | 538  | 527  | 791  | 353  |   |   |
| V/C Ratio(X)                 | 0.34 | 0.22 | 0.50 | 0.51 | 0.78 | 0.19 |   |   |
| Avail Cap(c_a), veh/h        | 423  | 2078 | 538  | 527  | 1158 | 517  |   |   |
| HCM Platoon Ratio            | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Upstream Filter(I)           | 0.89 | 0.89 | 0.96 | 0.96 | 1.00 | 1.00 |   |   |
| Uniform Delay (d), s/veh     | 14.8 | 0.0  | 21.1 | 21.3 | 28.1 | 23.8 |   |   |
| Incr Delay (d2), s/veh       | 0.2  | 0.2  | 3.2  | 3.4  | 1.2  | 0.1  |   |   |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |   |
| %ile BackOfQ(50%),veh/ln     | 1.8  | 0.1  | 5.2  | 5.2  | 6.5  | 2.6  |   |   |
| LnGrp Delay(d),s/veh         | 14.9 | 0.2  | 24.4 | 24.7 | 29.3 | 23.9 |   |   |
| LnGrp LOS                    | B    | A    | C    | C    | C    | C    |   |   |
| Approach Vol, veh/h          |      | 603  | 539  |      | 686  |      |   |   |
| Approach Delay, s/veh        |      | 3.7  | 24.5 |      | 28.7 |      |   |   |
| Approach LOS                 |      | A    | C    |      | C    |      |   |   |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8 |
| Assigned Phs                 |      | 2    |      | 4    | 5    | 6    |   |   |
| Phs Duration (G+Y+Rc), s     |      | 56.2 |      | 23.8 | 25.2 | 31.0 |   |   |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  | 4.5  | 4.5  |   |   |
| Max Green Setting (Gmax), s  |      | 42.5 |      | 28.5 | 11.5 | 26.5 |   |   |
| Max Q Clear Time (g_c+I1), s |      | 2.0  |      | 16.5 | 6.1  | 13.0 |   |   |
| Green Ext Time (p_c), s      |      | 3.0  |      | 2.8  | 1.4  | 2.0  |   |   |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |   |
| HCM 2010 Ctrl Delay          |      |      | 19.2 |      |      |      |   |   |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |   |
| <b>Notes</b>                 |      |      |      |      |      |      |   |   |

HCM 2010 Signalized Intersection Summary  
 11: Telegraph Avenue & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |    |  |  |    |  |   |  |  |  |    |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |  |   |   |  |  |  |  |   |  |
| Traffic Volume (veh/h)       | 102   | 636   | 326   | 51  | 361   | 39  | 129   | 214   | 43  | 50  | 295   | 70  |
| Future Volume (veh/h)        | 102   | 636   | 326   | 51  | 361   | 39  | 129   | 214   | 43  | 50  | 295   | 70  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.92  | 1.00  |   | 0.92  | 0.98  |   | 0.96  | 0.97  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 102   | 636   | 326   | 51  | 361   | 39  | 129   | 214   | 22  | 50  | 295   | 26  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 421   | 822   | 421   | 157   | 1199  | 128   | 463   | 820   | 667   | 451   | 614   | 472   |
| Arrive On Green              | 0.42  | 0.42  | 0.41  | 0.83  | 0.83  | 0.82  | 0.08  | 0.49  | 0.49  | 0.73  | 0.73  | 0.73  |
| Sat Flow, veh/h              | 865   | 1971  | 1010  | 523   | 2877  | 308   | 1597  | 1676  | 1364  | 998   | 1676  | 1287  |
| Grp Volume(v), veh/h         | 102   | 514   | 448   | 51  | 198   | 202   | 129   | 214   | 22  | 50  | 295   | 26  |
| Grp Sat Flow(s),veh/h/ln     | 865   | 1593  | 1389  | 523   | 1593  | 1593  | 1597  | 1676  | 1364  | 998   | 1676  | 1287  |
| Q Serve(g_s), s              | 6.9   | 23.6  | 23.7  | 7.4   | 2.3   | 2.4   | 4.1   | 6.4   | 0.7   | 1.3   | 6.2   | 0.5   |
| Cycle Q Clear(g_c), s        | 9.4   | 23.6  | 23.7  | 31.1  | 2.3   | 2.4   | 4.1   | 6.4   | 0.7   | 1.3   | 6.2   | 0.5   |
| Prop In Lane                 | 1.00  |   | 0.73  | 1.00  |   | 0.19  | 1.00  |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 421   | 664   | 579   | 157   | 664   | 664   | 463   | 820   | 667   | 451   | 614   | 472   |
| V/C Ratio(X)                 | 0.24  | 0.77  | 0.77  | 0.32  | 0.30  | 0.30  | 0.28  | 0.26  | 0.03  | 0.11  | 0.48  | 0.06  |
| Avail Cap(c_a), veh/h        | 432   | 684   | 596   | 164   | 684   | 684   | 511   | 820   | 667   | 451   | 614   | 472   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.84  | 0.84  | 0.84  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.97  | 0.97  | 0.97  |
| Uniform Delay (d), s/veh     | 18.0  | 21.3  | 21.5  | 17.3  | 4.3   | 4.4   | 14.6  | 12.7  | 11.3  | 7.4   | 8.0   | 7.3   |
| Incr Delay (d2), s/veh       | 0.1   | 4.1   | 4.7   | 0.4   | 0.1   | 0.1   | 0.1   | 0.8   | 0.1   | 0.5   | 2.6   | 0.2   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.7   | 11.0  | 9.7   | 1.1   | 1.0   | 1.0   | 1.8   | 3.1   | 0.3   | 0.4   | 3.1   | 0.2   |
| LnGrp Delay(d),s/veh         | 18.1  | 25.4  | 26.2  | 17.8  | 4.4   | 4.5   | 14.7  | 13.5  | 11.4  | 7.8   | 10.6  | 7.5   |
| LnGrp LOS                    | B   | C   | C   | B   | A   | A   | B   | B   | B   | A   | B   | A   |
| Approach Vol, veh/h          |   | 1064  |   |   | 451   |   |   | 365   |   |   | 371   |   |
| Approach Delay, s/veh        |   | 25.0  |   |   | 6.0   |   |   | 13.8  |   |   | 10.0  |   |
| Approach LOS                 |   | C   |   |   | A   |   |   | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 45.6  |   | 39.4  | 10.4  | 35.1  |   | 39.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   | 4.5   | 4.5   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.5  |   | 36.0  | 8.5   | 25.5  |   | 36.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 8.4   |   | 25.7  | 6.1   | 8.2   |   | 33.1  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.8   |   | 4.8   | 0.1   | 2.5   |   | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 16.9  |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |   |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 1.1

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕↕   |      |      | ↕↕   |      |      | ↕↕   |      |      | ↕↕   |      |
| Traffic Vol, veh/h       | 27   | 656  | 15   | 20   | 462  | 9    | 2    | 4    | 8    | 3    | 4    | 20   |
| Future Vol, veh/h        | 27   | 656  | 15   | 20   | 462  | 9    | 2    | 4    | 8    | 3    | 4    | 20   |
| Conflicting Peds, #/hr   | 20   | 0    | 36   | 36   | 0    | 20   | 22   | 0    | 35   | 35   | 0    | 22   |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 27   | 656  | 15   | 20   | 462  | 9    | 2    | 4    | 8    | 3    | 4    | 20   |


























| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |      | Minor2 |      |      |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 491    | 0 | 0 | 707    | 0 | 0 | 1049   | 1285 | 407  | 946    | 1288 | 278  |
| Stage 1              | -      | - | - | -      | - | - | 754    | 754  | -    | 527    | 527  | -    |
| Stage 2              | -      | - | - | -      | - | - | 295    | 531  | -    | 419    | 761  | -    |
| Critical Hdwy        | 4.14   | - | - | 4.14   | - | - | 7.54   | 6.54 | 6.94 | 7.54   | 6.54 | 6.94 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.54   | 5.54 | -    | 6.54   | 5.54 | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.54   | 5.54 | -    | 6.54   | 5.54 | -    |
| Follow-up Hdwy       | 2.22   | - | - | 2.22   | - | - | 3.52   | 4.02 | 3.32 | 3.52   | 4.02 | 3.32 |
| Pot Cap-1 Maneuver   | 1069   | - | - | 887    | - | - | 182    | 163  | 593  | 216    | 163  | 719  |
| Stage 1              | -      | - | - | -      | - | - | 367    | 415  | -    | 502    | 527  | -    |
| Stage 2              | -      | - | - | -      | - | - | 689    | 524  | -    | 582    | 412  | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -    | -    | -      | -    | -    |
| Mov Cap-1 Maneuver   | 1047   | - | - | 857    | - | - | 155    | 143  | 554  | 187    | 143  | 691  |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 155    | 143  | -    | 187    | 143  | -    |
| Stage 1              | -      | - | - | -      | - | - | 340    | 384  | -    | 472    | 500  | -    |
| Stage 2              | -      | - | - | -      | - | - | 629    | 498  | -    | 526    | 382  | -    |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.5 | 0.5 | 20.1 | 15.5 |
| HCM LOS              |     |     | C    | C    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 253   | 1047  | -   | -   | 857   | -   | -   | 370   |
| HCM Lane V/C Ratio    | 0.055 | 0.026 | -   | -   | 0.023 | -   | -   | 0.073 |
| HCM Control Delay (s) | 20.1  | 8.5   | 0.2 | -   | 9.3   | 0.1 | -   | 15.5  |
| HCM Lane LOS          | C     | A     | A   | -   | A     | A   | -   | C     |
| HCM 95th %tile Q(veh) | 0.2   | 0.1   | -   | -   | 0.1   | -   | -   | 0.2   |

















HCM 2010 Signalized Intersection Summary  
 13: Broadway & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |   |  |  |   |  |   |   |  |  |   |  |
|------------------------------|---|--|---|---|--|---|---|--|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |   | <br> |   |  | <br> |  |  | <br> |  |
| Traffic Volume (veh/h)       | 57  | 529  | 75  | 101   | 344  | 25  | 99  | 358  | 124   | 50  | 307  | 55  |
| Future Volume (veh/h)        | 57  | 529  | 75  | 101   | 344  | 25  | 99  | 358  | 124   | 50  | 307  | 55  |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5   | 2  | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |  | 0.93  | 0.99  |  | 0.92  | 0.97  |  | 0.88  | 0.94  |  | 0.89  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1710  | 1676   | 1710  | 1676  | 1676   | 1676  | 1676  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 57  | 529  | 58  | 101   | 344  | 19  | 99  | 358  | 78  | 50  | 307  | 43  |
| Adj No. of Lanes             | 1   | 2  | 0   | 0   | 2  | 0   | 1   | 2  | 1   | 1   | 2  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 241   | 959  | 105   | 181   | 628  | 37  | 511   | 1823   | 719   | 545   | 1581   | 218   |
| Arrive On Green              | 0.67  | 0.67   | 0.66  | 0.11  | 0.11   | 0.11  | 1.00  | 1.00   | 1.00  | 0.19  | 0.19   | 0.18  |
| Sat Flow, veh/h              | 910   | 2874   | 314   | 355   | 1883   | 111   | 894   | 3185   | 1256  | 805   | 2764   | 380   |
| Grp Volume(v), veh/h         | 57  | 292  | 295   | 207   | 0  | 257   | 99  | 358  | 78  | 50  | 175  | 175   |
| Grp Sat Flow(s),veh/h/ln     | 910   | 1593   | 1595  | 854   | 0  | 1495  | 894   | 1593   | 1256  | 805   | 1593   | 1552  |
| Q Serve(g_s), s              | 4.0   | 8.2  | 8.3   | 13.2  | 0.0  | 13.8  | 1.9   | 0.0  | 0.0   | 4.4   | 7.8  | 8.1   |
| Cycle Q Clear(g_c), s        | 17.8  | 8.2  | 8.3   | 21.5  | 0.0  | 13.8  | 10.1  | 0.0  | 0.0   | 4.4   | 7.8  | 8.1   |
| Prop In Lane                 | 1.00  |  | 0.20  | 0.49  |  | 0.07  | 1.00  |  | 1.00  | 1.00  |  | 0.25  |
| Lane Grp Cap(c), veh/h       | 241   | 531  | 532   | 348   | 0  | 499   | 511   | 1823   | 719   | 545   | 911  | 888   |
| V/C Ratio(X)                 | 0.24  | 0.55   | 0.55  | 0.60  | 0.00   | 0.51  | 0.19  | 0.20   | 0.11  | 0.09  | 0.19   | 0.20  |
| Avail Cap(c_a), veh/h        | 323   | 675  | 675   | 441   | 0  | 633   | 511   | 1823   | 719   | 545   | 911  | 888   |
| HCM Platoon Ratio            | 2.00  | 2.00   | 2.00  | 0.33  | 0.33   | 0.33  | 2.00  | 2.00   | 2.00  | 0.33  | 0.33   | 0.33  |
| Upstream Filter(I)           | 1.00  | 1.00   | 1.00  | 0.98  | 0.00   | 0.98  | 0.98  | 0.98   | 0.98  | 0.98  | 0.98   | 0.98  |
| Uniform Delay (d), s/veh     | 17.5  | 10.8   | 10.9  | 36.1  | 0.0  | 31.3  | 0.8   | 0.0  | 0.0   | 16.5  | 17.9   | 18.1  |
| Incr Delay (d2), s/veh       | 0.2   | 0.3  | 0.3   | 0.6   | 0.0  | 0.3   | 0.8   | 0.2  | 0.3   | 0.3   | 0.5  | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.0   | 3.5  | 3.6   | 4.8   | 0.0  | 5.8   | 0.6   | 0.1  | 0.1   | 1.0   | 3.6  | 3.6   |
| LnGrp Delay(d),s/veh         | 17.7  | 11.1   | 11.2  | 36.6  | 0.0  | 31.6  | 1.7   | 0.2  | 0.3   | 16.9  | 18.4   | 18.5  |
| LnGrp LOS                    | B   | B  | B   | D   |  | C   | A   | A  | A   | B   | B  | B   |
| Approach Vol, veh/h          |   | 644  |   |   | 464  |   |   | 535  |   |   | 400  |   |
| Approach Delay, s/veh        |   | 11.7   |   |   | 33.9   |   |   | 0.5  |   |   | 18.3   |   |
| Approach LOS                 |   | B  |   |   | C  |   |   | A  |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7   | 8  |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  | 6   |   | 8  |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 52.6   |   | 32.4  |  | 52.6  |   | 32.4   |   |   |  |   |
| Change Period (Y+Rc), s      |   | 5.0  |   | 4.5   |  | 5.0   |   | 4.5  |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 40.0   |   | 35.5  |  | 40.0  |   | 35.5   |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 12.1   |   | 19.8  |  | 10.1  |   | 23.5   |   |   |  |   |
| Green Ext Time (p_c), s      |   | 5.1  |   | 4.9   |  | 5.2   |   | 4.3  |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 15.1  |  |   |   |  |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | B   |  |   |   |  |   |   |  |   |

HCM 2010 Signalized Intersection Summary  
 14: Webster Street & Grand Avenue



















2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 59  | 348   | 283   | 121   | 457   | 48  | 0  | 0   | 0   | 33  | 187   | 21  |
| Future Volume (veh/h)        | 59  | 348   | 283   | 121   | 457   | 48  | 0  | 0   | 0   | 33  | 187   | 21  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  |  |   |   | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.88  | 1.00  |   | 0.88  |  |   |   | 1.00  |   | 0.73  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 59  | 348   | 184   | 121   | 457   | 40  |  |   |   | 33  | 187   | 17  |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 147   | 791   | 403   | 159   | 1839  | 160   |  |   |   | 62  | 350   | 32  |
| Arrive On Green              | 0.16  | 0.16  | 0.15  | 0.10  | 0.63  | 0.61  |  |   |   | 0.28  | 0.28  | 0.28  |
| Sat Flow, veh/h              | 201   | 1644  | 838   | 1597  | 2929  | 255   |  |   |   | 222   | 1260  | 115   |
| Grp Volume(v), veh/h         | 318   | 0   | 273   | 121   | 247   | 250   |  |   |   | 237   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1440  | 0   | 1244  | 1597  | 1593  | 1591  |  |   |   | 1596  | 0   | 0   |
| Q Serve(g_s), s              | 7.2   | 0.0   | 17.0  | 6.3   | 5.8   | 5.9   |  |   |   | 10.7  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 15.8  | 0.0   | 17.0  | 6.3   | 5.8   | 5.9   |  |   |   | 10.7  | 0.0   | 0.0   |
| Prop In Lane                 | 0.19  |   | 0.67  | 1.00  |   | 0.16  |  |   |   | 0.14  |   | 0.07  |
| Lane Grp Cap(c), veh/h       | 743   | 0   | 599   | 159   | 1000  | 999   |  |   |   | 444   | 0   | 0   |
| V/C Ratio(X)                 | 0.43  | 0.00  | 0.46  | 0.76  | 0.25  | 0.25  |  |   |   | 0.53  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 743   | 0   | 599   | 263   | 1000  | 999   |  |   |   | 488   | 0   | 0   |
| HCM Platoon Ratio            | 0.33  | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.81  | 0.00  | 0.81  | 0.95  | 0.95  | 0.95  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 24.9  | 0.0   | 25.8  | 37.3  | 7.0   | 7.0   |  |   |   | 26.0  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 1.5   | 0.0   | 2.0   | 2.7   | 0.6   | 0.6   |  |   |   | 0.4   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 7.0   | 0.0   | 6.2   | 2.9   | 2.7   | 2.7   |  |   |   | 4.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 26.3  | 0.0   | 27.8  | 40.0  | 7.5   | 7.6   |  |   |   | 26.4  | 0.0   | 0.0   |
| LnGrp LOS                    | C   |   | C   | D   | A   | A   |  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 591   |   |   | 618   |   |  |   |   |   | 237   |   |
| Approach Delay, s/veh        |   | 27.0  |   |   | 13.9  |   |  |   |   |   | 26.4  |   |
| Approach LOS                 |   | C   |   |   | B   |   |  |   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 12.5  | 44.9  |   | 27.6  |   | 57.4  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   | 3.5   |   | 5.5   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 13.5  | 31.5  |   | 26.5  |   | 49.5  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 8.3   | 19.0  |   | 12.7  |   | 7.9   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.2   | 4.3   |   | 0.8   |   | 5.9   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 21.3  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |























HCM 2010 Signalized Intersection Summary  
 15: Grand Avenue & Valdez Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 41  | 324   | 0   | 11  | 680   | 25  | 7  | 1   | 3   | 13  | 0   | 38  |
| Future Volume (veh/h)        | 41  | 324   | 0   | 11  | 680   | 25  | 7  | 1   | 3   | 13  | 0   | 38  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 3  | 8   | 18  | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 1.00  | 0.93  |   | 0.83  | 0.89   |   | 0.88  | 0.88  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 41  | 324   | 0   | 11  | 680   | 22  | 7  | 1   | 1   | 13  | 0   | 10  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 389   | 1857  | 0   | 600   | 1823  | 59  | 365  | 51  | 43  | 268   | 15  | 167   |
| Arrive On Green              | 1.00  | 1.00  | 0.00  | 0.58  | 0.58  | 0.58  | 0.32   | 0.32  | 0.32  | 0.32  | 0.00  | 0.32  |
| Sat Flow, veh/h              | 652   | 3269  | 0   | 883   | 3126  | 101   | 898  | 158   | 132   | 625   | 46  | 516   |
| Grp Volume(v), veh/h         | 41  | 324   | 0   | 11  | 346   | 356   | 9  | 0   | 0   | 23  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 652   | 1593  | 0   | 883   | 1593  | 1634  | 1188   | 0   | 0   | 1187  | 0   | 0   |
| Q Serve(g_s), s              | 1.2   | 0.0   | 0.0   | 0.4   | 9.8   | 9.9   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 11.1  | 0.0   | 0.0   | 0.4   | 9.8   | 9.9   | 0.3  | 0.0   | 0.0   | 0.9   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 1.00  |   | 0.06  | 0.78   |   | 0.11  | 0.57  |   | 0.43  |
| Lane Grp Cap(c), veh/h       | 389   | 1857  | 0   | 600   | 929   | 953   | 459  | 0   | 0   | 449   | 0   | 0   |
| V/C Ratio(X)                 | 0.11  | 0.17  | 0.00  | 0.02  | 0.37  | 0.37  | 0.02   | 0.00  | 0.00  | 0.05  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 389   | 1857  | 0   | 600   | 929   | 953   | 522  | 0   | 0   | 512   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.81  | 0.81  | 0.00  | 0.89  | 0.89  | 0.89  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 1.1   | 0.0   | 0.0   | 7.5   | 9.4   | 9.5   | 19.6   | 0.0   | 0.0   | 19.9  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 0.2   | 0.0   | 0.0   | 1.0   | 1.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 0.0   | 0.0   | 0.1   | 4.6   | 4.7   | 0.1  | 0.0   | 0.0   | 0.4   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 1.5   | 0.2   | 0.0   | 7.5   | 10.5  | 10.4  | 19.6   | 0.0   | 0.0   | 19.9  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   |   | A   | B   | B   | B  |   |   | B   |   |   |
| Approach Vol, veh/h          |   | 365   |   |   | 713   |   |  | 9   |   |   |   | 23  |
| Approach Delay, s/veh        |   | 0.3   |   |   | 10.4  |   |  | 19.6  |   |   |   | 19.9  |
| Approach LOS                 |   | A   |   |   | B   |   |  | B   |   |   |   | B   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 53.6  |   | 31.4  |   | 53.6  |  | 31.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 44.5  |   | 31.5  |   | 44.5  |  | 31.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 13.1  |   | 2.9   |   | 11.9  |  | 2.3   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.8   |   | 0.1   |   | 5.8   |  | 0.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 7.4   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

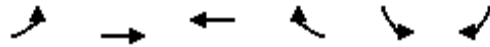
HCM 2010 Signalized Intersection Summary  
 16: Harrison Street & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |   |  |  |
| Traffic Volume (veh/h)       | 56  | 168   | 109   | 453   | 548   | 120   | 53   | 599   | 253   | 9   | 791   | 80  |
| Future Volume (veh/h)        | 56  | 168   | 109   | 453   | 548   | 120   | 53   | 599   | 253   | 9   | 791   | 80  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.82  | 1.00  |   | 0.83  | 0.96   |   | 0.78  | 0.95  |   | 0.77  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1676  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 56  | 168   | 99  | 453   | 548   | 102   | 53   | 599   | 183   | 9   | 791   | 66  |
| Adj No. of Lanes             | 2   | 2   | 0   | 2   | 2   | 0   | 0  | 3   | 1   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 130   | 644   | 337   | 544   | 1286  | 238   | 113  | 1066  | 404   | 46  | 1327  | 109   |
| Arrive On Green              | 0.04  | 0.34  | 0.33  | 0.18  | 0.50  | 0.48  | 0.66   | 0.66  | 0.62  | 0.33  | 0.33  | 0.31  |
| Sat Flow, veh/h              | 3097  | 1871  | 979   | 3097  | 2593  | 479   | 176  | 3243  | 1109  | 16  | 4036  | 330   |
| Grp Volume(v), veh/h         | 56  | 140   | 127   | 453   | 335   | 315   | 138  | 514   | 183   | 324   | 272   | 269   |
| Grp Sat Flow(s),veh/h/ln     | 1549  | 1593  | 1257  | 1549  | 1593  | 1479  | 642  | 1388  | 1109  | 1646  | 1388  | 1348  |
| Q Serve(g_s), s              | 1.6   | 5.7   | 6.7   | 12.7  | 12.1  | 12.4  | 4.9  | 9.1   | 7.9   | 0.0   | 14.7  | 15.1  |
| Cycle Q Clear(g_c), s        | 1.6   | 5.7   | 6.7   | 12.7  | 12.1  | 12.4  | 20.1   | 9.1   | 7.9   | 14.5  | 14.7  | 15.1  |
| Prop In Lane                 | 1.00  |   | 0.78  | 1.00  |   | 0.32  | 0.38   |   | 1.00  | 0.03  |   | 0.24  |
| Lane Grp Cap(c), veh/h       | 130   | 549   | 433   | 544   | 790   | 734   | 266  | 913   | 404   | 582   | 456   | 443   |
| V/C Ratio(X)                 | 0.43  | 0.25  | 0.29  | 0.83  | 0.42  | 0.43  | 0.52   | 0.56  | 0.45  | 0.56  | 0.60  | 0.61  |
| Avail Cap(c_a), veh/h        | 379   | 549   | 433   | 551   | 790   | 734   | 281  | 956   | 422   | 607   | 478   | 464   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.99  | 0.99  | 0.99  | 0.91  | 0.91  | 0.91  | 0.99   | 0.99  | 0.99  | 0.57  | 0.57  | 0.57  |
| Uniform Delay (d), s/veh     | 42.1  | 21.2  | 22.0  | 35.8  | 14.5  | 14.7  | 13.1   | 11.9  | 11.7  | 25.1  | 25.2  | 25.5  |
| Incr Delay (d2), s/veh       | 2.2   | 1.1   | 1.7   | 9.6   | 1.5   | 1.7   | 1.5  | 0.7   | 0.8   | 0.6   | 1.1   | 1.2   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.7   | 2.7   | 2.5   | 6.1   | 5.6   | 5.4   | 1.5  | 3.4   | 2.4   | 6.8   | 5.8   | 5.8   |
| LnGrp Delay(d),s/veh         | 44.3  | 22.3  | 23.7  | 45.4  | 16.0  | 16.4  | 14.7   | 12.6  | 12.5  | 25.7  | 26.3  | 26.7  |
| LnGrp LOS                    | D   | C   | C   | D   | B   | B   | B  | B   | B   | C   | C   | C   |
| Approach Vol, veh/h          |   | 323   |   |   | 1103  |   |  | 835   |   |   | 866   |   |
| Approach Delay, s/veh        |   | 26.7  |   |   | 28.2  |   |  | 12.9  |   |   | 26.2  |   |
| Approach LOS                 |   | C   |   |   | C   |   |  | B   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 33.6  | 7.8   | 48.7  |   | 33.6  | 21.4   | 35.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.6   | 4.0   | 5.6   |   | 5.6   | 5.6  | * 5.6   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.4  | 11.0  | 34.4  |   | 29.4  | 16.0   | * 29  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 22.1  | 3.6   | 14.4  |   | 17.1  | 14.7   | 8.7   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.6   | 0.1   | 7.8   |   | 8.6   | 0.4  | 1.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 23.4  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 17: Grand Avenue & Bay Place





















2100 Telegraph  
 Existing Conditions AM



| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Lane Configurations          |      |      |      |      |      |      |   |      |
| Traffic Volume (veh/h)       | 56   | 414  | 927  | 267  | 104  | 85   |   |      |
| Future Volume (veh/h)        | 56   | 414  | 927  | 267  | 104  | 85   |   |      |
| Number                       | 7    | 4    | 8    | 18   | 5    | 12   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.89 | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1676 | 1676 | 1710 |   |      |
| Adj Flow Rate, veh/h         | 56   | 414  | 927  | 183  | 122  | 0    |   |      |
| Adj No. of Lanes             | 1    | 2    | 2    | 1    | 2    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 0    |   |      |
| Cap, veh/h                   | 358  | 2688 | 2688 | 1058 | 214  | 89   |   |      |
| Arrive On Green              | 1.00 | 1.00 | 0.28 | 0.28 | 0.07 | 0.00 |   |      |
| Sat Flow, veh/h              | 455  | 3269 | 3269 | 1262 | 3193 | 1454 |   |      |
| Grp Volume(v), veh/h         | 56   | 414  | 927  | 183  | 122  | 0    |   |      |
| Grp Sat Flow(s),veh/h/ln     | 455  | 1593 | 1593 | 1262 | 1597 | 1454 |   |      |
| Q Serve(g_s), s              | 3.6  | 0.0  | 20.9 | 9.9  | 3.3  | 0.0  |   |      |
| Cycle Q Clear(g_c), s        | 24.5 | 0.0  | 20.9 | 9.9  | 3.3  | 0.0  |   |      |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 358  | 2688 | 2688 | 1058 | 214  | 89   |   |      |
| V/C Ratio(X)                 | 0.16 | 0.15 | 0.34 | 0.17 | 0.57 | 0.00 |   |      |
| Avail Cap(c_a), veh/h        | 358  | 2688 | 2688 | 1058 | 993  | 444  |   |      |
| HCM Platoon Ratio            | 2.00 | 2.00 | 0.33 | 0.33 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.96 | 0.96 | 0.83 | 0.83 | 1.00 | 0.00 |   |      |
| Uniform Delay (d), s/veh     | 3.4  | 0.0  | 12.6 | 8.8  | 40.7 | 0.0  |   |      |
| Incr Delay (d2), s/veh       | 0.9  | 0.1  | 0.3  | 0.3  | 0.9  | 0.0  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 0.5  | 0.0  | 9.4  | 3.6  | 1.5  | 0.0  |   |      |
| LnGrp Delay(d),s/veh         | 4.3  | 0.1  | 12.9 | 9.1  | 41.6 | 0.0  |   |      |
| LnGrp LOS                    | A    | A    | B    | A    | D    |      |   |      |
| Approach Vol, veh/h          |      | 470  | 1110 |      | 122  |      |   |      |
| Approach Delay, s/veh        |      | 0.6  | 12.3 |      | 41.6 |      |   |      |
| Approach LOS                 |      | A    | B    |      | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 |      | 2    |      | 4    |      |      |   | 8    |
| Phs Duration (G+Y+Rc), s     |      | 10.0 |      | 80.0 |      |      |   | 80.0 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      |      |   | 4.5  |
| Max Green Setting (Gmax), s  |      | 27.5 |      | 53.5 |      |      |   | 53.5 |
| Max Q Clear Time (g_c+I1), s |      | 5.3  |      | 26.5 |      |      |   | 22.9 |
| Green Ext Time (p_c), s      |      | 0.5  |      | 10.4 |      |      |   | 10.8 |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 11.2 |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |      |
| <b>Notes</b>                 |      |      |      |      |      |      |   |      |



















HCM 2010 Signalized Intersection Summary  
 18: Bellevue Avenue/Park View Terrace & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |   |  |  |   |  |  |  |  |  |   |  |
|------------------------------|---|--|---|---|--|---|--|---|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL  | NBT   | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |  | <br> |   |  |   |   |   | <br> |   |
| Traffic Volume (veh/h)       | 19  | 461  | 30  | 42  | 1117   | 13  | 0  | 0   | 0   | 20  | 2  | 49  |
| Future Volume (veh/h)        | 19  | 461  | 30  | 42  | 1117   | 13  | 0  | 0   | 0   | 20  | 2  | 49  |
| Number                       | 3   | 8  | 18  | 7   | 4  | 14  |  |   |   | 5   | 2  | 12  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   |  |   |   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 0.96  |  | 0.88  | 0.95  |  | 0.77  |  |   |   | 1.00  |  | 0.81  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |  |   |   | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  |  |   |   | 1710  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 19  | 461  | 26  | 42  | 1117   | 12  |  |   |   | 20  | 2  | 27  |
| Adj No. of Lanes             | 1   | 2  | 0   | 1   | 2  | 0   |  |   |   | 0   | 1  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |  |   |   | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   |  |   |   | 0   | 2  | 0   |
| Cap, veh/h                   | 343   | 1854   | 104   | 551   | 1961   | 21  |  |   |   | 159   | 16   | 215   |
| Arrive On Green              | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |  |   |   | 0.30  | 0.30   | 0.29  |
| Sat Flow, veh/h              | 431   | 3041   | 171   | 772   | 3216   | 35  |  |   |   | 538   | 54   | 726   |
| Grp Volume(v), veh/h         | 19  | 240  | 247   | 42  | 553  | 576   |  |   |   | 49  | 0  | 0   |
| Grp Sat Flow(s),veh/h/ln     | 431   | 1593   | 1619  | 772   | 1593   | 1658  |  |   |   | 1318  | 0  | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |  |   |   | 2.5   | 0.0  | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |  |   |   | 2.5   | 0.0  | 0.0   |
| Prop In Lane                 | 1.00  |  | 0.11  | 1.00  |  | 0.02  |  |   |   | 0.41  |  | 0.55  |
| Lane Grp Cap(c), veh/h       | 343   | 971  | 987   | 551   | 971  | 1011  |  |   |   | 390   | 0  | 0   |
| V/C Ratio(X)                 | 0.06  | 0.25   | 0.25  | 0.08  | 0.57   | 0.57  |  |   |   | 0.13  | 0.00   | 0.00  |
| Avail Cap(c_a), veh/h        | 343   | 971  | 987   | 551   | 971  | 1011  |  |   |   | 432   | 0  | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00   | 2.00  | 2.00  | 2.00   | 2.00  |  |   |   | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98   | 0.98  | 0.84  | 0.84   | 0.84  |  |   |   | 1.00  | 0.00   | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |  |   |   | 23.3  | 0.0  | 0.0   |
| Incr Delay (d2), s/veh       | 0.3   | 0.6  | 0.6   | 0.2   | 2.0  | 2.0   |  |   |   | 0.1   | 0.0  | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |  |   |   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.2  | 0.2   | 0.0   | 0.6  | 0.6   |  |   |   | 0.9   | 0.0  | 0.0   |
| LnGrp Delay(d),s/veh         | 0.3   | 0.6  | 0.6   | 0.2   | 2.0  | 2.0   |  |   |   | 23.3  | 0.0  | 0.0   |
| LnGrp LOS                    | A   | A  | A   | A   | A  | A   |  |   |   | C   |  |   |
| Approach Vol, veh/h          |   | 506  |   |   | 1171   |   |  |   |   |   |  | 49  |
| Approach Delay, s/veh        |   | 0.6  |   |   | 1.9  |   |  |   |   |   |  | 23.3  |
| Approach LOS                 |   | A  |   |   | A  |   |  |   |   |   |  | C   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7  | 8   |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  |   |  | 8   |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 31.1   |   | 58.9  |  |   |  | 58.9  |   |   |  |   |
| Change Period (Y+Rc), s      |   | 5.0  |   | 4.5   |  |   |  | 4.5   |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 29.0   |   | 51.5  |  |   |  | 51.5  |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 4.5  |   | 2.0   |  |   |  | 2.0   |   |   |  |   |
| Green Ext Time (p_c), s      |   | 0.1  |   | 2.5   |  |   |  | 2.5   |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |  |   |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 2.2   |  |   |  |   |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | A   |  |   |  |   |   |   |  |   |



















HCM 2010 Signalized Intersection Summary  
 19: Perkins Street & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 33  | 396   | 27  | 31  | 994   | 28  | 40   | 10  | 8   | 47  | 7   | 108   |
| Future Volume (veh/h)        | 33  | 396   | 27  | 31  | 994   | 28  | 40   | 10  | 8   | 47  | 7   | 108   |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.87  | 0.94  |   | 0.84  | 0.96   |   | 0.95  | 0.96  |   | 0.94  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 33  | 396   | 23  | 31  | 994   | 26  | 40   | 10  | 2   | 47  | 7   | 66  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 404   | 2033  | 117   | 624   | 2114  | 55  | 292  | 66  | 11  | 161   | 38  | 175   |
| Arrive On Green              | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.24   | 0.24  | 0.24  | 0.24  | 0.24  | 0.24  |
| Sat Flow, veh/h              | 484   | 3033  | 175   | 819   | 3153  | 82  | 918  | 275   | 48  | 436   | 160   | 728   |
| Grp Volume(v), veh/h         | 33  | 207   | 212   | 31  | 502   | 518   | 52   | 0   | 0   | 120   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 484   | 1593  | 1615  | 819   | 1593  | 1643  | 1240   | 0   | 0   | 1323  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 3.4   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 2.8  | 0.0   | 0.0   | 6.5   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.11  | 1.00  |   | 0.05  | 0.77   |   | 0.04  | 0.39  |   | 0.55  |
| Lane Grp Cap(c), veh/h       | 404   | 1068  | 1083  | 624   | 1068  | 1102  | 362  | 0   | 0   | 374   | 0   | 0   |
| V/C Ratio(X)                 | 0.08  | 0.19  | 0.20  | 0.05  | 0.47  | 0.47  | 0.14   | 0.00  | 0.00  | 0.32  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 404   | 1068  | 1083  | 624   | 1068  | 1102  | 503  | 0   | 0   | 523   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.98  | 0.78  | 0.78  | 0.78  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 27.1   | 0.0   | 0.0   | 28.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 0.4   | 0.4   | 0.1   | 1.2   | 1.1   | 0.1  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.1   | 0.1   | 0.0   | 0.3   | 0.3   | 1.0  | 0.0   | 0.0   | 2.5   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 0.4   | 0.4   | 0.4   | 0.1   | 1.2   | 1.1   | 27.2   | 0.0   | 0.0   | 28.6  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 452   |   |   | 1051  |   |  | 52  |   |   | 120   |   |
| Approach Delay, s/veh        |   | 0.4   |   |   | 1.1   |   |  | 27.2  |   |   | 28.6  |   |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 25.7  |   | 64.3  |   | 25.7  |  | 64.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 31.5  |   | 49.5  |   | 31.5  |  | 49.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 8.5   |   | 2.0   |   | 4.8   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.2   |   | 2.3   |   | 0.2   |  | 2.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 3.7   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |


















HCM 2010 Signalized Intersection Summary  
 20: Staten Avenue & Grand Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 12  | 436   | 8   | 29  | 1050  | 32  | 11   | 2   | 16  | 22  | 1   | 21  |
| Future Volume (veh/h)        | 12  | 436   | 8   | 29  | 1050  | 32  | 11   | 2   | 16  | 22  | 1   | 21  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.87  | 0.95  |   | 0.82  | 0.98   |   | 0.98  | 0.98  |   | 0.98  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 12  | 436   | 7   | 29  | 1050  | 30  | 11   | 2   | 5   | 22  | 1   | 7   |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 350   | 1884  | 30  | 554   | 1850  | 53  | 311  | 61  | 119   | 364   | 23  | 97  |
| Arrive On Green              | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.32   | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  |
| Sat Flow, veh/h              | 458   | 3200  | 51  | 805   | 3141  | 90  | 766  | 191   | 368   | 914   | 72  | 300   |
| Grp Volume(v), veh/h         | 12  | 217   | 226   | 29  | 532   | 548   | 18   | 0   | 0   | 30  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 458   | 1593  | 1659  | 805   | 1593  | 1638  | 1325   | 0   | 0   | 1287  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.7  | 0.0   | 0.0   | 1.3   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.03  | 1.00  |   | 0.05  | 0.61   |   | 0.28  | 0.73  |   | 0.23  |
| Lane Grp Cap(c), veh/h       | 350   | 938   | 977   | 554   | 938   | 964   | 484  | 0   | 0   | 484   | 0   | 0   |
| V/C Ratio(X)                 | 0.03  | 0.23  | 0.23  | 0.05  | 0.57  | 0.57  | 0.04   | 0.00  | 0.00  | 0.06  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 350   | 938   | 977   | 554   | 938   | 964   | 484  | 0   | 0   | 484   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.98  | 0.76  | 0.76  | 0.76  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 21.1   | 0.0   | 0.0   | 21.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 0.6   | 0.5   | 0.1   | 1.9   | 1.8   | 0.1  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.1   | 0.1   | 0.0   | 0.5   | 0.5   | 0.3  | 0.0   | 0.0   | 0.6   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 0.2   | 0.6   | 0.5   | 0.1   | 1.9   | 1.8   | 21.2   | 0.0   | 0.0   | 21.4  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 455   |   |   | 1109  |   |  | 18  |   |   |   | 30  |
| Approach Delay, s/veh        |   | 0.5   |   |   | 1.8   |   |  | 21.2  |   |   |   | 21.4  |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   |   | C   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 33.0  |   | 57.0  |   | 33.0  |  | 57.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 28.5  |   | 52.5  |   | 28.5  |  | 52.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 3.3   |   | 2.0   |   | 2.7   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.2   |   | 16.6  |   | 0.2   |  | 16.6  |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 2.0   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 21: Grand Avenue & Euclid Avenue

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |   |  |
| Traffic Volume (veh/h)       | 24  | 484   | 0   | 1   | 1095  | 104   | 0  | 0   | 0   | 31  | 0   | 28  |
| Future Volume (veh/h)        | 24  | 484   | 0   | 1   | 1095  | 104   | 0  | 0   | 0   | 31  | 0   | 28  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 0.97  |   | 0.84  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 1710  | 1676  | 1710  | 0  | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 24  | 484   | 0   | 1   | 1095  | 98  | 0  | 0   | 0   | 31  | 0   | 0   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 2   | 2   | 2   | 0  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   | 599   | 2576  | 0   | 40  | 1329  | 119   | 0  | 162   | 0   | 203   | 0   | 0   |
| Arrive On Green              | 0.60  | 1.00  | 0.00  | 0.46  | 0.47  | 0.46  | 0.00   | 0.00  | 0.00  | 0.10  | 0.00  | 0.00  |
| Sat Flow, veh/h              | 1597  | 3269  | 0   | 0   | 2847  | 254   | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Grp Volume(v), veh/h         | 24  | 484   | 0   | 644   | 0   | 550   | 0  | 0   | 0   | 31  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 0   | 1676  | 0   | 1426  | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 30.1  | 0.0  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 30.2  | 0.0   | 30.1  | 0.0  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 0.18  | 0.00   |   | 0.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 599   | 2576  | 0   | 813   | 0   | 665   | 0  | 162   | 0   | 210   | 0   | 0   |
| V/C Ratio(X)                 | 0.04  | 0.19  | 0.00  | 0.79  | 0.00  | 0.83  | 0.00   | 0.00  | 0.00  | 0.15  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 599   | 2576  | 0   | 813   | 0   | 665   | 0  | 512   | 0   | 475   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.00  | 0.81  | 0.00  | 0.81  | 0.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 9.6   | 0.0   | 0.0   | 20.8  | 0.0   | 20.9  | 0.0  | 0.0   | 0.0   | 37.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.2   | 0.0   | 6.4   | 0.0   | 9.3   | 0.0  | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.2   | 0.1   | 0.0   | 15.5  | 0.0   | 13.5  | 0.0  | 0.0   | 0.0   | 0.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 9.6   | 0.2   | 0.0   | 27.2  | 0.0   | 30.1  | 0.0  | 0.0   | 0.0   | 37.5  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   |   | C   |   | C   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 508   |   |   | 1194  |   |  | 0   |   |   |   | 31  |
| Approach Delay, s/veh        |   | 0.6   |   |   | 28.6  |   |  | 0.0   |   |   |   | 37.5  |
| Approach LOS                 |   | A   |   |   | C   |   |  |   |   |   |   | D   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 13.2  | 30.8  | 46.0  |   | 13.2  |  | 76.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   | 4.5   | * 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.5  | 8.0   | * 42  |   | 27.5  |  | 53.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.0   | 2.0   | 32.2  |   | 0.0   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 0.5   | 1.5   |   | 0.0   |  | 0.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 20.5  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 22: El Embarcadero & Grand Avenue













2100 Telegraph  
 Existing Conditions AM

|                              | →    | ↘    | ↙    | ←    | ↖    | ↗    |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Movement                     | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |   |      |
| Lane Configurations          | ↑↑   |      | ↖    | ↑↑   | ↖    | ↗    |   |      |
| Traffic Volume (veh/h)       | 359  | 153  | 95   | 791  | 418  | 146  |   |      |
| Future Volume (veh/h)        | 359  | 153  | 95   | 791  | 418  | 146  |   |      |
| Number                       | 2    | 12   | 1    | 6    | 3    | 18   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          |      | 0.92 | 1.00 |      | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1710 | 1676 | 1676 | 1676 | 1676 |   |      |
| Adj Flow Rate, veh/h         | 359  | 118  | 95   | 791  | 418  | 44   |   |      |
| Adj No. of Lanes             | 2    | 0    | 1    | 2    | 1    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |      |
| Cap, veh/h                   | 1179 | 379  | 125  | 1990 | 464  | 407  |   |      |
| Arrive On Green              | 0.51 | 0.50 | 0.16 | 1.00 | 0.29 | 0.29 |   |      |
| Sat Flow, veh/h              | 2403 | 746  | 1597 | 3269 | 1597 | 1425 |   |      |
| Grp Volume(v), veh/h         | 244  | 233  | 95   | 791  | 418  | 44   |   |      |
| Grp Sat Flow(s),veh/h/ln     | 1593 | 1473 | 1597 | 1593 | 1597 | 1425 |   |      |
| Q Serve(g_s), s              | 9.4  | 9.8  | 6.0  | 0.0  | 26.7 | 2.4  |   |      |
| Cycle Q Clear(g_c), s        | 9.4  | 9.8  | 6.0  | 0.0  | 26.7 | 2.4  |   |      |
| Prop In Lane                 |      | 0.51 | 1.00 |      | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 810  | 749  | 125  | 1990 | 464  | 407  |   |      |
| V/C Ratio(X)                 | 0.30 | 0.31 | 0.76 | 0.40 | 0.90 | 0.11 |   |      |
| Avail Cap(c_a), veh/h        | 810  | 749  | 301  | 1990 | 603  | 531  |   |      |
| HCM Platoon Ratio            | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.99 | 0.99 | 0.93 | 0.93 | 1.00 | 1.00 |   |      |
| Uniform Delay (d), s/veh     | 15.1 | 15.3 | 43.7 | 0.0  | 36.2 | 27.9 |   |      |
| Incr Delay (d2), s/veh       | 0.9  | 1.1  | 8.4  | 0.6  | 12.2 | 0.0  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 4.3  | 4.2  | 2.9  | 0.2  | 13.3 | 1.0  |   |      |
| LnGrp Delay(d),s/veh         | 16.1 | 16.4 | 52.1 | 0.6  | 48.4 | 28.0 |   |      |
| LnGrp LOS                    | B    | B    | D    | A    | D    | C    |   |      |
| Approach Vol, veh/h          | 477  |      |      | 886  | 462  |      |   |      |
| Approach Delay, s/veh        | 16.2 |      |      | 6.1  | 46.4 |      |   |      |
| Approach LOS                 | B    |      |      | A    | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 | 1    | 2    |      |      |      | 6    |   | 8    |
| Phs Duration (G+Y+Rc), s     | 12.3 | 58.9 |      |      |      | 71.2 |   | 34.8 |
| Change Period (Y+Rc), s      | 4.5  | 5.5  |      |      |      | 5.5  |   | 4.5  |
| Max Green Setting (Gmax), s  | 19.5 | 32.5 |      |      |      | 56.5 |   | 39.5 |
| Max Q Clear Time (g_c+I1), s | 8.0  | 11.8 |      |      |      | 2.0  |   | 28.7 |
| Green Ext Time (p_c), s      | 0.3  | 8.2  |      |      |      | 10.6 |   | 1.6  |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 18.9 |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |      |



HCM 2010 Signalized Intersection Summary  
 23: Grand Avenue & MacArthur Boulevard

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   | ↑↑↑   |   |   |   |   |  | ↑↑  | ↑   | ↑   | ↑↑  |   |
| Traffic Volume (veh/h)       | 155   | 649   | 285   | 0   | 0   | 0   | 0  | 296   | 199   | 177   | 747   | 0   |
| Future Volume (veh/h)        | 155   | 649   | 285   | 0   | 0   | 0   | 0  | 296   | 199   | 177   | 747   | 0   |
| Number                       | 7   | 4   | 14  |   |   |   | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.85  |   |   |   | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 0  | 1676  | 1676  | 1676  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 155   | 649   | 221   |   |   |   | 0  | 296   | 0   | 177   | 747   | 0   |
| Adj No. of Lanes             | 0   | 3   | 0   |   |   |   | 0  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 183   | 812   | 281   |   |   |   | 0  | 1521  | 674   | 206   | 2037  | 0   |
| Arrive On Green              | 0.29  | 0.29  | 0.28  |   |   |   | 0.00   | 0.48  | 0.00  | 0.26  | 1.00  | 0.00  |
| Sat Flow, veh/h              | 641   | 2847  | 986   |   |   |   | 0  | 3269  | 1425  | 1597  | 3269  | 0   |
| Grp Volume(v), veh/h         | 398   | 335   | 292   |   |   |   | 0  | 296   | 0   | 177   | 747   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1644  | 1526  | 1305  |   |   |   | 0  | 1593  | 1425  | 1597  | 1593  | 0   |
| Q Serve(g_s), s              | 24.2  | 21.3  | 21.9  |   |   |   | 0.0  | 5.7   | 0.0   | 11.2  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 24.2  | 21.3  | 21.9  |   |   |   | 0.0  | 5.7   | 0.0   | 11.2  | 0.0   | 0.0   |
| Prop In Lane                 | 0.39  |   | 0.76  |   |   |   | 0.00   |   | 1.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 469   | 435   | 372   |   |   |   | 0  | 1521  | 674   | 206   | 2037  | 0   |
| V/C Ratio(X)                 | 0.85  | 0.77  | 0.79  |   |   |   | 0.00   | 0.19  | 0.00  | 0.86  | 0.37  | 0.00  |
| Avail Cap(c_a), veh/h        | 566   | 525   | 449   |   |   |   | 0  | 1521  | 674   | 414   | 2037  | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 1.00  | 1.00  |   |   |   | 0.00   | 0.95  | 0.00  | 0.72  | 0.72  | 0.00  |
| Uniform Delay (d), s/veh     | 35.7  | 34.7  | 35.1  |   |   |   | 0.0  | 16.0  | 0.0   | 38.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 8.6   | 4.4   | 6.0   |   |   |   | 0.0  | 0.3   | 0.0   | 2.9   | 0.4   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 12.1  | 9.5   | 8.5   |   |   |   | 0.0  | 2.5   | 0.0   | 5.1   | 0.1   | 0.0   |
| LnGrp Delay(d),s/veh         | 44.3  | 39.2  | 41.1  |   |   |   | 0.0  | 16.2  | 0.0   | 41.4  | 0.4   | 0.0   |
| LnGrp LOS                    | D   | D   | D   |   |   |   |  | B   |   | D   | A   |   |
| Approach Vol, veh/h          |   | 1025  |   |   |   |   |  | 296   |   |   | 924   |   |
| Approach Delay, s/veh        |   | 41.7  |   |   |   |   |  | 16.2  |   |   | 8.2   |   |
| Approach LOS                 |   | D   |   |   |   |   |  | B   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 17.2  | 54.1  |   | 34.7  |   | 71.3  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 3.5   | 4.0   |   | 5.0   |   | 4.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 27.5  | 30.0  |   | 36.0  |   | 61.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 13.2  | 7.7   |   | 26.2  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.5   | 5.5   |   | 3.6   |   | 6.1   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 24.6  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 1.5

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      | ↕    | ↕    | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 35   | 2    | 44   | 35   | 301  | 0    | 0    | 608  | 38   |
| Future Vol, veh/h        | 0    | 0    | 0    | 35   | 2    | 44   | 35   | 301  | 0    | 0    | 608  | 38   |
| Conflicting Peds, #/hr   | 1    | 0    | 20   | 20   | 0    | 1    | 71   | 0    | 68   | 68   | 0    | 71   |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | 100  | -    | 0    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 0    | 35   | 2    | 44   | 35   | 301  | 0    | 0    | 608  | 38   |

| Major/Minor          | Minor1 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 1018   | 1088  | 302   | 717    | 0 | - | -      | - | 0 |
| Stage 1              | 371    | 371   | -     | -      | - | - | -      | - | - |
| Stage 2              | 647    | 717   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | 4.12   | - | - | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 2.218  | - | - | -      | - | - |
| Pot Cap-1 Maneuver   | 263    | 216   | 738   | 884    | - | 0 | 0      | - | - |
| Stage 1              | 698    | 620   | -     | -      | - | 0 | 0      | - | - |
| Stage 2              | 521    | 434   | -     | -      | - | 0 | 0      | - | - |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 248    | 0     | 737   | 867    | - | - | -      | - | - |
| Mov Cap-2 Maneuver   | 248    | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 670    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 511    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 15.6 | 1  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBL  | NBTWBLn1 | WBLn2 | SBT  | SBR |
|-----------------------|------|----------|-------|------|-----|
| Capacity (veh/h)      | 867  | -        | 248   | 737  | -   |
| HCM Lane V/C Ratio    | 0.04 | -        | 0.149 | 0.06 | -   |
| HCM Control Delay (s) | 9.3  | -        | 22    | 10.2 | -   |
| HCM Lane LOS          | A    | -        | C     | B    | -   |
| HCM 95th %tile Q(veh) | 0.1  | -        | 0.5   | 0.2  | -   |

**Intersection**

Int Delay, s/veh 1.8

| Movement                 | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      | ↶    |      |      | ↷    |
| Traffic Vol, veh/h       | 0    | 0    | 59   | 17   | 0    | 19   |
| Future Vol, veh/h        | 0    | 0    | 59   | 17   | 0    | 19   |
| Conflicting Peds, #/hr   | 15   | 0    | 0    | 15   | 20   | 2    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | 0    |
| Veh in Median Storage, # | -    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 59   | 17   | 0    | 19   |

**Major/Minor**

|                      | Major2 | Minor2 |
|----------------------|--------|--------|
| Conflicting Flow All | -      | 85     |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Critical Hdwy        | -      | 6.22   |
| Critical Hdwy Stg 1  | -      | -      |
| Critical Hdwy Stg 2  | -      | -      |
| Follow-up Hdwy       | -      | 3.318  |
| Pot Cap-1 Maneuver   | -      | 974    |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Platoon blocked, %   | -      | -      |
| Mov Cap-1 Maneuver   | -      | 960    |
| Mov Cap-2 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |

**Approach**


















|                      | WB | SB  |
|----------------------|----|-----|
| HCM Control Delay, s | 0  | 8.8 |
| HCM LOS              |    | A   |

**Minor Lane/Major Mvmt**

|                       | WBT | WBR | SBLn1 |
|-----------------------|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | 960   |
| HCM Lane V/C Ratio    | -   | -   | 0.02  |
| HCM Control Delay (s) | -   | -   | 8.8   |
| HCM Lane LOS          | -   | -   | A     |
| HCM 95th %tile Q(veh) | -   | -   | 0.1   |

HCM 2010 Signalized Intersection Summary  
 26: Broadway & 22nd Street



















2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 13  | 25  | 206   | 16   | 375   | 0   | 0   | 473   | 11  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 13  | 25  | 206   | 16   | 375   | 0   | 0   | 473   | 11  |
| Number                       |   |   |   | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.83  | 0.93   |   | 1.00  | 1.00  |   | 0.82  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1676  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 13  | 25  | 57  | 16   | 375   | 0   | 0   | 473   | 9   |
| Adj No. of Lanes             |   |   |   | 0   | 1   | 2   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 99  | 190   | 367   | 102  | 2160  | 0   | 0   | 2324  | 44  |
| Arrive On Green              |   |   |   | 0.18  | 0.18  | 0.18  | 0.72   | 0.73  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 564   | 1084  | 2092  | 77   | 3034  | 0   | 0   | 3266  | 60  |
| Grp Volume(v), veh/h         |   |   |   | 38  | 0   | 57  | 206  | 185   | 0   | 0   | 236   | 246   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1648  | 0   | 1046  | 1585   | 1449  | 0   | 0   | 1593  | 1650  |
| Q Serve(g_s), s              |   |   |   | 1.7   | 0.0   | 2.0   | 0.0  | 3.3   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 1.7   | 0.0   | 2.0   | 3.2  | 3.3   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.34  |   | 1.00  | 0.08   |   | 0.00  | 0.00  |   | 0.04  |
| Lane Grp Cap(c), veh/h       |   |   |   | 289   | 0   | 367   | 1184   | 1058  | 0   | 0   | 1163  | 1205  |
| V/C Ratio(X)                 |   |   |   | 0.13  | 0.00  | 0.16  | 0.17   | 0.17  | 0.00  | 0.00  | 0.20  | 0.20  |
| Avail Cap(c_a), veh/h        |   |   |   | 543   | 0   | 689   | 1184   | 1058  | 0   | 0   | 1163  | 1205  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.98   | 0.98  | 0.00  | 0.00  | 0.99  | 0.99  |
| Uniform Delay (d), s/veh     |   |   |   | 29.6  | 0.0   | 29.7  | 3.5  | 3.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.0   | 0.1   | 0.3  | 0.4   | 0.0   | 0.0   | 0.4   | 0.4   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.8   | 0.0   | 0.6   | 1.7  | 1.4   | 0.0   | 0.0   | 0.1   | 0.1   |
| LnGrp Delay(d),s/veh         |   |   |   | 29.6  | 0.0   | 29.8  | 3.9  | 3.9   | 0.0   | 0.0   | 0.4   | 0.4   |
| LnGrp LOS                    |   |   |   | C   |   | C   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 95  |   |  | 391   |   |   | 482   |   |
| Approach Delay, s/veh        |   |   |   |   | 29.7  |   |  | 3.9   |   |   | 0.4   |   |
| Approach LOS                 |   |   |   |   | C   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 66.1  |   | 18.9  |   | 66.1  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 48.0  |   | 27.5  |   | 48.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 5.3   |   | 4.0   |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.0   |   | 0.4   |   | 4.0   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 4.7   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

| Intersection             |        |       |       |       |      |      |        |      |      |        |      |      |
|--------------------------|--------|-------|-------|-------|------|------|--------|------|------|--------|------|------|
| Int Delay, s/veh         | 3.4    |       |       |       |      |      |        |      |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR   | WBL   | WBT  | WBR  | NBL    | NBT  | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations      | 4TB    |       |       |       |      |      | TB     |      |      | TB     |      | TB   |
| Traffic Vol, veh/h       | 52     | 16    | 43    | 0     | 0    | 0    | 0      | 304  | 20   | 100    | 444  | 0    |
| Future Vol, veh/h        | 52     | 16    | 43    | 0     | 0    | 0    | 0      | 304  | 20   | 100    | 444  | 0    |
| Conflicting Peds, #/hr   | 22     | 0     | 30    | 30    | 0    | 22   | 81     | 0    | 97   | 97     | 0    | 81   |
| Sign Control             | Stop   | Stop  | Stop  | Free  | Free | Free | Free   | Free | Free | Free   | Free | Free |
| RT Channelized           | -      | -     | None  | -     | -    | None | -      | -    | None | -      | -    | None |
| Storage Length           | -      | -     | -     | -     | -    | -    | -      | -    | -    | 120    | -    | -    |
| Veh in Median Storage, # | -      | 0     | -     | -     | -    | -    | -      | 0    | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -     | -     | 0    | -    | -      | 0    | -    | -      | 0    | -    |
| Peak Hour Factor         | 100    | 100   | 100   | 100   | 100  | 100  | 100    | 100  | 100  | 100    | 100  | 100  |
| Heavy Vehicles, %        | 2      | 2     | 2     | 2     | 2    | 2    | 2      | 2    | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 52     | 16    | 43    | 0     | 0    | 0    | 0      | 304  | 20   | 100    | 444  | 0    |
| Major/Minor              | Minor2 |       |       |       |      |      | Major1 |      |      | Major2 |      |      |
| Conflicting Flow All     | 980    | 1065  | 474   |       |      |      | -      | 0    | 0    | 421    | 0    | 0    |
| Stage 1                  | 644    | 644   | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 336    | 421   | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Critical Hdwy            | 7.12   | 6.52  | 6.22  |       |      |      | -      | -    | -    | 4.12   | -    | -    |
| Critical Hdwy Stg 1      | 6.12   | 5.52  | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Critical Hdwy Stg 2      | 6.12   | 5.52  | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Follow-up Hdwy           | 3.518  | 4.018 | 3.318 |       |      |      | -      | -    | -    | 2.218  | -    | -    |
| Pot Cap-1 Maneuver       | 229    | 223   | 590   |       |      |      | 0      | -    | -    | 1138   | -    | 0    |
| Stage 1                  | 461    | 468   | -     |       |      |      | 0      | -    | -    | -      | -    | 0    |
| Stage 2                  | 678    | 589   | -     |       |      |      | 0      | -    | -    | -      | -    | 0    |
| Platoon blocked, %       |        |       |       |       |      |      | -      | -    | -    |        |      |      |
| Mov Cap-1 Maneuver       | 209    | 203   | 573   |       |      |      | -      | -    | -    | 1114   | -    | -    |
| Mov Cap-2 Maneuver       | 209    | 203   | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Stage 1                  | 461    | 426   | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Stage 2                  | 664    | 589   | -     |       |      |      | -      | -    | -    | -      | -    | -    |
| Approach                 | EB     |       |       |       |      |      | NB     |      |      | SB     |      |      |
| HCM Control Delay, s     | 22.3   |       |       |       |      |      | 0      |      |      | 1.6    |      |      |
| HCM LOS                  | C      |       |       |       |      |      |        |      |      |        |      |      |
| Minor Lane/Major Mvmt    | NBT    | NBR   | EBLn1 | EBLn2 | SBL  | SBT  |        |      |      |        |      |      |
| Capacity (veh/h)         | -      | -     | 208   | 446   | 1114 | -    |        |      |      |        |      |      |
| HCM Lane V/C Ratio       | -      | -     | 0.288 | 0.114 | 0.09 | -    |        |      |      |        |      |      |
| HCM Control Delay (s)    | -      | -     | 29.2  | 14.1  | 8.6  | -    |        |      |      |        |      |      |
| HCM Lane LOS             | -      | -     | D     | B     | A    | -    |        |      |      |        |      |      |
| HCM 95th %tile Q(veh)    | -      | -     | 1.1   | 0.4   | 0.3  | -    |        |      |      |        |      |      |

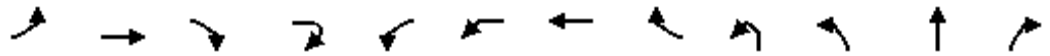
HCM 2010 Signalized Intersection Summary  
28: Broadway & 21st Street

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 5   | 76  | 13  | 23  | 0   | 44  | 0  | 348   | 32  | 40  | 453   | 0   |
| Future Volume (veh/h)        | 5   | 76  | 13  | 23  | 0   | 44  | 0  | 348   | 32  | 40  | 453   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.90  |   | 0.88  | 0.91  |   | 0.88  | 1.00   |   | 0.80  | 0.89  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 0  | 1676  | 1710  | 1710  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 5   | 76  | 4   | 23  | 0   | 14  | 0  | 348   | 23  | 40  | 453   | 0   |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 425   | 428   | 23  | 261   | 16  | 118   | 0  | 1783  | 117   | 161   | 1660  | 0   |
| Arrive On Green              | 0.27  | 0.27  | 0.27  | 0.29  | 0.00  | 0.27  | 0.00   | 1.00  | 1.00  | 0.60  | 0.60  | 0.00  |
| Sat Flow, veh/h              | 1134  | 1566  | 82  | 617   | 56  | 410   | 0  | 3066  | 195   | 169   | 2852  | 0   |
| Grp Volume(v), veh/h         | 5   | 0   | 80  | 37  | 0   | 0   | 0  | 184   | 187   | 255   | 238   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1134  | 0   | 1648  | 1083  | 0   | 0   | 0  | 1593  | 1584  | 1496  | 1449  | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 2.6   | 0.1   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 5.5   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.2   | 0.0   | 2.6   | 2.7   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 5.0   | 5.5   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.05  | 0.62  |   | 0.38  | 0.00   |   | 0.12  | 0.16  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 425   | 0   | 451   | 395   | 0   | 0   | 0  | 952   | 947   | 954   | 867   | 0   |
| V/C Ratio(X)                 | 0.01  | 0.00  | 0.18  | 0.09  | 0.00  | 0.00  | 0.00   | 0.19  | 0.20  | 0.27  | 0.27  | 0.00  |
| Avail Cap(c_a), veh/h        | 487   | 0   | 542   | 458   | 0   | 0   | 0  | 952   | 947   | 954   | 867   | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 1.00  | 0.99  | 0.00  | 0.00  | 0.00   | 0.97  | 0.97  | 0.98  | 0.98  | 0.00  |
| Uniform Delay (d), s/veh     | 18.5  | 0.0   | 19.4  | 18.5  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 6.7   | 6.8   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0  | 0.4   | 0.5   | 0.7   | 0.8   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.1   | 0.0   | 1.2   | 0.5   | 0.0   | 0.0   | 0.0  | 0.1   | 0.1   | 2.5   | 2.4   | 0.0   |
| LnGrp Delay(d),s/veh         | 18.5  | 0.0   | 19.5  | 18.5  | 0.0   | 0.0   | 0.0  | 0.4   | 0.5   | 7.3   | 7.5   | 0.0   |
| LnGrp LOS                    | B   |   | B   | B   |   |   |  | A   | A   | A   | A   |   |
| Approach Vol, veh/h          |   | 85  |   |   | 37  |   |  | 371   |   |   | 493   |   |
| Approach Delay, s/veh        |   | 19.4  |   |   | 18.5  |   |  | 0.4   |   |   | 7.4   |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 45.9  |   | 24.1  |   | 45.9  |  | 24.1  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 37.0  |   | 22.5  |   | 37.0  |  | 22.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 4.6   |   | 7.5   |  | 4.7   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.1   |   | 0.4   |   | 4.0   |  | 0.4   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 6.3   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street

2100 Telegraph  
 Existing Conditions AM



| Movement               | EBL  | EBT  | EBR  | EBR2 | WBL2 | WBL  | WBT   | WBR  | NBL2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕↕   |      |      | ↗    |      | ↕↕    |      |      | ↘    | ↕↕   |      |
| Traffic Volume (vph)   | 27   | 43   | 10   | 24   | 36   | 40   | 5     | 122  | 4    | 8    | 168  | 28   |
| Future Volume (vph)    | 27   | 43   | 10   | 24   | 36   | 40   | 5     | 122  | 4    | 8    | 168  | 28   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      | 4.0   |      |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 0.95 |      | 0.95  |      |      | 1.00 | 0.95 |      |
| Frbp, ped/bikes        |      | 0.99 |      |      | 1.00 |      | 1.00  |      |      | 1.00 | 1.00 |      |
| Flpb, ped/bikes        |      | 1.00 |      |      | 0.98 |      | 0.99  |      |      | 0.98 | 1.00 |      |
| Frt                    |      | 0.96 |      |      | 1.00 |      | 0.89  |      |      | 1.00 | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 0.95 |      | 0.99  |      |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |      | 1557 |      |      | 1479 |      | 1396  |      |      | 1557 | 3117 |      |
| Flt Permitted          |      | 0.90 |      |      | 0.70 |      | 0.90  |      |      | 0.61 | 1.00 |      |
| Satd. Flow (perm)      |      | 1416 |      |      | 1082 |      | 1277  |      |      | 1002 | 3117 |      |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 27   | 43   | 10   | 24   | 36   | 40   | 5     | 122  | 4    | 8    | 168  | 28   |
| RTOR Reduction (vph)   | 0    | 17   | 0    | 0    | 0    | 0    | 92    | 0    | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)  | 0    | 87   | 0    | 0    | 32   | 0    | 79    | 0    | 0    | 12   | 184  | 0    |
| Confl. Peds. (#/hr)    | 18   |      |      | 31   | 31   |      |       |      |      | 17   |      |      |
| Confl. Bikes (#/hr)    |      |      |      |      |      |      |       |      |      |      |      |      |
| Turn Type              | Perm | NA   |      |      | Perm | Perm | NA    |      | Perm | Perm | NA   |      |
| Protected Phases       |      | 3    |      |      |      |      | 3     |      |      |      | 2    |      |
| Permitted Phases       | 3    |      |      |      | 3    | 3    |       |      | 2    | 2    |      |      |
| Actuated Green, G (s)  |      | 18.6 |      |      | 18.6 |      | 18.6  |      |      | 37.6 | 37.6 |      |
| Effective Green, g (s) |      | 19.6 |      |      | 19.6 |      | 19.6  |      |      | 39.6 | 39.6 |      |
| Actuated g/C Ratio     |      | 0.25 |      |      | 0.25 |      | 0.25  |      |      | 0.50 | 0.50 |      |
| Clearance Time (s)     |      | 5.0  |      |      | 5.0  |      | 5.0   |      |      | 6.0  | 6.0  |      |
| Vehicle Extension (s)  |      | 2.0  |      |      | 2.0  |      | 2.0   |      |      | 2.0  | 2.0  |      |
| Lane Grp Cap (vph)     |      | 346  |      |      | 265  |      | 312   |      |      | 495  | 1542 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |       |      |      |      | 0.06 |      |
| v/s Ratio Perm         |      | 0.06 |      |      | 0.03 |      | c0.06 |      |      | 0.01 |      |      |
| v/c Ratio              |      | 0.25 |      |      | 0.12 |      | 0.25  |      |      | 0.02 | 0.12 |      |
| Uniform Delay, d1      |      | 24.3 |      |      | 23.5 |      | 24.3  |      |      | 10.3 | 10.8 |      |
| Progression Factor     |      | 1.00 |      |      | 1.00 |      | 1.00  |      |      | 0.83 | 0.77 |      |
| Incremental Delay, d2  |      | 0.1  |      |      | 0.1  |      | 0.2   |      |      | 0.1  | 0.2  |      |
| Delay (s)              |      | 24.4 |      |      | 23.6 |      | 24.5  |      |      | 8.6  | 8.5  |      |
| Level of Service       |      | C    |      |      | C    |      | C     |      |      | A    | A    |      |
| Approach Delay (s)     |      | 24.4 |      |      |      |      | 24.3  |      |      |      | 8.5  |      |
| Approach LOS           |      | C    |      |      |      |      | C     |      |      |      | A    |      |

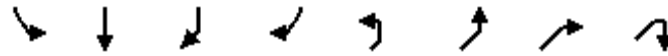
Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 15.5  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.22  |                           |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 67.1% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street

2100 Telegraph  
 Existing Conditions AM























| Movement                    | SBL   | SBT  | SBR   | SBR2 | NEL2 | NEL   | NER  | NER2 |
|-----------------------------|-------|------|-------|------|------|-------|------|------|
| Lane Configurations         |       |      |       |      |      |       |      |      |
| Traffic Volume (vph)        | 102   | 225  | 138   | 15   | 2    | 39    | 33   | 2    |
| Future Volume (vph)         | 102   | 225  | 138   | 15   | 2    | 39    | 33   | 2    |
| Ideal Flow (vphpl)          | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0   | 4.0  | 4.0   |      |      | 4.0   |      |      |
| Lane Util. Factor           | 1.00  | 0.95 | 1.00  |      |      | 0.97  |      |      |
| Frbp, ped/bikes             | 1.00  | 1.00 | 0.95  |      |      | 1.00  |      |      |
| Flpb, ped/bikes             | 0.97  | 1.00 | 1.00  |      |      | 0.99  |      |      |
| Frt                         | 1.00  | 1.00 | 0.85  |      |      | 0.93  |      |      |
| Flt Protected               | 0.95  | 1.00 | 1.00  |      |      | 0.97  |      |      |
| Satd. Flow (prot)           | 1546  | 3185 | 1360  |      |      | 2908  |      |      |
| Flt Permitted               | 0.63  | 1.00 | 1.00  |      |      | 0.95  |      |      |
| Satd. Flow (perm)           | 1023  | 3185 | 1360  |      |      | 2825  |      |      |
| Peak-hour factor, PHF       | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 102   | 225  | 138   | 15   | 2    | 39    | 33   | 2    |
| RTOR Reduction (vph)        | 0     | 0    | 11    | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)       | 102   | 225  | 142   | 0    | 0    | 76    | 0    | 0    |
| Confl. Peds. (#/hr)         | 21    |      |       | 17   | 17   |       |      |      |
| Confl. Bikes (#/hr)         |       |      |       | 10   |      |       |      |      |
| Turn Type                   | Perm  | NA   | pm+ov |      | D.Pm | Prot  |      |      |
| Protected Phases            |       | 6    | 4     |      |      | 4     |      |      |
| Permitted Phases            | 6     |      | 6     |      | 4    |       |      |      |
| Actuated Green, G (s)       | 37.6  | 37.6 | 45.4  |      |      | 7.8   |      |      |
| Effective Green, g (s)      | 39.6  | 39.6 | 47.4  |      |      | 8.8   |      |      |
| Actuated g/C Ratio          | 0.50  | 0.50 | 0.59  |      |      | 0.11  |      |      |
| Clearance Time (s)          | 6.0   | 6.0  | 5.0   |      |      | 5.0   |      |      |
| Vehicle Extension (s)       | 2.0   | 2.0  | 2.0   |      |      | 2.0   |      |      |
| Lane Grp Cap (vph)          | 506   | 1576 | 873   |      |      | 310   |      |      |
| v/s Ratio Prot              |       | 0.07 | 0.02  |      |      |       |      |      |
| v/s Ratio Perm              | c0.10 |      | 0.09  |      |      | c0.03 |      |      |
| v/c Ratio                   | 0.20  | 0.14 | 0.16  |      |      | 0.25  |      |      |
| Uniform Delay, d1           | 11.3  | 11.0 | 7.4   |      |      | 32.6  |      |      |
| Progression Factor          | 1.00  | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Incremental Delay, d2       | 0.9   | 0.2  | 0.0   |      |      | 0.2   |      |      |
| Delay (s)                   | 12.2  | 11.2 | 7.4   |      |      | 32.7  |      |      |
| Level of Service            | B     | B    | A     |      |      | C     |      |      |
| Approach Delay (s)          |       | 10.2 |       |      |      | 32.7  |      |      |
| Approach LOS                |       | B    |       |      |      | C     |      |      |
| <b>Intersection Summary</b> |       |      |       |      |      |       |      |      |



















HCM 2010 Signalized Intersection Summary  
 30: Telegraph Avenue & 20th Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 42  | 111   | 22  | 7   | 113   | 110   | 8   | 178   | 24  | 159   | 229   | 67  |
| Future Volume (veh/h)        | 42  | 111   | 22  | 7   | 113   | 110   | 8   | 178   | 24  | 159   | 229   | 67  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.76  |   | 0.65  | 0.75  |   | 0.67  | 0.90  |   | 0.90  | 0.96  |   | 0.83  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1676  | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 42  | 111   | 8   | 7   | 113   | 27  | 8   | 178   | 18  | 159   | 229   | 55  |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 1   | 1   | 1   | 0   | 1   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 379   | 524   | 38  | 73  | 574   | 338   | 433   | 523   | 53  | 518   | 642   | 154   |
| Arrive On Green              | 0.35  | 0.35  | 0.34  | 0.34  | 0.35  | 0.35  | 0.12  | 0.12  | 0.11  | 0.09  | 0.51  | 0.51  |
| Sat Flow, veh/h              | 854   | 1484  | 107   | 26  | 1626  | 957   | 885   | 1480  | 150   | 1597  | 1250  | 300   |
| Grp Volume(v), veh/h         | 42  | 0   | 119   | 120   | 0   | 27  | 8   | 0   | 196   | 159   | 0   | 284   |
| Grp Sat Flow(s),veh/h/ln     | 854   | 0   | 1591  | 1652  | 0   | 957   | 885   | 0   | 1629  | 1597  | 0   | 1550  |
| Q Serve(g_s), s              | 2.2   | 0.0   | 3.1   | 0.0   | 0.0   | 1.1   | 0.5   | 0.0   | 6.6   | 3.4   | 0.0   | 6.6   |
| Cycle Q Clear(g_c), s        | 5.2   | 0.0   | 3.1   | 3.0   | 0.0   | 1.1   | 0.5   | 0.0   | 6.6   | 3.4   | 0.0   | 6.6   |
| Prop In Lane                 | 1.00  |   | 0.07  | 0.06  |   | 1.00  | 1.00  |   | 0.09  | 1.00  |   | 0.19  |
| Lane Grp Cap(c), veh/h       | 379   | 0   | 562   | 633   | 0   | 338   | 433   | 0   | 575   | 518   | 0   | 796   |
| V/C Ratio(X)                 | 0.11  | 0.00  | 0.21  | 0.19  | 0.00  | 0.08  | 0.02  | 0.00  | 0.34  | 0.31  | 0.00  | 0.36  |
| Avail Cap(c_a), veh/h        | 391   | 0   | 583   | 655   | 0   | 351   | 433   | 0   | 575   | 555   | 0   | 796   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33  | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.00  | 0.98  | 0.94  | 0.00  | 0.94  | 1.00  | 0.00  | 1.00  | 1.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     | 15.3  | 0.0   | 13.6  | 13.5  | 0.0   | 12.9  | 17.4  | 0.0   | 20.1  | 9.7   | 0.0   | 8.7   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.1   | 0.1   | 0.0   | 0.0   | 0.1   | 0.0   | 1.6   | 0.1   | 0.0   | 1.2   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.5   | 0.0   | 1.4   | 1.4   | 0.0   | 0.3   | 0.1   | 0.0   | 3.3   | 1.5   | 0.0   | 3.0   |
| LnGrp Delay(d),s/veh         | 15.4  | 0.0   | 13.6  | 13.6  | 0.0   | 12.9  | 17.4  | 0.0   | 21.7  | 9.9   | 0.0   | 10.0  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   | B   |   | C   | A   |   | A   |
| Approach Vol, veh/h          |   | 161   |   |   | 147   |   |   | 204   |   |   | 443   |   |
| Approach Delay, s/veh        |   | 14.1  |   |   | 13.5  |   |   | 21.5  |   |   | 9.9   |   |
| Approach LOS                 |   | B   |   |   | B   |   |   | C   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 9.6   | 25.2  |   | 25.2  |   | 34.8  |   | 25.2  |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 4.5   |   | 4.5   |   | 4.5   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  | 6.5   | 18.5  |   | 21.5  |   | 29.5  |   | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 5.4   | 8.6   |   | 7.2   |   | 8.6   |   | 5.0   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 1.6   |   | 1.2   |   | 2.1   |   | 1.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 13.7  |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |   |   |   |   |   |   |

















HCM 2010 Signalized Intersection Summary  
 31: Broadway & 20th Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 19  | 227   | 60  | 36  | 138   | 76  | 61   | 296   | 53  | 36  | 353   | 48  |
| Future Volume (veh/h)        | 19  | 227   | 60  | 36  | 138   | 76  | 61   | 296   | 53  | 36  | 353   | 48  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.85  |   | 0.79  | 0.88  |   | 0.79  | 1.00   |   | 0.84  | 0.96  |   | 0.70  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1710  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 19  | 227   | 24  | 36  | 138   | 19  | 61   | 296   | 40  | 36  | 353   | 35  |
| Adj No. of Lanes             | 0   | 2   | 0   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 95  | 869   | 88  | 193   | 667   | 94  | 75   | 743   | 135   | 208   | 1874  | 178   |
| Arrive On Green              | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.18   | 0.18  | 0.18  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 110   | 2610  | 265   | 368   | 2002  | 281   | 8  | 1344  | 245   | 259   | 3390  | 322   |
| Grp Volume(v), veh/h         | 144   | 0   | 126   | 99  | 0   | 94  | 163  | 0   | 234   | 142   | 140   | 142   |
| Grp Sat Flow(s),veh/h/ln     | 1591  | 0   | 1394  | 1264  | 0   | 1387  | 167  | 0   | 1430  | 1280  | 1388  | 1303  |
| Q Serve(g_s), s              | 0.0   | 0.0   | 4.7   | 0.1   | 0.0   | 3.4   | 5.9  | 0.0   | 9.9   | 0.9   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 4.4   | 0.0   | 4.7   | 4.8   | 0.0   | 3.4   | 5.9  | 0.0   | 9.9   | 10.8  | 0.0   | 0.0   |
| Prop In Lane                 | 0.13  |   | 0.19  | 0.36  |   | 0.20  | 0.37   |   | 0.17  | 0.25  |   | 0.25  |
| Lane Grp Cap(c), veh/h       | 588   | 0   | 464   | 491   | 0   | 462   | 0  | 0   | 790   | 772   | 767   | 720   |
| V/C Ratio(X)                 | 0.24  | 0.00  | 0.27  | 0.20  | 0.00  | 0.20  | 0.00   | 0.00  | 0.30  | 0.18  | 0.18  | 0.20  |
| Avail Cap(c_a), veh/h        | 635   | 0   | 508   | 530   | 0   | 505   | 0  | 0   | 790   | 772   | 767   | 720   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33   | 0.33  | 0.33  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.97  | 0.00  | 0.97  | 0.98  | 0.00  | 0.98  | 0.97   | 0.00  | 0.97  | 0.96  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     | 17.0  | 0.0   | 17.2  | 16.6  | 0.0   | 16.7  | 0.0  | 0.0   | 16.9  | 0.3   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.0  | 0.0   | 0.9   | 0.5   | 0.5   | 0.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.0   | 0.0   | 1.8   | 1.4   | 0.0   | 1.3   | 0.0  | 0.0   | 4.1   | 0.4   | 0.1   | 0.1   |
| LnGrp Delay(d),s/veh         | 17.1  | 0.0   | 17.3  | 16.6  | 0.0   | 16.8  | 0.0  | 0.0   | 17.8  | 0.8   | 0.5   | 0.6   |
| LnGrp LOS                    | B   |   | B   | B   |   | B   |  |   | B   | A   | A   | A   |
| Approach Vol, veh/h          |   | 270   |   |   | 193   |   |  | 397   |   |   | 424   |   |
| Approach Delay, s/veh        |   | 17.2  |   |   | 16.7  |   |  | 10.5  |   |   | 0.6   |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | B   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.2  |   | 26.8  |   | 43.2  |  | 26.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.0   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 36.0  |   | 25.0  |   | 27.0  |  | 25.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 11.9  |   | 6.7   |   | 12.8  |  | 6.8   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.8   |   | 1.9   |   | 3.3   |  | 1.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 9.6   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
32: Brush Street & 18th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |   |  |   |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 105   | 106   | 0   | 0  | 0   | 0   | 0   | 2719  | 198   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 105   | 106   | 0   | 0  | 0   | 0   | 0   | 2719  | 198   |
| Number                       |   |   |   | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 1.00  |  |   |   | 1.00  |   | 0.96  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 0   |  |   |   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 105   | 106   | 0   |  |   |   | 0   | 2719  | 189   |
| Adj No. of Lanes             |   |   |   | 1   | 2   | 0   |  |   |   | 0   | 4   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 0   |  |   |   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 352   | 543   | 0   |  |   |   | 0   | 3537  | 243   |
| Arrive On Green              |   |   |   | 0.17  | 0.17  | 0.00  |  |   |   | 0.00  | 0.64  | 0.62  |
| Sat Flow, veh/h              |   |   |   | 1597  | 3269  | 0   |  |   |   | 0   | 5771  | 381   |
| Grp Volume(v), veh/h         |   |   |   | 105   | 106   | 0   |  |   |   | 0   | 2119  | 789   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1593  | 0   |  |   |   | 0   | 1442  | 1592  |
| Q Serve(g_s), s              |   |   |   | 5.3   | 2.6   | 0.0   |  |   |   | 0.0   | 31.2  | 32.2  |
| Cycle Q Clear(g_c), s        |   |   |   | 5.3   | 2.6   | 0.0   |  |   |   | 0.0   | 31.2  | 32.2  |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.00  |  |   |   | 0.00  |   | 0.24  |
| Lane Grp Cap(c), veh/h       |   |   |   | 352   | 543   | 0   |  |   |   | 0   | 2763  | 1017  |
| V/C Ratio(X)                 |   |   |   | 0.30  | 0.20  | 0.00  |  |   |   | 0.00  | 0.77  | 0.78  |
| Avail Cap(c_a), veh/h        |   |   |   | 515   | 867   | 0   |  |   |   | 0   | 2763  | 1017  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 0.92  | 0.92  | 0.00  |  |   |   | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 33.1  | 32.0  | 0.0   |  |   |   | 0.0   | 11.5  | 11.9  |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.1   | 0.0   |  |   |   | 0.0   | 2.1   | 5.8   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 2.3   | 1.1   | 0.0   |  |   |   | 0.0   | 12.7  | 15.5  |
| LnGrp Delay(d),s/veh         |   |   |   | 33.3  | 32.1  | 0.0   |  |   |   | 0.0   | 13.6  | 17.7  |
| LnGrp LOS                    |   |   |   | C   | C   |   |  |   |   |   | B   | B   |
| Approach Vol, veh/h          |   |   |   |   | 211   |   |  |   |   |   | 2908  |   |
| Approach Delay, s/veh        |   |   |   |   | 32.7  |   |  |   |   |   | 14.7  |   |
| Approach LOS                 |   |   |   |   | C   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   |   |   | 61.5  |  | 19.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   |   |   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   |   |   | 55.5  |  | 24.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   |   |   | 34.2  |  | 7.3   |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   |   |   | 16.5  |  | 0.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 15.9  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 33: Castro Street & 18th Street & I-980 NB On-Ramp

2100 Telegraph  
 Existing Conditions AM



| Movement               | WBT   | WBR  | WBR2 | NBL2  | NBL   | NBT   |
|------------------------|-------|------|------|-------|-------|-------|
| Lane Configurations    | ↑↑    | ↔    |      | ↔     | ↔     | ↑↑↑   |
| Traffic Volume (vph)   | 101   | 192  | 21   | 110   | 169   | 788   |
| Future Volume (vph)    | 101   | 192  | 21   | 110   | 169   | 788   |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor      | 0.91  | 0.91 |      | 0.86  | 0.81  | 0.81  |
| Frbp, ped/bikes        | 0.98  | 0.96 |      | 1.00  | 1.00  | 1.00  |
| Flpb, ped/bikes        | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00  |
| Frt                    | 0.92  | 0.85 |      | 1.00  | 1.00  | 1.00  |
| Flt Protected          | 1.00  | 1.00 |      | 0.95  | 0.95  | 1.00  |
| Satd. Flow (prot)      | 2761  | 1246 |      | 1370  | 1290  | 4070  |
| Flt Permitted          | 1.00  | 1.00 |      | 0.95  | 0.95  | 1.00  |
| Satd. Flow (perm)      | 2761  | 1246 |      | 1370  | 1290  | 4070  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 101   | 192  | 21   | 110   | 169   | 788   |
| RTOR Reduction (vph)   | 0     | 21   | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 207   | 86   | 0    | 99    | 163   | 805   |
| Confl. Peds. (#/hr)    |       | 8    |      |       |       |       |
| Confl. Bikes (#/hr)    |       | 10   |      |       |       |       |
| Turn Type              | NA    | Perm |      | Split | Split | NA    |
| Protected Phases       | 8     |      |      | 2     | 2     | 2     |
| Permitted Phases       |       | 8    |      |       |       |       |
| Actuated Green, G (s)  | 12.0  | 12.0 |      | 68.5  | 68.5  | 68.5  |
| Effective Green, g (s) | 12.5  | 12.5 |      | 69.5  | 69.5  | 69.5  |
| Actuated g/C Ratio     | 0.14  | 0.14 |      | 0.77  | 0.77  | 0.77  |
| Clearance Time (s)     | 4.5   | 4.5  |      | 5.0   | 5.0   | 5.0   |
| Vehicle Extension (s)  | 2.0   | 2.0  |      | 2.0   | 2.0   | 2.0   |
| Lane Grp Cap (vph)     | 383   | 173  |      | 1057  | 996   | 3142  |
| v/s Ratio Prot         | c0.07 |      |      | 0.07  | 0.13  | c0.20 |
| v/s Ratio Perm         |       | 0.07 |      |       |       |       |
| v/c Ratio              | 0.54  | 0.50 |      | 0.09  | 0.16  | 0.26  |
| Uniform Delay, d1      | 36.1  | 35.9 |      | 2.5   | 2.7   | 2.9   |
| Progression Factor     | 1.00  | 1.00 |      | 0.30  | 0.54  | 0.24  |
| Incremental Delay, d2  | 0.8   | 0.8  |      | 0.1   | 0.3   | 0.2   |
| Delay (s)              | 36.9  | 36.7 |      | 0.9   | 1.8   | 0.9   |
| Level of Service       | D     | D    |      | A     | A     | A     |
| Approach Delay (s)     | 36.8  |      |      |       |       | 1.0   |
| Approach LOS           | D     |      |      |       |       | A     |



















Intersection Summary

|                                   |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 9.2   | HCM 2000 Level of Service | A   |
| HCM 2000 Volume to Capacity ratio | 0.30  |                           |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 35.4% | ICU Level of Service      | A   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group

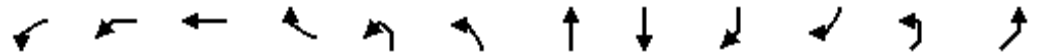
HCM 2010 Signalized Intersection Summary  
 34: MLK Jr. Way & 18th Street

2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 17  | 252   | 3   | 29   | 76  | 0   | 0   | 141   | 58  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 17  | 252   | 3   | 29   | 76  | 0   | 0   | 141   | 58  |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.97  | 0.99   |   | 1.00  | 1.00  |   | 0.97  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 17  | 252   | 1   | 29   | 76  | 0   | 0   | 141   | 28  |
| Adj No. of Lanes             |   |   |   | 1   | 3   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 639   | 1882  | 7   | 384  | 1022  | 0   | 0   | 1263  | 244   |
| Arrive On Green              |   |   |   | 0.40  | 0.40  | 0.41  | 0.48   | 0.48  | 0.00  | 0.00  | 0.48  | 0.49  |
| Sat Flow, veh/h              |   |   |   | 1597  | 4705  | 19  | 629  | 2220  | 0   | 0   | 2732  | 512   |
| Grp Volume(v), veh/h         |   |   |   | 17  | 163   | 90  | 56   | 49  | 0   | 0   | 83  | 86  |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1526  | 1672  | 1323   | 1449  | 0   | 0   | 1593  | 1567  |
| Q Serve(g_s), s              |   |   |   | 0.4   | 2.2   | 2.2   | 0.0  | 1.2   | 0.0   | 0.0   | 1.9   | 2.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 0.4   | 2.2   | 2.2   | 2.0  | 1.2   | 0.0   | 0.0   | 1.9   | 2.0   |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.01  | 0.51   |   | 0.00  | 0.00  |   | 0.33  |
| Lane Grp Cap(c), veh/h       |   |   |   | 639   | 1220  | 669   | 715  | 691   | 0   | 0   | 760   | 747   |
| V/C Ratio(X)                 |   |   |   | 0.03  | 0.13  | 0.13  | 0.08   | 0.07  | 0.00  | 0.00  | 0.11  | 0.11  |
| Avail Cap(c_a), veh/h        |   |   |   | 639   | 1220  | 669   | 715  | 691   | 0   | 0   | 760   | 747   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 11.8  | 12.4  | 12.4  | 9.2  | 9.2   | 0.0   | 0.0   | 9.4   | 9.3   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.2   | 0.4   | 0.2  | 0.2   | 0.0   | 0.0   | 0.3   | 0.3   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.2   | 1.0   | 1.1   | 0.6  | 0.5   | 0.0   | 0.0   | 0.9   | 0.9   |
| LnGrp Delay(d),s/veh         |   |   |   | 11.9  | 12.6  | 12.8  | 9.4  | 9.4   | 0.0   | 0.0   | 9.7   | 9.6   |
| LnGrp LOS                    |   |   |   | B   | B   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 270   |   |  | 105   |   |   | 169   |   |
| Approach Delay, s/veh        |   |   |   |   | 12.6  |   |  | 9.4   |   |   | 9.6   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 35.0  |   |   |   | 35.0  |  | 30.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 3.0   |   |   |   | 3.0   |  | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   |   |   | 32.0  |  | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.0   |   |   |   | 4.0   |  | 4.2   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 1.6   |   |   |   | 1.7   |  | 1.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.1  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 35: Jefferson Street & San Pablo Avenue & 19th Street

2100 Telegraph  
 Existing Conditions AM



| Movement               | WBL2 | WBL  | WBT  | WBR  | NBL2 | NBL  | NBT  | SBT   | SBR  | SBR2 | NEL2 | NEL  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↖    | ↑    | ↑↑    |      |      |      | ↗↘   |
| Traffic Volume (vph)   | 43   | 18   | 231  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| Future Volume (vph)    | 43   | 18   | 231  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      | 4.0  |      |      | 4.0  | 4.0  | 4.0   |      |      |      | 4.0  |
| Lane Util. Factor      |      |      | 0.95 |      |      | 1.00 | 1.00 | 0.95  |      |      |      | 0.97 |
| Frbp, ped/bikes        |      |      | 0.99 |      |      | 1.00 | 1.00 | 0.98  |      |      |      | 1.00 |
| Flpb, ped/bikes        |      |      | 1.00 |      |      | 0.97 | 1.00 | 1.00  |      |      |      | 1.00 |
| Frt                    |      |      | 0.98 |      |      | 1.00 | 1.00 | 0.96  |      |      |      | 1.00 |
| Flt Protected          |      |      | 0.99 |      |      | 0.95 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (prot)      |      |      | 3055 |      |      | 1550 | 1676 | 3006  |      |      |      | 3088 |
| Flt Permitted          |      |      | 0.99 |      |      | 0.59 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (perm)      |      |      | 3055 |      |      | 959  | 1676 | 3006  |      |      |      | 3088 |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 43   | 18   | 231  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| RTOR Reduction (vph)   | 0    | 0    | 21   | 0    | 0    | 0    | 0    | 7     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 325  | 0    | 0    | 16   | 77   | 259   | 0    | 0    | 0    | 68   |
| Confl. Peds. (#/hr)    |      | 17   |      | 30   |      | 24   |      |       | 24   |      |      |      |
| Confl. Bikes (#/hr)    |      |      |      | 4    |      |      |      |       | 48   |      |      |      |
| Turn Type              | Perm | Perm | NA   |      | Perm | Perm | NA   | NA    |      |      | Perm | Prot |
| Protected Phases       |      |      | 4    |      |      |      | 2    | 6     |      |      |      | 3    |
| Permitted Phases       | 4    | 4    |      |      | 2    | 2    |      |       |      |      | 3    |      |
| Actuated Green, G (s)  |      |      | 20.1 |      |      | 38.1 | 38.1 | 38.1  |      |      |      | 5.3  |
| Effective Green, g (s) |      |      | 21.1 |      |      | 40.6 | 40.6 | 40.6  |      |      |      | 6.3  |
| Actuated g/C Ratio     |      |      | 0.26 |      |      | 0.51 | 0.51 | 0.51  |      |      |      | 0.08 |
| Clearance Time (s)     |      |      | 5.0  |      |      | 6.5  | 6.5  | 6.5   |      |      |      | 5.0  |
| Vehicle Extension (s)  |      |      | 2.0  |      |      | 2.0  | 2.0  | 2.0   |      |      |      | 2.0  |
| Lane Grp Cap (vph)     |      |      | 805  |      |      | 486  | 850  | 1525  |      |      |      | 243  |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.09 |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.11 |      |      | 0.02 |      |       |      |      |      | 0.02 |
| v/c Ratio              |      |      | 0.40 |      |      | 0.03 | 0.09 | 0.17  |      |      |      | 0.28 |
| Uniform Delay, d1      |      |      | 24.3 |      |      | 9.9  | 10.2 | 10.6  |      |      |      | 34.7 |
| Progression Factor     |      |      | 1.00 |      |      | 1.00 | 1.00 | 0.48  |      |      |      | 1.00 |
| Incremental Delay, d2  |      |      | 0.1  |      |      | 0.1  | 0.2  | 0.2   |      |      |      | 0.2  |
| Delay (s)              |      |      | 24.4 |      |      | 10.0 | 10.4 | 5.3   |      |      |      | 34.9 |
| Level of Service       |      |      | C    |      |      | A    | B    | A     |      |      |      | C    |
| Approach Delay (s)     |      |      | 24.4 |      |      |      | 10.3 | 5.3   |      |      |      | 34.9 |
| Approach LOS           |      |      | C    |      |      |      | B    | A     |      |      |      | C    |

| Intersection Summary              |       |                             |
|-----------------------------------|-------|-----------------------------|
| HCM 2000 Control Delay            | 17.0  | HCM 2000 Level of Service B |
| HCM 2000 Volume to Capacity ratio | 0.25  |                             |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) 12.0   |
| Intersection Capacity Utilization | 47.4% | ICU Level of Service A      |
| Analysis Period (min)             | 15    |                             |


















c Critical Lane Group



|                        |      |
|------------------------|------|
| Movement               | NER2 |
| Lane Configurations    |      |
| Traffic Volume (vph)   | 2    |
| Future Volume (vph)    | 2    |
| Ideal Flow (vphpl)     | 1900 |
| Total Lost time (s)    |      |
| Lane Util. Factor      |      |
| Frbp, ped/bikes        |      |
| Flpb, ped/bikes        |      |
| Frt                    |      |
| Flt Protected          |      |
| Satd. Flow (prot)      |      |
| Flt Permitted          |      |
| Satd. Flow (perm)      |      |
| Peak-hour factor, PHF  | 1.00 |
| Adj. Flow (vph)        | 2    |
| RTOR Reduction (vph)   | 0    |
| Lane Group Flow (vph)  | 0    |
| Confl. Peds. (#/hr)    |      |
| Confl. Bikes (#/hr)    |      |
| Turn Type              |      |
| Protected Phases       |      |
| Permitted Phases       |      |
| Actuated Green, G (s)  |      |
| Effective Green, g (s) |      |
| Actuated g/C Ratio     |      |
| Clearance Time (s)     |      |
| Vehicle Extension (s)  |      |
| Lane Grp Cap (vph)     |      |
| v/s Ratio Prot         |      |
| v/s Ratio Perm         |      |
| v/c Ratio              |      |
| Uniform Delay, d1      |      |
| Progression Factor     |      |
| Incremental Delay, d2  |      |
| Delay (s)              |      |
| Level of Service       |      |
| Approach Delay (s)     |      |
| Approach LOS           |      |
| Intersection Summary   |      |

HCM 2010 Signalized Intersection Summary  
 36: Telegraph Avenue & 19th Street
















2100 Telegraph  
 Existing Conditions AM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 24  | 140   | 105   | 100   | 91  | 0   | 0   | 135   | 90  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 24  | 140   | 105   | 100   | 91  | 0   | 0   | 135   | 90  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.78  | 0.96  |   | 1.00  | 1.00  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 0   | 0   | 1710  | 1676  | 1710  | 1676  | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 0   | 0   | 0   | 24  | 140   | 28  | 100   | 91  | 0   | 0   | 135   | 64  |
| Adj No. of Lanes             | 1   | 0   | 0   | 0   | 2   | 0   | 1   | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 0   | 0   | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   | 0   | 0   | 0   | 133   | 777   | 156   | 545   | 670   | 0   | 0   | 414   | 196   |
| Arrive On Green              | 0.00  | 0.00  | 0.00  | 0.34  | 0.34  | 0.33  | 0.40  | 0.40  | 0.00  | 0.00  | 0.40  | 0.34  |
| Sat Flow, veh/h              |   | 0   |   | 386   | 2261  | 454   | 1023  | 1676  | 0   | 0   | 1036  | 491   |
| Grp Volume(v), veh/h         |   | 0.0   |   | 103   | 0   | 89  | 100   | 91  | 0   | 0   | 0   | 199   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1657  | 0   | 1444  | 1023  | 1676  | 0   | 0   | 0   | 1527  |
| Q Serve(g_s), s              |   |   |   | 1.4   | 0.0   | 1.4   | 2.3   | 1.1   | 0.0   | 0.0   | 0.0   | 2.9   |
| Cycle Q Clear(g_c), s        |   |   |   | 1.4   | 0.0   | 1.4   | 5.2   | 1.1   | 0.0   | 0.0   | 0.0   | 2.9   |
| Prop In Lane                 |   |   |   | 0.23  |   | 0.31  | 1.00  |   | 0.00  | 0.00  |   | 0.32  |
| Lane Grp Cap(c), veh/h       |   |   |   | 570   | 0   | 496   | 545   | 670   | 0   | 0   | 0   | 610   |
| V/C Ratio(X)                 |   |   |   | 0.18  | 0.00  | 0.18  | 0.18  | 0.14  | 0.00  | 0.00  | 0.00  | 0.33  |
| Avail Cap(c_a), veh/h        |   |   |   | 1091  | 0   | 950   | 1352  | 1991  | 0   | 0   | 0   | 1814  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 1.00  | 1.00  | 0.00  | 0.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 7.2   | 0.0   | 7.2   | 8.3   | 5.9   | 0.0   | 0.0   | 0.0   | 6.7   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.1   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.6   | 0.0   | 0.5   | 0.6   | 0.5   | 0.0   | 0.0   | 0.0   | 1.2   |
| LnGrp Delay(d),s/veh         |   |   |   | 7.2   | 0.0   | 7.3   | 8.3   | 6.0   | 0.0   | 0.0   | 0.0   | 6.8   |
| LnGrp LOS                    |   |   |   | A   |   | A   | A   | A   |   |   |   | A   |
| Approach Vol, veh/h          |   |   |   |   | 192   |   |   | 191   |   |   |   | 199   |
| Approach Delay, s/veh        |   |   |   |   | 7.2   |   |   | 7.2   |   |   |   | 6.8   |
| Approach LOS                 |   |   |   |   | A   |   |   | A   |   |   |   | A   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 16.4  |   |   |   | 16.4  |   | 14.7  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   |   |   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |   | 20.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 7.2   |   |   |   | 4.9   |   | 3.4   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 1.9   |   |   |   | 1.9   |   | 0.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 7.1   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |   |   |   |   |   |   |



HCM 2010 Signalized Intersection Summary  
37: Broadway & 19th Street

2100 Telegraph  
Existing Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 18  | 159   | 51  | 82   | 355   | 0   | 0   | 423   | 27  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 18  | 159   | 51  | 82   | 355   | 0   | 0   | 423   | 27  |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.80  | 0.97   |   | 1.00  | 1.00  |   | 0.89  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 18  | 159   | 13  | 82   | 355   | 0   | 0   | 423   | 20  |
| Adj No. of Lanes             |   |   |   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 0   | 2   | 0   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 97  | 885   | 75  | 306  | 1265  | 0   | 0   | 2486  | 116   |
| Arrive On Green              |   |   |   | 0.33  | 0.33  | 0.32  | 1.00   | 1.00  | 0.00  | 0.00  | 0.74  | 0.73  |
| Sat Flow, veh/h              |   |   |   | 298   | 2704  | 228   | 421  | 2341  | 0   | 0   | 4603  | 208   |
| Grp Volume(v), veh/h         |   |   |   | 100   | 0   | 90  | 214  | 223   | 0   | 0   | 288   | 155   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1662  | 0   | 1568  | 1237   | 1449  | 0   | 0   | 1526  | 1609  |
| Q Serve(g_s), s              |   |   |   | 3.0   | 0.0   | 2.9   | 0.0  | 0.0   | 0.0   | 0.0   | 1.9   | 2.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 3.0   | 0.0   | 2.9   | 0.0  | 0.0   | 0.0   | 0.0   | 1.9   | 2.0   |
| Prop In Lane                 |   |   |   | 0.18  |   | 0.15  | 0.38   |   | 0.00  | 0.00  |   | 0.13  |
| Lane Grp Cap(c), veh/h       |   |   |   | 544   | 0   | 513   | 762  | 809   | 0   | 0   | 1704  | 898   |
| V/C Ratio(X)                 |   |   |   | 0.18  | 0.00  | 0.17  | 0.28   | 0.28  | 0.00  | 0.00  | 0.17  | 0.17  |
| Avail Cap(c_a), veh/h        |   |   |   | 653   | 0   | 616   | 762  | 809   | 0   | 0   | 1704  | 898   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 1.00  | 1.00  | 1.33  | 1.33  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.95   | 0.95  | 0.00  | 0.00  | 0.99  | 0.99  |
| Uniform Delay (d), s/veh     |   |   |   | 16.9  | 0.0   | 16.8  | 0.0  | 0.0   | 0.0   | 0.0   | 4.2   | 4.3   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.0   | 0.1   | 0.9  | 0.8   | 0.0   | 0.0   | 0.2   | 0.4   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 1.4   | 0.0   | 1.2   | 0.2  | 0.2   | 0.0   | 0.0   | 0.8   | 0.9   |
| LnGrp Delay(d),s/veh         |   |   |   | 16.9  | 0.0   | 16.9  | 0.9  | 0.8   | 0.0   | 0.0   | 4.4   | 4.7   |
| LnGrp LOS                    |   |   |   | B   |   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 190   |   |  | 437   |   |   | 443   |   |
| Approach Delay, s/veh        |   |   |   |   | 16.9  |   |  | 0.8   |   |   | 4.5   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.6  |   |   |   | 43.6  |  | 26.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   |   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 34.0  |   |   |   | 34.0  |  | 27.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   |   |   | 4.0   |  | 5.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.4   |   |   |   | 4.4   |  | 0.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   |   | 5.2   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   |   | A   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 38: Brush Street & I-980 Westbound On-ramp & 17th Street

2100 Telegraph  
 Existing Conditions AM



| Movement               | EBT   | EBR  | EBR2 | SBL2  | SBL   | SBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    |      |      | ↵     | ↵     | ↵↑   |
| Traffic Volume (vph)   | 180   | 30   | 64   | 1317  | 478   | 1029 |
| Future Volume (vph)    | 180   | 30   | 64   | 1317  | 478   | 1029 |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.95  |      |      | 0.91  | 0.86  | 0.86 |
| Frbp, ped/bikes        | 0.99  |      |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  |      |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.95  |      |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 0.95  | 0.99 |
| Satd. Flow (prot)      | 3001  |      |      | 1449  | 1370  | 2857 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 0.95  | 0.99 |
| Satd. Flow (perm)      | 3001  |      |      | 1449  | 1370  | 2857 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 180   | 30   | 64   | 1317  | 478   | 1029 |
| RTOR Reduction (vph)   | 35    | 0    | 0    | 90    | 72    | 0    |
| Lane Group Flow (vph)  | 239   | 0    | 0    | 634   | 760   | 1268 |
| Confl. Bikes (#/hr)    |       | 5    |      |       |       |      |
| Turn Type              | NA    |      |      | Split | Split | NA   |
| Protected Phases       | 4     |      |      | 6     | 6     | 6    |
| Permitted Phases       |       |      |      |       |       |      |
| Actuated Green, G (s)  | 12.1  |      |      | 68.4  | 68.4  | 68.4 |
| Effective Green, g (s) | 12.6  |      |      | 69.4  | 69.4  | 69.4 |
| Actuated g/C Ratio     | 0.14  |      |      | 0.77  | 0.77  | 0.77 |
| Clearance Time (s)     | 4.5   |      |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   |      |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 420   |      |      | 1117  | 1056  | 2203 |
| v/s Ratio Prot         | c0.08 |      |      | 0.44  | c0.56 | 0.44 |
| v/s Ratio Perm         |       |      |      |       |       |      |
| v/c Ratio              | 0.57  |      |      | 0.57  | 0.72  | 0.58 |
| Uniform Delay, d1      | 36.2  |      |      | 4.2   | 5.3   | 4.2  |
| Progression Factor     | 1.00  |      |      | 0.31  | 0.71  | 0.13 |
| Incremental Delay, d2  | 1.1   |      |      | 1.5   | 3.2   | 0.8  |
| Delay (s)              | 37.2  |      |      | 2.8   | 6.9   | 1.4  |
| Level of Service       | D     |      |      | A     | A     | A    |
| Approach Delay (s)     | 37.2  |      |      |       |       | 3.4  |
| Approach LOS           | D     |      |      |       |       | A    |

Intersection Summary

|                                   |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 6.4   | HCM 2000 Level of Service | A   |
| HCM 2000 Volume to Capacity ratio | 0.70  |                           |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 60.3% | ICU Level of Service      | B   |
| Analysis Period (min)             | 15    |                           |     |
| c Critical Lane Group             |       |                           |     |

HCM Signalized Intersection Capacity Analysis  
 39: I-980 Eastbound Off-ramp & Castro Street & 17th Street



















2100 Telegraph  
 Existing Conditions AM



| Movement                          | EBL   | EBT   | NBT   | NBR  | NEL                       | NER  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|
| Lane Configurations               |       |       |       |      |                           |      |
| Traffic Volume (vph)              | 234   | 1263  | 382   | 35   | 451                       | 114  |
| Future Volume (vph)               | 234   | 1263  | 382   | 35   | 451                       | 114  |
| Ideal Flow (vphp)                 | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   | 4.0   |      | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 0.91  | 0.91  |      | 0.97                      |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Frt                               | 1.00  | 1.00  | 0.99  |      | 0.97                      |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (prot)                 | 1593  | 4577  | 4512  |      | 3033                      |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (perm)                 | 1593  | 4577  | 4512  |      | 3033                      |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 234   | 1263  | 382   | 35   | 451                       | 114  |
| RTOR Reduction (vph)              | 80    | 0     | 14    | 0    | 0                         | 0    |
| Lane Group Flow (vph)             | 154   | 1263  | 403   | 0    | 565                       | 0    |
| Confl. Peds. (#/hr)               |       |       |       | 6    |                           |      |
| Confl. Bikes (#/hr)               |       |       |       |      |                           |      |
| Turn Type                         | Split | NA    | NA    |      | Prot                      |      |
| Protected Phases                  | 4     | 4     | 2     |      | 1                         |      |
| Permitted Phases                  |       |       |       |      |                           |      |
| Actuated Green, G (s)             | 42.9  | 42.9  | 13.4  |      | 19.2                      |      |
| Effective Green, g (s)            | 43.4  | 43.4  | 14.4  |      | 20.2                      |      |
| Actuated g/C Ratio                | 0.48  | 0.48  | 0.16  |      | 0.22                      |      |
| Clearance Time (s)                | 4.5   | 4.5   | 5.0   |      | 5.0                       |      |
| Vehicle Extension (s)             | 2.0   | 2.0   | 2.0   |      | 2.0                       |      |
| Lane Grp Cap (vph)                | 768   | 2207  | 721   |      | 680                       |      |
| v/s Ratio Prot                    | 0.10  | c0.28 | c0.09 |      | c0.19                     |      |
| v/s Ratio Perm                    |       |       |       |      |                           |      |
| v/c Ratio                         | 0.20  | 0.57  | 0.56  |      | 0.83                      |      |
| Uniform Delay, d1                 | 13.4  | 16.7  | 34.9  |      | 33.3                      |      |
| Progression Factor                | 0.62  | 0.83  | 1.00  |      | 1.00                      |      |
| Incremental Delay, d2             | 0.5   | 0.8   | 0.5   |      | 8.2                       |      |
| Delay (s)                         | 8.8   | 14.7  | 35.4  |      | 41.4                      |      |
| Level of Service                  | A     | B     | D     |      | D                         |      |
| Approach Delay (s)                |       | 13.8  | 35.4  |      | 41.4                      |      |
| Approach LOS                      |       | B     | D     |      | D                         |      |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |
| HCM 2000 Control Delay            |       |       | 23.7  |      | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.64  |      |                           |      |
| Actuated Cycle Length (s)         |       |       | 90.0  |      | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization |       |       | 65.9% |      | ICU Level of Service      | C    |
| Analysis Period (min)             |       |       | 15    |      |                           |      |
| c Critical Lane Group             |       |       |       |      |                           |      |























HCM 2010 Signalized Intersection Summary  
 1: Northgate Avenue/1-980 SB Off Ramp & 27th Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |  |  |  |
| Traffic Volume (veh/h)       | 0   | 459   | 38  | 17  | 258   | 0   | 0  | 0   | 0   | 552   | 430   | 261   |
| Future Volume (veh/h)        | 0   | 459   | 38  | 17  | 258   | 0   | 0  | 0   | 0   | 552   | 430   | 261   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.96  | 0.99  |   | 1.00  |  |   |   | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 0   | 1676  | 1710  | 1676  | 1676  | 0   |  |   |   | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 0   | 459   | 30  | 17  | 258   | 0   |  |   |   | 552   | 430   | 132   |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 2   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 2   | 2   | 2   | 0   |  |   |   | 2   | 2   | 2   |
| Cap, veh/h                   | 0   | 1192  | 78  | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| Arrive On Green              | 0.00  | 0.39  | 0.36  | 0.39  | 0.39  | 0.00  |  |   |   | 0.51  | 0.51  | 0.51  |
| Sat Flow, veh/h              | 0   | 3111  | 197   | 808   | 3269  | 0   |  |   |   | 3193  | 1676  | 1425  |
| Grp Volume(v), veh/h         | 0   | 241   | 248   | 17  | 258   | 0   |  |   |   | 552   | 430   | 132   |
| Grp Sat Flow(s),veh/h/ln     | 0   | 1593  | 1632  | 808   | 1593  | 0   |  |   |   | 1597  | 1676  | 1425  |
| Q Serve(g_s), s              | 0.0   | 8.6   | 8.7   | 1.2   | 4.3   | 0.0   |  |   |   | 8.3   | 13.6  | 4.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 8.6   | 8.7   | 10.0  | 4.3   | 0.0   |  |   |   | 8.3   | 13.6  | 4.0   |
| Prop In Lane                 | 0.00  |   | 0.12  | 1.00  |   | 0.00  |  |   |   | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 0   | 627   | 643   | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| V/C Ratio(X)                 | 0.00  | 0.38  | 0.39  | 0.05  | 0.21  | 0.00  |  |   |   | 0.34  | 0.51  | 0.18  |
| Avail Cap(c_a), veh/h        | 0   | 627   | 643   | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 0.0   | 17.3  | 17.5  | 20.9  | 16.0  | 0.0   |  |   |   | 11.8  | 13.1  | 10.7  |
| Incr Delay (d2), s/veh       | 0.0   | 1.8   | 1.8   | 0.3   | 0.4   | 0.0   |  |   |   | 0.6   | 2.2   | 0.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 4.1   | 4.3   | 0.3   | 1.9   | 0.0   |  |   |   | 3.7   | 6.7   | 1.7   |
| LnGrp Delay(d),s/veh         | 0.0   | 19.1  | 19.2  | 21.2  | 16.4  | 0.0   |  |   |   | 12.4  | 15.3  | 11.3  |
| LnGrp LOS                    |   | B   | B   | C   | B   |   |  |   |   | B   | B   | B   |
| Approach Vol, veh/h          |   | 489   |   |   | 275   |   |  |   |   |   | 1114  |   |
| Approach Delay, s/veh        |   | 19.2  |   |   | 16.7  |   |  |   |   |   | 13.4  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   | 35.5  |   | 44.5  |  | 35.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   | 6.5   |   | 5.5   |  | 6.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   | 29.0  |   | 39.0  |  | 29.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   | 10.7  |   | 15.6  |  | 12.0  |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   | 4.6   |   | 8.5   |  | 4.5   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 15.4  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |























HCM 2010 Signalized Intersection Summary  
 2: Northgate Avenue/I-980 NB On Ramp & 27th Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |    |  |  |    |   |  |    |  |  |  |  |
|------------------------------|---|---|---|---|---|--|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR  | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |   |   |  |    |   |   |   |   |
| Traffic Volume (veh/h)       | 175   | 836   | 0   | 0   | 238   | 448  | 37   | 544   | 91  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 175   | 836   | 0   | 0   | 238   | 448  | 37   | 544   | 91  | 0   | 0   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18   | 5  | 2   | 12  |   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0  | 0  | 0   | 0   |   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.97   | 1.00   |   | 1.00  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 0   | 1676  | 1676   | 1710   | 1676  | 1710  |   |   |   |
| Adj Flow Rate, veh/h         | 175   | 836   | 0   | 0   | 238   | 248  | 37   | 544   | 65  |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 2  | 0  | 3   | 0   |   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  |   |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 0   | 2   | 2  | 0  | 2   | 0   |   |   |   |
| Cap, veh/h                   | 230   | 1823  | 0   | 0   | 1115  | 850  | 92   | 1435  | 175   |   |   |   |
| Arrive On Green              | 0.29  | 1.00  | 0.00  | 0.00  | 0.35  | 0.35   | 0.36   | 0.36  | 0.34  |   |   |   |
| Sat Flow, veh/h              | 1597  | 3353  | 0   | 0   | 3269  | 2428   | 259  | 4027  | 492   |   |   |   |
| Grp Volume(v), veh/h         | 175   | 836   | 0   | 0   | 238   | 248  | 238  | 198   | 210   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1676  | 0   | 0   | 1593  | 1214   | 1664   | 1526  | 1589  |   |   |   |
| Q Serve(g_s), s              | 8.0   | 0.0   | 0.0   | 0.0   | 4.2   | 5.9  | 8.6  | 7.7   | 7.9   |   |   |   |
| Cycle Q Clear(g_c), s        | 8.0   | 0.0   | 0.0   | 0.0   | 4.2   | 5.9  | 8.6  | 7.7   | 7.9   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00   | 0.16   |   | 0.31  |   |   |   |
| Lane Grp Cap(c), veh/h       | 230   | 1823  | 0   | 0   | 1115  | 850  | 593  | 543   | 566   |   |   |   |
| V/C Ratio(X)                 | 0.76  | 0.46  | 0.00  | 0.00  | 0.21  | 0.29   | 0.40   | 0.36  | 0.37  |   |   |   |
| Avail Cap(c_a), veh/h        | 230   | 1823  | 0   | 0   | 1115  | 850  | 593  | 543   | 566   |   |   |   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.00  | 0.00  | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  |   |   |   |
| Uniform Delay (d), s/veh     | 27.3  | 0.0   | 0.0   | 0.0   | 18.3  | 18.8   | 19.3   | 19.1  | 19.3  |   |   |   |
| Incr Delay (d2), s/veh       | 21.0  | 0.8   | 0.0   | 0.0   | 0.4   | 0.9  | 2.0  | 1.9   | 1.9   |   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   |   |   |   |
| %ile BackOfQ(50%),veh/ln     | 4.8   | 0.2   | 0.0   | 0.0   | 1.9   | 2.1  | 4.2  | 3.5   | 3.8   |   |   |   |
| LnGrp Delay(d),s/veh         | 48.3  | 0.8   | 0.0   | 0.0   | 18.7  | 19.7   | 21.4   | 20.9  | 21.1  |   |   |   |
| LnGrp LOS                    | D   | A   |   |   | B   | B  | C  | C   | C   |   |   |   |
| Approach Vol, veh/h          |   | 1011  |   |   | 486   |  |  | 646   |   |   |   |   |
| Approach Delay, s/veh        |   | 9.0   |   |   | 19.2  |  |  | 21.2  |   |   |   |   |
| Approach LOS                 |   | A   |   |   | B   |  |  | C   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6  | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |  | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 32.5  |   | 47.5  |   |  | 15.5   | 32.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   |   | 5.5   |   |  | 3.5  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   | 42.0  |   |  | 12.0   | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 10.6  |   | 2.0   |   |  | 10.0   | 7.9   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.8   |   | 2.2   |   |  | 0.0  | 2.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |  |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 15.0  |   |   |  |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |  |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |  |  |   |   |   |   |   |

























HCM 2010 Signalized Intersection Summary  
3: Telegraph Avenue & 27th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 128   | 529   | 99  | 51  | 348   | 88  | 107   | 343   | 49  | 90  | 345   | 246   |
| Future Volume (veh/h)        | 128   | 529   | 99  | 51  | 348   | 88  | 107   | 343   | 49  | 90  | 345   | 246   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.91  | 1.00  |   | 0.91  | 0.99  |   | 0.92  | 0.98  |   | 0.94  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 128   | 529   | 99  | 51  | 348   | 88  | 107   | 343   | 24  | 90  | 345   | 121   |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 165   | 699   | 130   | 75  | 517   | 128   | 437   | 917   | 719   | 506   | 917   | 734   |
| Arrive On Green              | 0.10  | 0.26  | 0.27  | 0.02  | 0.07  | 0.07  | 0.73  | 0.73  | 0.73  | 0.55  | 0.55  | 0.55  |
| Sat Flow, veh/h              | 1597  | 2637  | 490   | 1597  | 2478  | 613   | 821   | 1676  | 1314  | 896   | 1676  | 1342  |
| Grp Volume(v), veh/h         | 128   | 318   | 310   | 51  | 221   | 215   | 107   | 343   | 24  | 90  | 345   | 121   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 1535  | 1597  | 1593  | 1498  | 821   | 1676  | 1314  | 896   | 1676  | 1342  |
| Q Serve(g_s), s              | 6.6   | 15.6  | 15.8  | 2.7   | 11.5  | 11.9  | 5.7   | 6.5   | 0.4   | 5.0   | 10.0  | 3.8   |
| Cycle Q Clear(g_c), s        | 6.6   | 15.6  | 15.8  | 2.7   | 11.5  | 11.9  | 15.7  | 6.5   | 0.4   | 11.5  | 10.0  | 3.8   |
| Prop In Lane                 | 1.00  |   | 0.32  | 1.00  |   | 0.41  | 1.00  |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 165   | 422   | 407   | 75  | 332   | 313   | 437   | 917   | 719   | 506   | 917   | 734   |
| V/C Ratio(X)                 | 0.78  | 0.75  | 0.76  | 0.68  | 0.67  | 0.69  | 0.24  | 0.37  | 0.03  | 0.18  | 0.38  | 0.16  |
| Avail Cap(c_a), veh/h        | 207   | 422   | 407   | 207   | 412   | 388   | 437   | 917   | 719   | 506   | 917   | 734   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 0.33  | 0.33  | 0.33  | 1.33  | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.16  | 0.16  | 0.16  | 0.94  | 0.94  | 0.94  | 0.96  | 0.96  | 0.96  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 37.1  | 28.7  | 28.7  | 41.2  | 36.7  | 36.8  | 10.0  | 6.1   | 5.3   | 13.3  | 11.0  | 9.6   |
| Incr Delay (d2), s/veh       | 1.7   | 1.1   | 1.2   | 3.7   | 1.5   | 2.1   | 1.3   | 1.1   | 0.1   | 0.8   | 1.2   | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 3.0   | 6.9   | 6.8   | 1.3   | 5.2   | 5.1   | 1.5   | 3.2   | 0.2   | 1.4   | 4.9   | 1.5   |
| LnGrp Delay(d),s/veh         | 38.9  | 29.8  | 29.9  | 44.9  | 38.2  | 39.0  | 11.3  | 7.3   | 5.4   | 14.0  | 12.2  | 10.1  |
| LnGrp LOS                    | D   | C   | C   | D   | D   | D   | B   | A   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 756   |   |   | 487   |   |   | 474   |   |   | 556   |   |
| Approach Delay, s/veh        |   | 31.4  |   |   | 39.2  |   |   | 8.1   |   |   | 12.0  |   |
| Approach LOS                 |   | C   |   |   | D   |   |   | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 50.5  | 8.0   | 26.5  |   | 50.5  | 12.8  | 21.7  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   | 4.5   | 3.5   |   | 5.5   | 4.5   | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.5  | 10.5  | 22.5  |   | 38.5  | 10.5  | 22.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 17.7  | 4.7   | 17.8  |   | 13.5  | 8.6   | 13.9  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.3   | 0.0   | 2.1   |   | 5.6   | 0.1   | 2.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 23.5  |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |   |   |   |   |   |   |













HCM 2010 Signalized Intersection Summary  
4: Broadway & 27th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |   |  |  |   |  |   |   |  |  |   |  |
|------------------------------|---|--|---|---|--|---|---|--|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |   | <br> |  |  | <br> |   |  | <br> |   |
| Traffic Volume (veh/h)       | 178   | 315  | 153   | 49  | 236  | 205   | 134   | 636  | 26  | 149   | 580  | 109   |
| Future Volume (veh/h)        | 178   | 315  | 153   | 49  | 236  | 205   | 134   | 636  | 26  | 149   | 580  | 109   |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5   | 2  | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |  | 0.96  | 0.99  |  | 1.00  | 0.99  |  | 0.91  | 0.98  |  | 0.93  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1710  | 1676   | 1676  | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 178   | 315  | 76  | 49  | 236  | 0   | 134   | 636  | 23  | 149   | 580  | 93  |
| Adj No. of Lanes             | 1   | 2  | 0   | 0   | 2  | 1   | 1   | 2  | 0   | 1   | 2  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 355   | 877  | 208   | 167   | 743  | 494   | 367   | 1692   | 61  | 455   | 1475   | 236   |
| Arrive On Green              | 0.11  | 0.11   | 0.11  | 0.35  | 0.35   | 0.00  | 1.00  | 1.00   | 1.00  | 0.54  | 0.54   | 0.53  |
| Sat Flow, veh/h              | 1010  | 2532   | 600   | 314   | 2146   | 1425  | 678   | 3123   | 113   | 683   | 2721   | 435   |
| Grp Volume(v), veh/h         | 178   | 196  | 195   | 129   | 156  | 0   | 134   | 324  | 335   | 149   | 339  | 334   |
| Grp Sat Flow(s),veh/h/ln     | 1010  | 1593   | 1539  | 1010  | 1449   | 1425  | 678   | 1593   | 1643  | 683   | 1593   | 1563  |
| Q Serve(g_s), s              | 14.5  | 9.7  | 10.0  | 2.7   | 6.7  | 0.0   | 6.1   | 0.0  | 0.0   | 10.9  | 10.5   | 10.7  |
| Cycle Q Clear(g_c), s        | 21.2  | 9.7  | 10.0  | 12.6  | 6.7  | 0.0   | 16.8  | 0.0  | 0.0   | 10.9  | 10.5   | 10.7  |
| Prop In Lane                 | 1.00  |  | 0.39  | 0.38  |  | 1.00  | 1.00  |  | 0.07  | 1.00  |  | 0.28  |
| Lane Grp Cap(c), veh/h       | 355   | 552  | 533   | 408   | 502  | 494   | 367   | 863  | 890   | 455   | 863  | 847   |
| V/C Ratio(X)                 | 0.50  | 0.36   | 0.37  | 0.32  | 0.31   | 0.00  | 0.37  | 0.38   | 0.38  | 0.33  | 0.39   | 0.39  |
| Avail Cap(c_a), veh/h        | 403   | 628  | 607   | 468   | 571  | 562   | 367   | 863  | 890   | 455   | 863  | 847   |
| HCM Platoon Ratio            | 0.33  | 0.33   | 0.33  | 1.00  | 1.00   | 1.00  | 2.00  | 2.00   | 2.00  | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.78  | 0.78   | 0.78  | 0.80  | 0.80   | 0.00  | 0.97  | 0.97   | 0.97  | 1.00  | 1.00   | 1.00  |
| Uniform Delay (d), s/veh     | 37.2  | 28.9   | 29.1  | 21.5  | 20.4   | 0.0   | 1.9   | 0.0  | 0.0   | 11.4  | 11.3   | 11.4  |
| Incr Delay (d2), s/veh       | 0.3   | 0.1  | 0.1   | 0.1   | 0.1  | 0.0   | 2.7   | 1.2  | 1.2   | 1.9   | 1.3  | 1.4   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 4.1   | 4.3  | 4.3   | 2.4   | 2.7  | 0.0   | 1.4   | 0.3  | 0.3   | 2.3   | 4.9  | 4.9   |
| LnGrp Delay(d),s/veh         | 37.6  | 29.0   | 29.2  | 21.6  | 20.5   | 0.0   | 4.6   | 1.2  | 1.2   | 13.3  | 12.7   | 12.8  |
| LnGrp LOS                    | D   | C  | C   | C   | C  |   | A   | A  | A   | B   | B  | B   |
| Approach Vol, veh/h          |   | 569  |   |   | 285  |   |   | 793  |   |   | 822  |   |
| Approach Delay, s/veh        |   | 31.7   |   |   | 21.0   |   |   | 1.8  |   |   | 12.8   |   |
| Approach LOS                 |   | C  |   |   | C  |   |   | A  |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7   | 8  |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  | 6   |   | 8  |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 51.1   |   | 33.9  |  | 51.1  |   | 33.9   |   |   |  |   |
| Change Period (Y+Rc), s      |   | 6.0  |   | 5.5   |  | 6.0   |   | 5.5  |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 41.0   |   | 32.5  |  | 41.0  |   | 32.5   |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 18.8   |   | 23.2  |  | 12.9  |   | 14.6   |   |   |  |   |
| Green Ext Time (p_c), s      |   | 9.6  |   | 2.8   |  | 10.5  |   | 3.7  |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 14.6  |  |   |   |  |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | B   |  |   |   |  |   |   |  |   |

HCM 2010 Signalized Intersection Summary  
5: Telegraph Avenue


















2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | WBL   | WBR   | NBT   | NBR   | SBL   | SBT   |   |   |
| Lane Configurations          |  |  |  |  |  |  |   |   |
| Traffic Volume (veh/h)       | 12  | 31  | 465   | 26  | 18  | 466   |   |   |
| Future Volume (veh/h)        | 12  | 31  | 465   | 26  | 18  | 466   |   |   |
| Number                       | 7   | 14  | 2   | 12  | 1   | 6   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  |   | 0.91  | 0.98  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |   |   |
| Adj Flow Rate, veh/h         | 12  | 1   | 465   | 23  | 18  | 466   |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 1   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 34  | 22  | 1512  | 1159  | 806   | 1512  |   |   |
| Arrive On Green              | 0.02  | 0.02  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 1676  | 1293  | 800   | 1676  |   |   |
| Grp Volume(v), veh/h         | 12  | 1   | 465   | 23  | 18  | 466   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 1676  | 1293  | 800   | 1676  |   |   |
| Q Serve(g_s), s              | 0.6   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.6   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 34  | 22  | 1512  | 1159  | 806   | 1512  |   |   |
| V/C Ratio(X)                 | 0.35  | 0.05  | 0.31  | 0.02  | 0.02  | 0.31  |   |   |
| Avail Cap(c_a), veh/h        | 432   | 377   | 1512  | 1159  | 806   | 1512  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 1.33  | 1.33  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.94  | 0.94  | 0.92  | 0.92  |   |   |
| Uniform Delay (d), s/veh     | 41.0  | 41.2  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 2.3   | 0.3   | 0.5   | 0.0   | 0.0   | 0.5   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 0.0   | 0.2   | 0.0   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 43.3  | 41.5  | 0.5   | 0.0   | 0.0   | 0.5   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   | A   | A   |   |   |
| Approach Vol, veh/h          | 13  |   | 488   |   |   | 484   |   |   |
| Approach Delay, s/veh        | 43.1  |   | 0.5   |   |   | 0.5   |   |   |
| Approach LOS                 | D   |   | A   |   |   | A   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.7  |   | 5.3   |   | 79.7  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 55.0  |   | 22.5  |   | 55.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.6   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 2.6   |   | 0.0   |   | 2.6   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.0   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |



HCM 2010 Signalized Intersection Summary  
6: Broadway & 26th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |   |   |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 6   | 10  | 21  | 0   | 0   | 0   | 33  | 786   | 20  | 30  | 737   | 24  |
| Future Volume (veh/h)        | 6   | 10  | 21  | 0   | 0   | 0   | 33  | 786   | 20  | 30  | 737   | 24  |
| Number                       | 7   | 4   | 14  |   |   |   | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.93  |   |   |   | 0.98  |   | 0.89  | 0.98  |   | 0.92  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 6   | 10  | 1   |   |   |   | 33  | 786   | 19  | 30  | 737   | 23  |
| Adj No. of Lanes             | 0   | 1   | 0   |   |   |   | 1   | 2   | 0   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 52  | 87  | 9   |   |   |   | 580   | 2526  | 61  | 560   | 2506  | 78  |
| Arrive On Green              | 0.09  | 0.09  | 0.08  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 573   | 955   | 95  |   |   |   | 621   | 3167  | 77  | 596   | 3143  | 98  |
| Grp Volume(v), veh/h         | 17  | 0   | 0   |   |   |   | 33  | 395   | 410   | 30  | 373   | 387   |
| Grp Sat Flow(s),veh/h/ln     | 1623  | 0   | 0   |   |   |   | 621   | 1593  | 1651  | 596   | 1593  | 1649  |
| Q Serve(g_s), s              | 0.8   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.8   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 | 0.35  |   | 0.06  |   |   |   | 1.00  |   | 0.05  | 1.00  |   | 0.06  |
| Lane Grp Cap(c), veh/h       | 147   | 0   | 0   |   |   |   | 580   | 1270  | 1317  | 560   | 1270  | 1315  |
| V/C Ratio(X)                 | 0.12  | 0.00  | 0.00  |   |   |   | 0.06  | 0.31  | 0.31  | 0.05  | 0.29  | 0.29  |
| Avail Cap(c_a), veh/h        | 706   | 0   | 0   |   |   |   | 580   | 1270  | 1317  | 560   | 1270  | 1315  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 1.33  | 1.33  | 1.33  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(l)           | 1.00  | 0.00  | 0.00  |   |   |   | 0.94  | 0.94  | 0.94  | 0.92  | 0.92  | 0.92  |
| Uniform Delay (d), s/veh     | 35.5  | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.0   |   |   |   | 0.2   | 0.6   | 0.6   | 0.2   | 0.5   | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.0   | 0.0   |   |   |   | 0.0   | 0.2   | 0.2   | 0.0   | 0.2   | 0.2   |
| LnGrp Delay(d),s/veh         | 35.6  | 0.0   | 0.0   |   |   |   | 0.2   | 0.6   | 0.6   | 0.2   | 0.5   | 0.5   |
| LnGrp LOS                    | D   |   |   |   |   |   | A   | A   | A   | A   | A   | A   |
| Approach Vol, veh/h          |   | 17  |   |   |   |   |   | 838   |   |   | 790   |   |
| Approach Delay, s/veh        |   | 35.6  |   |   |   |   |   | 0.6   |   |   | 0.5   |   |
| Approach LOS                 |   | D   |   |   |   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 72.3  |   | 12.7  |   | 72.3  |   |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |   |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 36.5  |   | 38.0  |   |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.8   |   | 2.0   |   |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.9   |   | 0.0   |   | 4.9   |   |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 0.9   |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |   |   |   |   |

# HCM Signalized Intersection Capacity Analysis

## 7: 25th Street & Broadway












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| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT                       | SBR  |
|-----------------------------------|------|-------|-------|------|------|------|------|-------|------|-------|---------------------------|------|
| Lane Configurations               |      | ↔     |       |      |      | ↔    |      | ↕↔    |      | ↔     | ↕↕                        |      |
| Traffic Volume (vph)              | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 675   | 17   | 235   | 513                       | 27   |
| Future Volume (vph)               | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 675   | 17   | 235   | 513                       | 27   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 2.5   |       |      |      | 4.0  |      | 4.5   |      | 1.5   | 4.5                       |      |
| Lane Util. Factor                 |      | 1.00  |       |      |      | 1.00 |      | 0.95  |      | 1.00  | 0.95                      |      |
| Frbp, ped/bikes                   |      | 0.91  |       |      |      | 1.00 |      | 0.99  |      | 1.00  | 0.99                      |      |
| Flpb, ped/bikes                   |      | 1.00  |       |      |      | 1.00 |      | 1.00  |      | 1.00  | 1.00                      |      |
| Frt                               |      | 0.93  |       |      |      | 0.86 |      | 1.00  |      | 1.00  | 0.99                      |      |
| Flt Protected                     |      | 1.00  |       |      |      | 1.00 |      | 1.00  |      | 0.95  | 1.00                      |      |
| Satd. Flow (prot)                 |      | 1416  |       |      |      | 1450 |      | 3143  |      | 1593  | 3126                      |      |
| Flt Permitted                     |      | 1.00  |       |      |      | 1.00 |      | 0.93  |      | 0.95  | 1.00                      |      |
| Satd. Flow (perm)                 |      | 1416  |       |      |      | 1450 |      | 2936  |      | 1593  | 3126                      |      |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 675   | 17   | 235   | 513                       | 27   |
| RTOR Reduction (vph)              | 0    | 20    | 0     | 0    | 0    | 114  | 0    | 2     | 0    | 0     | 4                         | 0    |
| Lane Group Flow (vph)             | 0    | 22    | 0     | 0    | 0    | 37   | 0    | 711   | 0    | 235   | 536                       | 0    |
| Confl. Peds. (#/hr)               | 1    |       | 34    | 34   |      | 1    | 102  |       | 92   |       |                           | 102  |
| Confl. Bikes (#/hr)               |      |       | 2     |      |      |      |      |       | 81   |       |                           | 20   |
| Turn Type                         |      | NA    |       |      |      | Prot | Perm | NA    |      | Prot  | NA                        |      |
| Protected Phases                  |      | 4     |       |      |      | 8    |      | 2     |      | 3     | 6                         |      |
| Permitted Phases                  |      |       |       |      |      |      | 2    |       |      |       |                           |      |
| Actuated Green, G (s)             |      | 3.7   |       |      |      | 20.3 |      | 55.2  |      | 16.1  | 55.2                      |      |
| Effective Green, g (s)            |      | 4.2   |       |      |      | 20.8 |      | 55.7  |      | 16.6  | 55.7                      |      |
| Actuated g/C Ratio                |      | 0.05  |       |      |      | 0.24 |      | 0.66  |      | 0.20  | 0.66                      |      |
| Clearance Time (s)                |      | 3.0   |       |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0                       |      |
| Vehicle Extension (s)             |      | 2.0   |       |      |      | 2.0  |      | 2.0   |      | 2.0   | 2.0                       |      |
| Lane Grp Cap (vph)                |      | 69    |       |      |      | 354  |      | 1923  |      | 311   | 2048                      |      |
| v/s Ratio Prot                    |      | c0.02 |       |      |      | 0.03 |      |       |      | c0.15 | 0.17                      |      |
| v/s Ratio Perm                    |      |       |       |      |      |      |      | c0.24 |      |       |                           |      |
| v/c Ratio                         |      | 0.32  |       |      |      | 0.10 |      | 0.37  |      | 0.76  | 0.26                      |      |
| Uniform Delay, d1                 |      | 39.0  |       |      |      | 24.9 |      | 6.7   |      | 32.3  | 6.1                       |      |
| Progression Factor                |      | 1.00  |       |      |      | 1.00 |      | 0.50  |      | 0.98  | 0.64                      |      |
| Incremental Delay, d2             |      | 1.0   |       |      |      | 0.0  |      | 0.5   |      | 8.8   | 0.3                       |      |
| Delay (s)                         |      | 40.0  |       |      |      | 24.9 |      | 3.8   |      | 40.4  | 4.2                       |      |
| Level of Service                  |      | D     |       |      |      | C    |      | A     |      | D     | A                         |      |
| Approach Delay (s)                |      | 40.0  |       |      | 24.9 |      |      | 3.8   |      |       | 15.2                      |      |
| Approach LOS                      |      | D     |       |      | C    |      |      | A     |      |       | B                         |      |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |      |       |      |       |                           |      |
| HCM 2000 Control Delay            |      |       | 11.9  |      |      |      |      |       |      |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.44  |      |      |      |      |       |      |       |                           |      |
| Actuated Cycle Length (s)         |      |       | 85.0  |      |      |      |      |       |      |       | Sum of lost time (s)      | 8.5  |
| Intersection Capacity Utilization |      |       | 55.5% |      |      |      |      |       |      |       | ICU Level of Service      | B    |
| Analysis Period (min)             |      |       | 15    |      |      |      |      |       |      |       |                           |      |
| c Critical Lane Group             |      |       |       |      |      |      |      |       |      |       |                           |      |

HCM 2010 Signalized Intersection Summary  
 8: Telegraph Avenue & 24th Street

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|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBR   | NBL   | NBT   | SBT   | SBR   |   |   |
| Lane Configurations          |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 16  | 22  | 22  | 469   | 426   | 12  |   |   |
| Future Volume (veh/h)        | 16  | 22  | 22  | 469   | 426   | 12  |   |   |
| Number                       | 7   | 14  | 5   | 2   | 6   | 16  |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  | 0.96  |   |   | 0.90  |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1710  |   |   |
| Adj Flow Rate, veh/h         | 16  | 4   | 22  | 469   | 426   | 11  |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 0   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 45  | 32  | 820   | 1501  | 1452  | 37  |   |   |
| Arrive On Green              | 0.03  | 0.02  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 821   | 1676  | 1622  | 42  |   |   |
| Grp Volume(v), veh/h         | 16  | 4   | 22  | 469   | 0   | 437   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 821   | 1676  | 0   | 1663  |   |   |
| Q Serve(g_s), s              | 0.8   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.8   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  | 1.00  |   |   | 0.03  |   |   |
| Lane Grp Cap(c), veh/h       | 45  | 32  | 820   | 1501  | 0   | 1490  |   |   |
| V/C Ratio(X)                 | 0.36  | 0.13  | 0.03  | 0.31  | 0.00  | 0.29  |   |   |
| Avail Cap(c_a), veh/h        | 451   | 394   | 820   | 1501  | 0   | 1490  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.91  | 0.91  | 0.00  | 0.96  |   |   |
| Uniform Delay (d), s/veh     | 40.6  | 40.8  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 1.8   | 0.7   | 0.1   | 0.5   | 0.0   | 0.5   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.1   | 0.0   | 0.2   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 42.3  | 41.4  | 0.1   | 0.5   | 0.0   | 0.5   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   |   | A   |   |   |
| Approach Vol, veh/h          | 20  |   |   | 491   | 437   |   |   |   |
| Approach Delay, s/veh        | 42.2  |   |   | 0.5   | 0.5   |   |   |   |
| Approach LOS                 | D   |   |   | A   | A   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.1  |   | 5.9   |   | 79.1  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 54.0  |   | 23.5  |   | 54.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.8   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 2.4   |   | 0.0   |   | 2.4   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.4   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

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| Movement                          | EBU  | EBL   | EBT   | EBR                  | EBR2                      | WBL2 | WBL   | WBT  | WBR  | NBL  | NBT   | NBR  |
|-----------------------------------|------|-------|-------|----------------------|---------------------------|------|-------|------|------|------|-------|------|
| Lane Configurations               |      | ↔     | ↕     | ↔                    |                           |      | ↔     | ↕    | ↔    | ↕↔   | ↕↔    |      |
| Traffic Volume (vph)              | 13   | 236   | 366   | 87                   | 24                        | 58   | 19    | 156  | 183  | 255  | 816   | 103  |
| Future Volume (vph)               | 13   | 236   | 366   | 87                   | 24                        | 58   | 19    | 156  | 183  | 255  | 816   | 103  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900                 | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)               |      | 4.0   | 4.0   | 4.0                  |                           |      | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   |      |
| Lane Util. Factor                 |      | 1.00  | 0.95  | 1.00                 |                           |      | 1.00  | 1.00 | 1.00 | 0.97 | 0.95  |      |
| Frbp, ped/bikes                   |      | 1.00  | 1.00  | 0.79                 |                           |      | 1.00  | 1.00 | 0.79 | 1.00 | 0.96  |      |
| Flpb, ped/bikes                   |      | 1.00  | 1.00  | 1.00                 |                           |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  |      |
| Frt                               |      | 1.00  | 1.00  | 0.85                 |                           |      | 1.00  | 1.00 | 0.85 | 1.00 | 0.98  |      |
| Flt Protected                     |      | 0.95  | 1.00  | 1.00                 |                           |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (prot)                 |      | 1593  | 3185  | 1121                 |                           |      | 1593  | 1676 | 1133 | 3090 | 3021  |      |
| Flt Permitted                     |      | 0.95  | 1.00  | 1.00                 |                           |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  |      |
| Satd. Flow (perm)                 |      | 1593  | 3185  | 1121                 |                           |      | 1593  | 1676 | 1133 | 3090 | 3021  |      |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00                 | 1.00                      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)                   | 13   | 236   | 366   | 87                   | 24                        | 58   | 19    | 156  | 183  | 255  | 816   | 103  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 94                   | 0                         | 0    | 0     | 0    | 140  | 0    | 7     | 0    |
| Lane Group Flow (vph)             | 0    | 249   | 366   | 17                   | 0                         | 0    | 77    | 156  | 43   | 255  | 912   | 0    |
| Confl. Peds. (#/hr)               |      |       |       | 56                   |                           |      |       |      | 75   |      |       | 164  |
| Confl. Bikes (#/hr)               |      |       |       | 44                   |                           |      |       |      | 18   |      |       | 25   |
| Turn Type                         | Prot | Prot  | NA    | Perm                 |                           |      | Prot  | Prot | NA   | Perm | Prot  | NA   |
| Protected Phases                  | 7    | 7     | 4     |                      |                           |      | 3     | 3    | 8    |      | 5     | 2    |
| Permitted Phases                  |      |       |       | 4                    |                           |      |       |      |      | 8    |       |      |
| Actuated Green, G (s)             |      | 23.2  | 20.2  | 20.2                 |                           |      | 7.0   | 32.2 | 32.2 | 16.3 | 51.8  |      |
| Effective Green, g (s)            |      | 24.2  | 21.2  | 21.2                 |                           |      | 8.0   | 33.2 | 33.2 | 17.3 | 52.8  |      |
| Actuated g/C Ratio                |      | 0.17  | 0.15  | 0.15                 |                           |      | 0.06  | 0.24 | 0.24 | 0.12 | 0.38  |      |
| Clearance Time (s)                |      | 5.0   | 5.0   | 5.0                  |                           |      | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   |      |
| Vehicle Extension (s)             |      | 3.0   | 3.0   | 3.0                  |                           |      | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   |      |
| Lane Grp Cap (vph)                |      | 275   | 482   | 169                  |                           |      | 91    | 397  | 268  | 381  | 1139  |      |
| v/s Ratio Prot                    |      | c0.16 | c0.11 |                      |                           |      | c0.05 | 0.09 |      | 0.08 | c0.30 |      |
| v/s Ratio Perm                    |      |       |       | 0.01                 |                           |      |       |      | 0.04 |      |       |      |
| v/c Ratio                         |      | 0.91  | 0.76  | 0.10                 |                           |      | 0.85  | 0.39 | 0.16 | 0.67 | 0.80  |      |
| Uniform Delay, d1                 |      | 56.8  | 57.0  | 51.2                 |                           |      | 65.4  | 44.9 | 42.4 | 58.6 | 38.9  |      |
| Progression Factor                |      | 1.00  | 1.00  | 1.00                 |                           |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  |      |
| Incremental Delay, d2             |      | 30.6  | 6.8   | 0.3                  |                           |      | 47.9  | 0.6  | 0.3  | 4.4  | 6.0   |      |
| Delay (s)                         |      | 87.4  | 63.7  | 51.4                 |                           |      | 113.2 | 45.6 | 42.6 | 63.0 | 44.9  |      |
| Level of Service                  |      | F     | E     | D                    |                           |      | F     | D    | D    | E    | D     |      |
| Approach Delay (s)                |      |       | 70.0  |                      |                           |      |       | 56.8 |      |      | 48.8  |      |
| Approach LOS                      |      |       | E     |                      |                           |      |       | E    |      |      | D     |      |
| <b>Intersection Summary</b>       |      |       |       |                      |                           |      |       |      |      |      |       |      |
| HCM 2000 Control Delay            |      |       | 55.2  |                      | HCM 2000 Level of Service |      |       |      |      | E    |       |      |
| HCM 2000 Volume to Capacity ratio |      |       | 0.82  |                      |                           |      |       |      |      |      |       |      |
| Actuated Cycle Length (s)         |      |       | 140.0 | Sum of lost time (s) |                           |      |       |      | 20.0 |      |       |      |
| Intersection Capacity Utilization |      |       | 80.0% | ICU Level of Service |                           |      |       |      | D    |      |       |      |
| Analysis Period (min)             |      |       | 15    |                      |                           |      |       |      |      |      |       |      |
| c Critical Lane Group             |      |       |       |                      |                           |      |       |      |      |      |       |      |

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

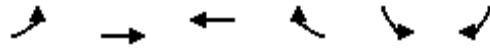
2100 Telegraph  
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| Movement                    | SBL   | SBT  | SBR  | SBR2 |
|-----------------------------|-------|------|------|------|
| Lane Configurations         | ↘     | ↑↑   |      |      |
| Traffic Volume (vph)        | 131   | 336  | 46   | 71   |
| Future Volume (vph)         | 131   | 336  | 46   | 71   |
| Ideal Flow (vphpl)          | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)         | 4.0   | 4.0  |      |      |
| Lane Util. Factor           | 1.00  | 0.95 |      |      |
| Frbp, ped/bikes             | 1.00  | 0.94 |      |      |
| Flpb, ped/bikes             | 1.00  | 1.00 |      |      |
| Frt                         | 1.00  | 0.96 |      |      |
| Flt Protected               | 0.95  | 1.00 |      |      |
| Satd. Flow (prot)           | 1593  | 2881 |      |      |
| Flt Permitted               | 0.95  | 1.00 |      |      |
| Satd. Flow (perm)           | 1593  | 2881 |      |      |
| Peak-hour factor, PHF       | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)             | 131   | 336  | 46   | 71   |
| RTOR Reduction (vph)        | 0     | 10   | 0    | 0    |
| Lane Group Flow (vph)       | 131   | 443  | 0    | 0    |
| Confl. Peds. (#/hr)         |       |      |      | 104  |
| Confl. Bikes (#/hr)         |       |      | 44   | 44   |
| Turn Type                   | Prot  | NA   |      |      |
| Protected Phases            | 1     | 6    |      |      |
| Permitted Phases            |       |      |      |      |
| Actuated Green, G (s)       | 12.8  | 48.3 |      |      |
| Effective Green, g (s)      | 13.8  | 49.3 |      |      |
| Actuated g/C Ratio          | 0.10  | 0.35 |      |      |
| Clearance Time (s)          | 5.0   | 5.0  |      |      |
| Vehicle Extension (s)       | 3.0   | 3.0  |      |      |
| Lane Grp Cap (vph)          | 157   | 1014 |      |      |
| v/s Ratio Prot              | c0.08 | 0.15 |      |      |
| v/s Ratio Perm              |       |      |      |      |
| v/c Ratio                   | 0.83  | 0.44 |      |      |
| Uniform Delay, d1           | 62.0  | 34.7 |      |      |
| Progression Factor          | 1.00  | 1.00 |      |      |
| Incremental Delay, d2       | 30.0  | 1.4  |      |      |
| Delay (s)                   | 92.0  | 36.1 |      |      |
| Level of Service            | F     | D    |      |      |
| Approach Delay (s)          |       | 48.6 |      |      |
| Approach LOS                |       | D    |      |      |
| <b>Intersection Summary</b> |       |      |      |      |

HCM 2010 Signalized Intersection Summary  
 10: Grand Avenue & Northgate Avenue























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| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |   |
|------------------------------|------|------|------|------|------|------|---|---|
| Lane Configurations          |      |      |      |      |      |      |   |   |
| Traffic Volume (veh/h)       | 175  | 793  | 600  | 316  | 204  | 95   |   |   |
| Future Volume (veh/h)        | 175  | 793  | 600  | 316  | 204  | 95   |   |   |
| Number                       | 5    | 2    | 6    | 16   | 7    | 14   |   |   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.90 | 1.00 | 1.00 |   |   |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1710 | 1676 | 1676 |   |   |
| Adj Flow Rate, veh/h         | 175  | 793  | 600  | 261  | 204  | 17   |   |   |
| Adj No. of Lanes             | 1    | 2    | 2    | 0    | 2    | 1    |   |   |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |   |
| Cap, veh/h                   | 518  | 2457 | 834  | 362  | 430  | 192  |   |   |
| Arrive On Green              | 0.65 | 1.00 | 0.80 | 0.79 | 0.13 | 0.13 |   |   |
| Sat Flow, veh/h              | 1597 | 3269 | 2168 | 905  | 3193 | 1425 |   |   |
| Grp Volume(v), veh/h         | 175  | 793  | 458  | 403  | 204  | 17   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597 | 1593 | 1593 | 1397 | 1597 | 1425 |   |   |
| Q Serve(g_s), s              | 4.2  | 0.0  | 11.5 | 11.9 | 5.0  | 0.9  |   |   |
| Cycle Q Clear(g_c), s        | 4.2  | 0.0  | 11.5 | 11.9 | 5.0  | 0.9  |   |   |
| Prop In Lane                 | 1.00 |      |      | 0.65 | 1.00 | 1.00 |   |   |
| Lane Grp Cap(c), veh/h       | 518  | 2457 | 637  | 559  | 430  | 192  |   |   |
| V/C Ratio(X)                 | 0.34 | 0.32 | 0.72 | 0.72 | 0.47 | 0.09 |   |   |
| Avail Cap(c_a), veh/h        | 518  | 2457 | 637  | 559  | 1052 | 469  |   |   |
| HCM Platoon Ratio            | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 |   |   |
| Upstream Filter(I)           | 0.64 | 0.64 | 0.86 | 0.86 | 1.00 | 1.00 |   |   |
| Uniform Delay (d), s/veh     | 10.8 | 0.0  | 6.3  | 6.5  | 34.0 | 32.2 |   |   |
| Incr Delay (d2), s/veh       | 0.1  | 0.2  | 5.9  | 6.8  | 0.3  | 0.1  |   |   |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |   |
| %ile BackOfQ(50%),veh/ln     | 1.8  | 0.1  | 5.8  | 5.2  | 2.2  | 0.7  |   |   |
| LnGrp Delay(d),s/veh         | 10.9 | 0.2  | 12.2 | 13.3 | 34.3 | 32.3 |   |   |
| LnGrp LOS                    | B    | A    | B    | B    | C    | C    |   |   |
| Approach Vol, veh/h          |      | 968  | 861  |      | 221  |      |   |   |
| Approach Delay, s/veh        |      | 2.2  | 12.7 |      | 34.1 |      |   |   |
| Approach LOS                 |      | A    | B    |      | C    |      |   |   |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8 |
| Assigned Phs                 |      | 2    |      | 4    | 5    | 6    |   |   |
| Phs Duration (G+Y+Rc), s     |      | 69.6 |      | 15.4 | 31.6 | 38.0 |   |   |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  | 4.5  | 4.5  |   |   |
| Max Green Setting (Gmax), s  |      | 48.5 |      | 27.5 | 10.5 | 33.5 |   |   |
| Max Q Clear Time (g_c+I1), s |      | 2.0  |      | 7.0  | 6.2  | 13.9 |   |   |
| Green Ext Time (p_c), s      |      | 5.5  |      | 0.9  | 2.0  | 4.1  |   |   |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |   |
| HCM 2010 Ctrl Delay          |      |      | 10.0 |      |      |      |   |   |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |   |
| <b>Notes</b>                 |      |      |      |      |      |      |   |   |

HCM 2010 Signalized Intersection Summary  
 11: Telegraph Avenue & Grand Avenue

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 Existing Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 117   | 763   | 160   | 53  | 477   | 62  | 290   | 336   | 119   | 87  | 291   | 90  |
| Future Volume (veh/h)        | 117   | 763   | 160   | 53  | 477   | 62  | 290   | 336   | 119   | 87  | 291   | 90  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.88  | 1.00  |   | 0.88  | 0.95  |   | 0.89  | 0.94  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 117   | 763   | 160   | 53  | 477   | 62  | 290   | 336   | 98  | 87  | 291   | 67  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 236   | 916   | 192   | 138   | 1001  | 129   | 543   | 917   | 692   | 372   | 598   | 442   |
| Arrive On Green              | 0.48  | 0.48  | 0.47  | 0.12  | 0.12  | 0.12  | 0.14  | 0.55  | 0.55  | 0.71  | 0.71  | 0.71  |
| Sat Flow, veh/h              | 763   | 2553  | 535   | 543   | 2790  | 360   | 1597  | 1676  | 1264  | 806   | 1676  | 1240  |
| Grp Volume(v), veh/h         | 117   | 476   | 447   | 53  | 271   | 268   | 290   | 336   | 98  | 87  | 291   | 67  |
| Grp Sat Flow(s),veh/h/ln     | 763   | 1593  | 1496  | 543   | 1593  | 1557  | 1597  | 1676  | 1264  | 806   | 1676  | 1240  |
| Q Serve(g_s), s              | 12.1  | 22.0  | 22.1  | 8.3   | 13.5  | 13.7  | 9.3   | 9.7   | 3.2   | 3.4   | 6.5   | 1.5   |
| Cycle Q Clear(g_c), s        | 25.8  | 22.0  | 22.1  | 30.4  | 13.5  | 13.7  | 9.3   | 9.7   | 3.2   | 3.4   | 6.5   | 1.5   |
| Prop In Lane                 | 1.00  |   | 0.36  | 1.00  |   | 0.23  | 1.00  |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 236   | 571   | 537   | 138   | 571   | 559   | 543   | 917   | 692   | 372   | 598   | 442   |
| V/C Ratio(X)                 | 0.50  | 0.83  | 0.83  | 0.38  | 0.47  | 0.48  | 0.53  | 0.37  | 0.14  | 0.23  | 0.49  | 0.15  |
| Avail Cap(c_a), veh/h        | 236   | 571   | 537   | 138   | 571   | 559   | 596   | 917   | 692   | 372   | 598   | 442   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 0.33  | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.94  | 0.94  | 0.94  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.95  | 0.95  | 0.95  |
| Uniform Delay (d), s/veh     | 27.3  | 20.0  | 20.1  | 48.4  | 30.0  | 30.1  | 13.3  | 10.9  | 9.5   | 8.3   | 8.8   | 8.0   |
| Incr Delay (d2), s/veh       | 0.6   | 9.1   | 9.7   | 0.6   | 0.2   | 0.2   | 0.3   | 1.1   | 0.4   | 1.4   | 2.7   | 0.7   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.6   | 10.9  | 10.4  | 1.3   | 6.0   | 6.0   | 4.1   | 4.7   | 1.2   | 0.8   | 3.3   | 0.6   |
| LnGrp Delay(d),s/veh         | 27.9  | 29.1  | 29.8  | 49.1  | 30.2  | 30.3  | 13.6  | 12.0  | 9.9   | 9.7   | 11.4  | 8.7   |
| LnGrp LOS                    | C   | C   | C   | D   | C   | C   | B   | B   | A   | A   | B   | A   |
| Approach Vol, veh/h          |   | 1040  |   |   | 592   |   |   | 724   |   |   | 445   |   |
| Approach Delay, s/veh        |   | 29.3  |   |   | 31.9  |   |   | 12.4  |   |   | 10.7  |   |
| Approach LOS                 |   | C   |   |   | C   |   |   | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 50.5  |   | 34.5  | 16.2  | 34.3  |   | 34.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   | 4.5   | 4.5   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 44.5  |   | 30.0  | 14.5  | 25.5  |   | 30.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 11.7  |   | 27.8  | 11.3  | 8.5   |   | 32.4  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.7   |   | 1.5   | 0.4   | 4.0   |   | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 22.5  |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |   |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 2

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕↕   |      |      | ↕↕   |      |      | ↕↕   |      |      | ↕↕   |      |
| Traffic Vol, veh/h       | 39   | 884  | 25   | 17   | 627  | 29   | 10   | 3    | 12   | 15   | 1    | 35   |
| Future Vol, veh/h        | 39   | 884  | 25   | 17   | 627  | 29   | 10   | 3    | 12   | 15   | 1    | 35   |
| Conflicting Peds, #/hr   | 54   | 0    | 57   | 57   | 0    | 54   | 30   | 0    | 30   | 30   | 0    | 30   |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 39   | 884  | 25   | 17   | 627  | 29   | 10   | 3    | 12   | 15   | 1    | 35   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |      | Minor2 |      |      |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 710    | 0 | 0 | 966    | 0 | 0 | 1410   | 1776 | 542  | 1282   | 1774 | 412  |
| Stage 1              | -      | - | - | -      | - | - | 1032   | 1032 | -    | 730    | 730  | -    |
| Stage 2              | -      | - | - | -      | - | - | 378    | 744  | -    | 552    | 1044 | -    |
| Critical Hdwy        | 4.14   | - | - | 4.14   | - | - | 7.54   | 6.54 | 6.94 | 7.54   | 6.54 | 6.94 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.54   | 5.54 | -    | 6.54   | 5.54 | -    |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.54   | 5.54 | -    | 6.54   | 5.54 | -    |
| Follow-up Hdwy       | 2.22   | - | - | 2.22   | - | - | 3.52   | 4.02 | 3.32 | 3.52   | 4.02 | 3.32 |
| Pot Cap-1 Maneuver   | 885    | - | - | 709    | - | - | 98     | 82   | 485  | 122    | 82   | 589  |
| Stage 1              | -      | - | - | -      | - | - | 249    | 308  | -    | 380    | 426  | -    |
| Stage 2              | -      | - | - | -      | - | - | 616    | 420  | -    | 486    | 304  | -    |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -    | -    | -      | -    | -    |
| Mov Cap-1 Maneuver   | 860    | - | - | 689    | - | - | 75     | 64   | 446  | 95     | 64   | 543  |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 75     | 64   | -    | 95     | 64   | -    |
| Stage 1              | -      | - | - | -      | - | - | 214    | 264  | -    | 327    | 388  | -    |
| Stage 2              | -      | - | - | -      | - | - | 537    | 383  | -    | 412    | 261  | -    |





















| Approach             | EB  | WB  | NB   | SB |
|----------------------|-----|-----|------|----|
| HCM Control Delay, s | 0.8 | 0.4 | 42.3 | 27 |
| HCM LOS              |     |     | E    | D  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 121   | 860   | -   | -   | 689   | -   | -   | 214   |
| HCM Lane V/C Ratio    | 0.207 | 0.045 | -   | -   | 0.025 | -   | -   | 0.238 |
| HCM Control Delay (s) | 42.3  | 9.4   | 0.4 | -   | 10.4  | 0.2 | -   | 27    |
| HCM Lane LOS          | E     | A     | A   | -   | B     | A   | -   | D     |
| HCM 95th %tile Q(veh) | 0.7   | 0.1   | -   | -   | 0.1   | -   | -   | 0.9   |



















HCM 2010 Signalized Intersection Summary  
 13: Broadway & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 126   | 698   | 96  | 63  | 347   | 53  | 192   | 650   | 192   | 91  | 337   | 140   |
| Future Volume (veh/h)        | 126   | 698   | 96  | 63  | 347   | 53  | 192   | 650   | 192   | 91  | 337   | 140   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.94  |   | 0.86  | 0.98  |   | 0.86  | 0.95  |   | 0.81  | 0.95  |   | 0.84  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 126   | 698   | 82  | 63  | 347   | 40  | 192   | 650   | 171   | 91  | 337   | 94  |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 1   | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 347   | 1062  | 125   | 114   | 669   | 87  | 447   | 1684  | 613   | 386   | 1255  | 339   |
| Arrive On Green              | 0.38  | 0.38  | 0.37  | 0.75  | 0.75  | 0.74  | 1.00  | 1.00  | 1.00  | 0.53  | 0.53  | 0.52  |
| Sat Flow, veh/h              | 842   | 2818  | 330   | 155   | 1775  | 231   | 811   | 3185  | 1158  | 570   | 2373  | 641   |
| Grp Volume(v), veh/h         | 126   | 394   | 386   | 200   | 0   | 250   | 192   | 650   | 171   | 91  | 223   | 208   |
| Grp Sat Flow(s),veh/h/ln     | 842   | 1593  | 1555  | 718   | 0   | 1442  | 811   | 1593  | 1158  | 570   | 1593  | 1421  |
| Q Serve(g_s), s              | 10.3  | 17.4  | 17.5  | 7.7   | 0.0   | 5.6   | 5.6   | 0.0   | 0.0   | 7.6   | 6.5   | 6.9   |
| Cycle Q Clear(g_c), s        | 15.9  | 17.4  | 17.5  | 25.2  | 0.0   | 5.6   | 12.6  | 0.0   | 0.0   | 7.6   | 6.5   | 6.9   |
| Prop In Lane                 | 1.00  |   | 0.21  | 0.32  |   | 0.16  | 1.00  |   | 1.00  | 1.00  |   | 0.45  |
| Lane Grp Cap(c), veh/h       | 347   | 601   | 586   | 326   | 0   | 544   | 447   | 1684  | 613   | 386   | 842   | 752   |
| V/C Ratio(X)                 | 0.36  | 0.66  | 0.66  | 0.61  | 0.00  | 0.46  | 0.43  | 0.39  | 0.28  | 0.24  | 0.26  | 0.28  |
| Avail Cap(c_a), veh/h        | 386   | 675   | 659   | 376   | 0   | 611   | 447   | 1684  | 613   | 386   | 842   | 752   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 1.00  | 1.00  | 0.99  | 0.00  | 0.99  | 0.90  | 0.90  | 0.90  | 0.98  | 0.98  | 0.98  |
| Uniform Delay (d), s/veh     | 23.7  | 21.9  | 22.0  | 10.1  | 0.0   | 7.3   | 1.0   | 0.0   | 0.0   | 11.2  | 11.0  | 11.2  |
| Incr Delay (d2), s/veh       | 0.2   | 1.3   | 1.4   | 1.2   | 0.0   | 0.2   | 2.7   | 0.6   | 1.0   | 1.4   | 0.7   | 0.9   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.4   | 7.9   | 7.7   | 2.2   | 0.0   | 2.2   | 1.4   | 0.1   | 0.2   | 1.3   | 3.0   | 2.9   |
| LnGrp Delay(d),s/veh         | 23.9  | 23.2  | 23.4  | 11.3  | 0.0   | 7.5   | 3.7   | 0.6   | 1.0   | 12.6  | 11.7  | 12.1  |
| LnGrp LOS                    | C   | C   | C   | B   |   | A   | A   | A   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 906   |   |   | 450   |   |   | 1013  |   |   | 522   |   |
| Approach Delay, s/veh        |   | 23.4  |   |   | 9.2   |   |   | 1.3   |   |   | 12.0  |   |
| Approach LOS                 |   | C   |   |   | A   |   |   | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 49.0  |   | 36.0  |   | 49.0  |   | 36.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 40.0  |   | 35.5  |   | 40.0  |   | 35.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 14.6  |   | 19.5  |   | 9.6   |   | 27.2  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 10.3  |   | 6.4   |   | 11.0  |   | 4.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.4  |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |   |   |   |   |   |   |























HCM 2010 Signalized Intersection Summary  
 14: Webster Street & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 35  | 746   | 181   | 106   | 379   | 31  | 0  | 0   | 0   | 73  | 203   | 80  |
| Future Volume (veh/h)        | 35  | 746   | 181   | 106   | 379   | 31  | 0  | 0   | 0   | 73  | 203   | 80  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  |  |   |   | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.93  |   | 0.86  | 1.00  |   | 0.88  |  |   |   | 1.00  |   | 0.73  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 35  | 746   | 160   | 106   | 379   | 24  |  |   |   | 73  | 203   | 67  |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 76  | 1145  | 242   | 147   | 1869  | 118   |  |   |   | 90  | 251   | 83  |
| Arrive On Green              | 0.96  | 0.96  | 0.93  | 0.09  | 0.62  | 0.60  |  |   |   | 0.29  | 0.29  | 0.29  |
| Sat Flow, veh/h              | 64  | 2382  | 502   | 1597  | 3015  | 190   |  |   |   | 316   | 878   | 290   |
| Grp Volume(v), veh/h         | 515   | 0   | 426   | 106   | 199   | 204   |  |   |   | 343   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1610  | 0   | 1339  | 1597  | 1593  | 1612  |  |   |   | 1483  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 3.8   | 5.5   | 4.6   | 4.7   |  |   |   | 18.3  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 2.6   | 0.0   | 3.8   | 5.5   | 4.6   | 4.7   |  |   |   | 18.3  | 0.0   | 0.0   |
| Prop In Lane                 | 0.07  |   | 0.38  | 1.00  |   | 0.12  |  |   |   | 0.21  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 819   | 0   | 644   | 147   | 987   | 1000  |  |   |   | 424   | 0   | 0   |
| V/C Ratio(X)                 | 0.63  | 0.00  | 0.66  | 0.72  | 0.20  | 0.20  |  |   |   | 0.81  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 819   | 0   | 644   | 225   | 987   | 1000  |  |   |   | 454   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.75  | 0.00  | 0.75  | 0.98  | 0.98  | 0.98  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.9   | 0.0   | 1.2   | 37.5  | 7.0   | 7.1   |  |   |   | 28.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 2.7   | 0.0   | 4.0   | 2.4   | 0.4   | 0.5   |  |   |   | 9.0   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.3   | 0.0   | 1.7   | 2.5   | 2.1   | 2.2   |  |   |   | 8.5   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 3.7   | 0.0   | 5.3   | 39.9  | 7.5   | 7.5   |  |   |   | 37.1  | 0.0   | 0.0   |
| LnGrp LOS                    | A   |   | A   | D   | A   | A   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 941   |   |   | 509   |   |  |   |   |   | 343   |   |
| Approach Delay, s/veh        |   | 4.4   |   |   | 14.2  |   |  |   |   |   | 37.1  |   |
| Approach LOS                 |   | A   |   |   | B   |   |  |   |   |   | D   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 11.8  | 44.9  |   | 28.3  |   | 56.7  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   | 3.5   |   | 5.5   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 11.5  | 33.5  |   | 26.5  |   | 49.5  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 7.5   | 5.8   |   | 20.3  |   | 6.7   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 3.9   |   | 0.5   |   | 3.9   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 13.4  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |





















HCM 2010 Signalized Intersection Summary  
 15: Grand Avenue & Valdez Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |    |  |  |    |  |  |    |  |  |    |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |  |   |   |  |   |   |   |   |   |
| Traffic Volume (veh/h)       | 33  | 807   | 5   | 5   | 442   | 23  | 3  | 2   | 4   | 78  | 0   | 59  |
| Future Volume (veh/h)        | 33  | 807   | 5   | 5   | 442   | 23  | 3  | 2   | 4   | 78  | 0   | 59  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 3  | 8   | 18  | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.84  | 0.97  |   | 0.86  | 0.90   |   | 0.87  | 0.89  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 33  | 807   | 5   | 5   | 442   | 20  | 3  | 2   | 1   | 78  | 0   | 20  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 491   | 1884  | 12  | 376   | 1789  | 81  | 262  | 163   | 72  | 367   | 8   | 77  |
| Arrive On Green              | 0.77  | 0.77  | 0.77  | 0.58  | 0.58  | 0.58  | 0.32   | 0.32  | 0.32  | 0.32  | 0.00  | 0.32  |
| Sat Flow, veh/h              | 795   | 3241  | 20  | 586   | 3078  | 139   | 611  | 503   | 223   | 897   | 23  | 236   |
| Grp Volume(v), veh/h         | 33  | 397   | 415   | 5   | 228   | 234   | 6  | 0   | 0   | 98  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 795   | 1593  | 1668  | 586   | 1593  | 1624  | 1338   | 0   | 0   | 1156  | 0   | 0   |
| Q Serve(g_s), s              | 1.2   | 7.2   | 7.2   | 0.4   | 5.9   | 6.0   | 0.0  | 0.0   | 0.0   | 4.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 7.2   | 7.2   | 7.2   | 7.6   | 5.9   | 6.0   | 0.2  | 0.0   | 0.0   | 5.2   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.01  | 1.00  |   | 0.09  | 0.50   |   | 0.17  | 0.80  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 491   | 926   | 970   | 376   | 926   | 944   | 498  | 0   | 0   | 451   | 0   | 0   |
| V/C Ratio(X)                 | 0.07  | 0.43  | 0.43  | 0.01  | 0.25  | 0.25  | 0.01   | 0.00  | 0.00  | 0.22  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 491   | 926   | 970   | 376   | 926   | 944   | 625  | 0   | 0   | 565   | 0   | 0   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.63  | 0.63  | 0.63  | 0.94  | 0.94  | 0.94  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 5.9   | 4.9   | 4.9   | 10.9  | 8.7   | 8.7   | 19.5   | 0.0   | 0.0   | 21.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 0.9   | 0.9   | 0.1   | 0.6   | 0.6   | 0.0  | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 3.3   | 3.4   | 0.1   | 2.7   | 2.8   | 0.1  | 0.0   | 0.0   | 1.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 6.0   | 5.8   | 5.7   | 10.9  | 9.3   | 9.3   | 19.5   | 0.0   | 0.0   | 21.2  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | B   | A   | A   | B  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 845   |   |   | 467   |   |  | 6   |   |   | 98  |   |
| Approach Delay, s/veh        |   | 5.8   |   |   | 9.3   |   |  | 19.5  |   |   | 21.2  |   |
| Approach LOS                 |   | A   |   |   | A   |   |  | B   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 53.4  |   | 31.6  |   | 53.4  |  | 31.6  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 40.5  |   | 35.5  |   | 40.5  |  | 35.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 9.2   |   | 7.2   |   | 9.6   |  | 2.2   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.8   |   | 0.4   |   | 6.8   |  | 0.5   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 8.1   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

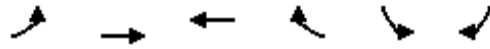
HCM 2010 Signalized Intersection Summary  
 16: Harrison Street & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |   |  |  |
| Traffic Volume (veh/h)       | 126   | 636   | 129   | 232   | 343   | 22  | 14   | 1038  | 694   | 2   | 394   | 97  |
| Future Volume (veh/h)        | 126   | 636   | 129   | 232   | 343   | 22  | 14   | 1038  | 694   | 2   | 394   | 97  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.76  | 1.00  |   | 0.81  | 0.96   |   | 0.91  | 0.99  |   | 0.88  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1676  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 126   | 636   | 114   | 232   | 343   | 18  | 14   | 1038  | 666   | 2   | 394   | 58  |
| Adj No. of Lanes             | 2   | 2   | 0   | 2   | 2   | 0   | 0  | 3   | 1   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 183   | 745   | 133   | 293   | 1036  | 54  | 46   | 2160  | 699   | 35  | 1887  | 265   |
| Arrive On Green              | 0.06  | 0.29  | 0.28  | 0.09  | 0.34  | 0.33  | 0.98   | 0.98  | 0.95  | 0.49  | 0.49  | 0.48  |
| Sat Flow, veh/h              | 3097  | 2560  | 457   | 3097  | 3039  | 158   | 25   | 4401  | 1290  | 3   | 3844  | 539   |
| Grp Volume(v), veh/h         | 126   | 395   | 355   | 232   | 178   | 183   | 393  | 659   | 666   | 169   | 141   | 144   |
| Grp Sat Flow(s),veh/h/ln     | 1549  | 1593  | 1424  | 1549  | 1593  | 1605  | 1649   | 1388  | 1290  | 1658  | 1388  | 1340  |
| Q Serve(g_s), s              | 4.4   | 25.7  | 26.0  | 8.1   | 9.1   | 9.3   | 0.0  | 0.9   | 52.4  | 0.0   | 6.3   | 6.8   |
| Cycle Q Clear(g_c), s        | 4.4   | 25.7  | 26.0  | 8.1   | 9.1   | 9.3   | 0.9  | 0.9   | 52.4  | 6.3   | 6.3   | 6.8   |
| Prop In Lane                 | 1.00  |   | 0.32  | 1.00  |   | 0.10  | 0.04   |   | 1.00  | 0.01  |   | 0.40  |
| Lane Grp Cap(c), veh/h       | 183   | 463   | 414   | 293   | 543   | 547   | 843  | 1363  | 699   | 847   | 682   | 658   |
| V/C Ratio(X)                 | 0.69  | 0.85  | 0.86  | 0.79  | 0.33  | 0.33  | 0.47   | 0.48  | 0.95  | 0.20  | 0.21  | 0.22  |
| Avail Cap(c_a), veh/h        | 310   | 463   | 414   | 338   | 543   | 547   | 843  | 1363  | 699   | 847   | 682   | 658   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.91  | 0.91  | 0.91  | 0.99  | 0.99  | 0.99  | 0.92   | 0.92  | 0.92  | 0.91  | 0.91  | 0.91  |
| Uniform Delay (d), s/veh     | 50.8  | 36.8  | 37.1  | 48.7  | 26.9  | 27.0  | 0.5  | 0.5   | 4.2   | 15.9  | 15.9  | 16.2  |
| Incr Delay (d2), s/veh       | 4.2   | 16.3  | 18.6  | 10.6  | 1.6   | 1.6   | 0.4  | 0.2   | 21.8  | 0.1   | 0.1   | 0.2   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.0   | 13.4  | 12.3  | 3.9   | 4.3   | 4.4   | 0.3  | 0.2   | 24.5  | 2.9   | 2.4   | 2.5   |
| LnGrp Delay(d),s/veh         | 54.9  | 53.1  | 55.7  | 59.3  | 28.5  | 28.6  | 0.9  | 0.8   | 26.0  | 16.0  | 16.0  | 16.3  |
| LnGrp LOS                    | D   | D   | E   | E   | C   | C   | A  | A   | C   | B   | B   | B   |
| Approach Vol, veh/h          |   | 876   |   |   | 593   |   |  | 1718  |   |   | 454   |   |
| Approach Delay, s/veh        |   | 54.4  |   |   | 40.6  |   |  | 10.6  |   |   | 16.1  |   |
| Approach LOS                 |   | D   |   |   | D   |   |  | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 58.0  | 10.5  | 41.5  |   | 58.0  | 16.0   | 36.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.6   | 4.0   | 5.6   |   | 5.6   | 5.6  | * 5.6   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 52.4  | 11.0  | 31.4  |   | 52.4  | 12.0   | * 30  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 54.4  | 6.4   | 11.3  |   | 8.8   | 10.1   | 28.0  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 0.2   | 3.8   |   | 26.3  | 0.3  | 1.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 26.7  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 17: Grand Avenue & Bay Place


















2100 Telegraph  
 Existing Conditions PM



| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Lane Configurations          |      |      |      |      |      |      |   |      |
| Traffic Volume (veh/h)       | 162  | 1259 | 463  | 229  | 294  | 85   |   |      |
| Future Volume (veh/h)        | 162  | 1259 | 463  | 229  | 294  | 85   |   |      |
| Number                       | 7    | 4    | 8    | 18   | 5    | 12   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          | 0.97 |      |      | 0.90 | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1676 | 1676 | 1710 |   |      |
| Adj Flow Rate, veh/h         | 162  | 1259 | 463  | 155  | 343  | 0    |   |      |
| Adj No. of Lanes             | 1    | 2    | 2    | 1    | 2    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 0    |   |      |
| Cap, veh/h                   | 591  | 2441 | 2441 | 985  | 462  | 202  |   |      |
| Arrive On Green              | 0.77 | 0.77 | 0.77 | 0.77 | 0.14 | 0.00 |   |      |
| Sat Flow, veh/h              | 704  | 3269 | 3269 | 1286 | 3193 | 1454 |   |      |
| Grp Volume(v), veh/h         | 162  | 1259 | 463  | 155  | 343  | 0    |   |      |
| Grp Sat Flow(s),veh/h/ln     | 704  | 1593 | 1593 | 1286 | 1597 | 1454 |   |      |
| Q Serve(g_s), s              | 7.4  | 13.7 | 3.6  | 2.9  | 9.3  | 0.0  |   |      |
| Cycle Q Clear(g_c), s        | 10.9 | 13.7 | 3.6  | 2.9  | 9.3  | 0.0  |   |      |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 591  | 2441 | 2441 | 985  | 462  | 202  |   |      |
| V/C Ratio(X)                 | 0.27 | 0.52 | 0.19 | 0.16 | 0.74 | 0.00 |   |      |
| Avail Cap(c_a), veh/h        | 591  | 2441 | 2441 | 985  | 834  | 371  |   |      |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.36 | 0.36 | 0.97 | 0.97 | 1.00 | 0.00 |   |      |
| Uniform Delay (d), s/veh     | 4.4  | 4.1  | 2.9  | 2.8  | 36.9 | 0.0  |   |      |
| Incr Delay (d2), s/veh       | 0.4  | 0.3  | 0.2  | 0.3  | 0.9  | 0.0  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 1.5  | 6.0  | 1.6  | 1.1  | 4.2  | 0.0  |   |      |
| LnGrp Delay(d),s/veh         | 4.8  | 4.3  | 3.0  | 3.1  | 37.8 | 0.0  |   |      |
| LnGrp LOS                    | A    | A    | A    | A    | D    |      |   |      |
| Approach Vol, veh/h          |      | 1421 | 618  |      | 343  |      |   |      |
| Approach Delay, s/veh        |      | 4.4  | 3.1  |      | 37.8 |      |   |      |
| Approach LOS                 |      | A    | A    |      | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 |      | 2    |      | 4    |      |      |   | 8    |
| Phs Duration (G+Y+Rc), s     |      | 17.0 |      | 73.0 |      |      |   | 73.0 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      |      |   | 4.5  |
| Max Green Setting (Gmax), s  |      | 23.0 |      | 58.0 |      |      |   | 58.0 |
| Max Q Clear Time (g_c+I1), s |      | 11.3 |      | 15.7 |      |      |   | 5.6  |
| Green Ext Time (p_c), s      |      | 1.3  |      | 17.6 |      |      |   | 18.8 |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 8.9  |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | A    |      |      |      |   |      |
| <b>Notes</b>                 |      |      |      |      |      |      |   |      |



















HCM 2010 Signalized Intersection Summary  
 18: Bellevue Avenue/Park View Terrace & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 49  | 1437  | 52  | 23  | 656   | 20  | 0  | 0   | 0   | 29  | 0   | 29  |
| Future Volume (veh/h)        | 49  | 1437  | 52  | 23  | 656   | 20  | 0  | 0   | 0   | 29  | 0   | 29  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  |  |   |   | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.97  |   | 0.85  | 1.00  |   | 0.79  |  |   |   | 1.00  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 49  | 1437  | 50  | 23  | 656   | 18  |  |   |   | 29  | 0   | 6   |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 443   | 2308  | 80  | 229   | 2324  | 64  |  |   |   | 238   | 0   | 49  |
| Arrive On Green              | 0.74  | 0.74  | 0.74  | 0.24  | 0.24  | 0.24  |  |   |   | 0.19  | 0.00  | 0.18  |
| Sat Flow, veh/h              | 662   | 3119  | 108   | 316   | 3141  | 86  |  |   |   | 1270  | 0   | 263   |
| Grp Volume(v), veh/h         | 49  | 731   | 756   | 23  | 332   | 342   |  |   |   | 35  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 662   | 1593  | 1634  | 316   | 1593  | 1634  |  |   |   | 1533  | 0   | 0   |
| Q Serve(g_s), s              | 3.8   | 24.3  | 24.6  | 6.8   | 18.6  | 18.7  |  |   |   | 2.1   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 22.5  | 24.3  | 24.6  | 31.4  | 18.6  | 18.7  |  |   |   | 2.1   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.07  | 1.00  |   | 0.05  |  |   |   | 0.83  |   | 0.17  |
| Lane Grp Cap(c), veh/h       | 443   | 1179  | 1210  | 229   | 1179  | 1209  |  |   |   | 287   | 0   | 0   |
| V/C Ratio(X)                 | 0.11  | 0.62  | 0.62  | 0.10  | 0.28  | 0.28  |  |   |   | 0.12  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 443   | 1179  | 1210  | 229   | 1179  | 1209  |  |   |   | 404   | 0   | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 0.33  | 0.33  | 0.33  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.80  | 0.80  | 0.80  | 0.97  | 0.97  | 0.97  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 11.0  | 6.9   | 6.9   | 33.1  | 17.8  | 17.9  |  |   |   | 37.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 2.0   | 2.0   | 0.8   | 0.6   | 0.6   |  |   |   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.7   | 11.2  | 11.6  | 0.6   | 8.4   | 8.7   |  |   |   | 0.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 11.4  | 8.8   | 8.9   | 34.0  | 18.4  | 18.4  |  |   |   | 37.3  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | A   | A   | C   | B   | B   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 1536  |   |   | 697   |   |  |   |   |   | 35  |   |
| Approach Delay, s/veh        |   | 8.9   |   |   | 18.9  |   |  |   |   |   | 37.3  |   |
| Approach LOS                 |   | A   |   |   | B   |   |  |   |   |   | D   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 24.6  |   | 85.4  |   |   |  | 85.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   |   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 28.0  |   | 72.5  |   |   |  | 72.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.1   |   | 33.4  |   |   |  | 26.6  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   |   | 4.0   |   |   |  | 4.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 12.4  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |



















HCM 2010 Signalized Intersection Summary  
 19: Perkins Street & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 75  | 1283  | 33  | 34  | 571   | 56  | 37   | 5   | 36  | 94  | 13  | 67  |
| Future Volume (veh/h)        | 75  | 1283  | 33  | 34  | 571   | 56  | 37   | 5   | 36  | 94  | 13  | 67  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.94  |   | 0.80  | 1.00  |   | 0.84  | 0.94   |   | 0.90  | 0.92  |   | 0.91  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 75  | 1283  | 32  | 34  | 571   | 51  | 37   | 5   | 18  | 94  | 13  | 45  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 524   | 2131  | 53  | 182   | 1963  | 175   | 233  | 37  | 93  | 240   | 38  | 95  |
| Arrive On Green              | 0.22  | 0.22  | 0.22  | 1.00  | 1.00  | 1.00  | 0.25   | 0.25  | 0.25  | 0.25  | 0.25  | 0.25  |
| Sat Flow, veh/h              | 678   | 3153  | 79  | 374   | 2906  | 258   | 717  | 145   | 369   | 744   | 151   | 376   |
| Grp Volume(v), veh/h         | 75  | 647   | 668   | 34  | 312   | 310   | 60   | 0   | 0   | 152   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 678   | 1593  | 1639  | 374   | 1593  | 1571  | 1231   | 0   | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 9.8   | 40.1  | 40.2  | 6.2   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 6.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 9.8   | 40.1  | 40.2  | 46.5  | 0.0   | 0.0   | 3.9  | 0.0   | 0.0   | 10.5  | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.05  | 1.00  |   | 0.16  | 0.62   |   | 0.30  | 0.62  |   | 0.30  |
| Lane Grp Cap(c), veh/h       | 524   | 1076  | 1108  | 182   | 1076  | 1062  | 363  | 0   | 0   | 373   | 0   | 0   |
| V/C Ratio(X)                 | 0.14  | 0.60  | 0.60  | 0.19  | 0.29  | 0.29  | 0.17   | 0.00  | 0.00  | 0.41  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 524   | 1076  | 1108  | 182   | 1076  | 1062  | 410  | 0   | 0   | 421   | 0   | 0   |
| HCM Platoon Ratio            | 0.33  | 0.33  | 0.33  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.71  | 0.71  | 0.71  | 0.94  | 0.94  | 0.94  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 17.7  | 29.4  | 29.5  | 12.6  | 0.0   | 0.0   | 32.3   | 0.0   | 0.0   | 34.6  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 1.8   | 1.7   | 2.1   | 0.6   | 0.7   | 0.1  | 0.0   | 0.0   | 0.3   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.9   | 18.2  | 18.8  | 0.8   | 0.2   | 0.2   | 1.4  | 0.0   | 0.0   | 3.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 18.1  | 31.2  | 31.2  | 14.7  | 0.6   | 0.7   | 32.3   | 0.0   | 0.0   | 34.8  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | C   | C   | B   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 1390  |   |   | 656   |   |  | 60  |   |   | 152   |   |
| Approach Delay, s/veh        |   | 30.5  |   |   | 1.4   |   |  | 32.3  |   |   | 34.8  |   |
| Approach LOS                 |   | C   |   |   | A   |   |  | C   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 31.7  |   | 78.3  |   | 31.7  |  | 78.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 31.5  |   | 69.5  |   | 31.5  |  | 69.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 12.5  |   | 48.5  |   | 5.9   |  | 42.2  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.3   |   | 3.6   |   | 0.3   |  | 3.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 22.4  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 20: Staten Avenue & Grand Avenue


















2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 36  | 1310  | 11  | 26  | 620   | 49  | 24   | 4   | 36  | 24  | 7   | 33  |
| Future Volume (veh/h)        | 36  | 1310  | 11  | 26  | 620   | 49  | 24   | 4   | 36  | 24  | 7   | 33  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.80  | 1.00  |   | 0.83  | 0.95   |   | 0.95  | 0.96  |   | 0.95  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 36  | 1310  | 11  | 26  | 620   | 44  | 24   | 4   | 21  | 24  | 7   | 10  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 464   | 1967  | 17  | 230   | 1810  | 128   | 238  | 48  | 178   | 284   | 83  | 102   |
| Arrive On Green              | 0.81  | 0.81  | 0.80  | 1.00  | 1.00  | 1.00  | 0.32   | 0.32  | 0.31  | 0.32  | 0.32  | 0.31  |
| Sat Flow, veh/h              | 654   | 3229  | 27  | 372   | 2972  | 210   | 594  | 151   | 559   | 730   | 262   | 320   |
| Grp Volume(v), veh/h         | 36  | 646   | 675   | 26  | 331   | 333   | 49   | 0   | 0   | 41  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 654   | 1593  | 1663  | 372   | 1593  | 1589  | 1304   | 0   | 0   | 1312  | 0   | 0   |
| Q Serve(g_s), s              | 1.2   | 18.4  | 18.4  | 2.4   | 0.0   | 0.0   | 0.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 1.2   | 18.4  | 18.4  | 20.8  | 0.0   | 0.0   | 2.6  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.02  | 1.00  |   | 0.13  | 0.49   |   | 0.43  | 0.59  |   | 0.24  |
| Lane Grp Cap(c), veh/h       | 464   | 970   | 1013  | 230   | 970   | 968   | 464  | 0   | 0   | 469   | 0   | 0   |
| V/C Ratio(X)                 | 0.08  | 0.67  | 0.67  | 0.11  | 0.34  | 0.34  | 0.11   | 0.00  | 0.00  | 0.09  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 464   | 970   | 1013  | 230   | 970   | 968   | 464  | 0   | 0   | 469   | 0   | 0   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.76  | 0.76  | 0.76  | 0.90  | 0.90  | 0.90  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 4.2   | 5.8   | 5.8   | 2.9   | 0.0   | 0.0   | 26.5   | 0.0   | 0.0   | 26.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 2.8   | 2.7   | 0.9   | 0.9   | 0.9   | 0.5  | 0.0   | 0.0   | 0.4   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 8.5   | 8.9   | 0.3   | 0.2   | 0.2   | 1.1  | 0.0   | 0.0   | 0.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 4.5   | 8.6   | 8.5   | 3.8   | 0.9   | 0.9   | 27.0   | 0.0   | 0.0   | 26.7  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 1357  |   |   | 690   |   |  | 49  |   |   |   | 41  |
| Approach Delay, s/veh        |   | 8.4   |   |   | 1.0   |   |  | 27.0  |   |   |   | 26.7  |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   |   | C   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 39.0  |   | 71.0  |   | 39.0  |  | 71.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 34.5  |   | 66.5  |   | 34.5  |  | 66.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.0   |   | 22.8  |   | 4.6   |  | 20.4  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.5   |   | 24.3  |   | 0.5   |  | 25.0  |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 6.8   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |














HCM 2010 Signalized Intersection Summary  
 21: Grand Avenue & Euclid Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |   |  |
| Traffic Volume (veh/h)       | 32  | 1396  | 0   | 3   | 681   | 141   | 0  | 0   | 0   | 83  | 0   | 36  |
| Future Volume (veh/h)        | 32  | 1396  | 0   | 3   | 681   | 141   | 0  | 0   | 0   | 83  | 0   | 36  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 0.98  |   | 0.85  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 1710  | 1676  | 1710  | 0  | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 32  | 1396  | 0   | 3   | 681   | 129   | 0  | 0   | 0   | 83  | 0   | 0   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 2   | 2   | 2   | 0  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   | 538   | 2370  | 0   | 34  | 1358  | 256   | 0  | 307   | 0   | 298   | 0   | 0   |
| Arrive On Green              | 0.33  | 1.00  | 0.00  | 0.53  | 0.54  | 0.53  | 0.00   | 0.00  | 0.00  | 0.18  | 0.00  | 0.00  |
| Sat Flow, veh/h              | 1597  | 3269  | 0   | 2   | 2531  | 477   | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Grp Volume(v), veh/h         | 32  | 1396  | 0   | 450   | 0   | 363   | 0  | 0   | 0   | 83  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 0   | 1669  | 0   | 1341  | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 19.0  | 0.0  | 0.0   | 0.0   | 6.3   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 18.8  | 0.0   | 19.0  | 0.0  | 0.0   | 0.0   | 6.3   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.01  |   | 0.36  | 0.00   |   | 0.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 538   | 2370  | 0   | 920   | 0   | 719   | 0  | 307   | 0   | 298   | 0   | 0   |
| V/C Ratio(X)                 | 0.06  | 0.59  | 0.00  | 0.49  | 0.00  | 0.50  | 0.00   | 0.00  | 0.00  | 0.28  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 538   | 2370  | 0   | 920   | 0   | 719   | 0  | 457   | 0   | 412   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.67  | 0.67  | 0.00  | 0.94  | 0.00  | 0.94  | 0.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 11.1  | 0.0   | 0.0   | 16.2  | 0.0   | 16.3  | 0.0  | 0.0   | 0.0   | 39.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.7   | 0.0   | 1.7   | 0.0   | 2.4   | 0.0  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.2   | 0.0   | 9.2   | 0.0   | 7.4   | 0.0  | 0.0   | 0.0   | 2.2   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 11.1  | 0.7   | 0.0   | 17.9  | 0.0   | 18.6  | 0.0  | 0.0   | 0.0   | 39.4  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | A   |   | B   |   | B   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 1428  |   |   | 813   |   |  | 0   |   |   |   | 83  |
| Approach Delay, s/veh        |   | 1.0   |   |   | 18.2  |   |  | 0.0   |   |   |   | 39.4  |
| Approach LOS                 |   | A   |   |   | B   |   |  |   |   |   |   | D   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 24.2  | 22.8  | 63.0  |   | 24.2  |  | 85.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   | 4.5   | * 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.5  | 9.0   | * 59  |   | 29.5  |  | 71.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 8.3   | 2.0   | 21.0  |   | 0.0   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 2.0   | 1.1   |   | 0.0   |  | 2.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 8.4   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |













HCM 2010 Signalized Intersection Summary  
 22: El Embarcadero & Grand Avenue

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |   |      |
|------------------------------|---|---|---|---|---|---|---|------|
| Movement                     | EBT   | EBR   | WBL   | WBT   | NBL   | NBR   |   |      |
| Lane Configurations          |  |   |  |  |  |  |   |      |
| Traffic Volume (veh/h)       | 980   | 497   | 179   | 609   | 217   | 92  |   |      |
| Future Volume (veh/h)        | 980   | 497   | 179   | 609   | 217   | 92  |   |      |
| Number                       | 2   | 12  | 1   | 6   | 3   | 18  |   |      |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |      |
| Ped-Bike Adj(A_pbT)          |   | 0.87  | 1.00  |   | 1.00  | 1.00  |   |      |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Adj Sat Flow, veh/h/ln       | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  |   |      |
| Adj Flow Rate, veh/h         | 980   | 454   | 179   | 609   | 217   | 20  |   |      |
| Adj No. of Lanes             | 2   | 0   | 1   | 2   | 1   | 1   |   |      |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |      |
| Cap, veh/h                   | 1202  | 538   | 213   | 2423  | 262   | 234   |   |      |
| Arrive On Green              | 0.59  | 0.58  | 0.27  | 1.00  | 0.16  | 0.16  |   |      |
| Sat Flow, veh/h              | 2123  | 913   | 1597  | 3269  | 1597  | 1425  |   |      |
| Grp Volume(v), veh/h         | 758   | 676   | 179   | 609   | 217   | 20  |   |      |
| Grp Sat Flow(s),veh/h/ln     | 1593  | 1359  | 1597  | 1593  | 1597  | 1425  |   |      |
| Q Serve(g_s), s              | 39.5  | 43.3  | 11.2  | 0.0   | 13.9  | 1.3   |   |      |
| Cycle Q Clear(g_c), s        | 39.5  | 43.3  | 11.2  | 0.0   | 13.9  | 1.3   |   |      |
| Prop In Lane                 |   | 0.67  | 1.00  |   | 1.00  | 1.00  |   |      |
| Lane Grp Cap(c), veh/h       | 939   | 801   | 213   | 2423  | 262   | 234   |   |      |
| V/C Ratio(X)                 | 0.81  | 0.84  | 0.84  | 0.25  | 0.83  | 0.09  |   |      |
| Avail Cap(c_a), veh/h        | 939   | 801   | 301   | 2423  | 603   | 538   |   |      |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  | 1.00  |   |      |
| Upstream Filter(I)           | 0.78  | 0.78  | 0.95  | 0.95  | 1.00  | 1.00  |   |      |
| Uniform Delay (d), s/veh     | 17.0  | 18.2  | 37.8  | 0.0   | 42.9  | 37.6  |   |      |
| Incr Delay (d2), s/veh       | 5.9   | 8.4   | 13.1  | 0.2   | 2.6   | 0.1   |   |      |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |      |
| %ile BackOfQ(50%),veh/ln     | 18.8  | 18.1  | 5.6   | 0.1   | 6.3   | 0.5   |   |      |
| LnGrp Delay(d),s/veh         | 22.9  | 26.6  | 50.9  | 0.2   | 45.5  | 37.6  |   |      |
| LnGrp LOS                    | C   | C   | D   | A   | D   | D   |   |      |
| Approach Vol, veh/h          | 1434  |   |   | 788   | 237   |   |   |      |
| Approach Delay, s/veh        | 24.7  |   |   | 11.7  | 44.8  |   |   |      |
| Approach LOS                 | C   |   |   | B   | D   |   |   |      |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8    |
| Assigned Phs                 | 1   | 2   |   |   |   | 6   |   | 8    |
| Phs Duration (G+Y+Rc), s     | 18.1  | 66.5  |   |   |   | 84.6  |   | 21.4 |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   |   |   | 5.5   |   | 4.5  |
| Max Green Setting (Gmax), s  | 19.5  | 32.5  |   |   |   | 56.5  |   | 39.5 |
| Max Q Clear Time (g_c+I1), s | 13.2  | 45.3  |   |   |   | 2.0   |   | 15.9 |
| Green Ext Time (p_c), s      | 0.5   | 0.0   |   |   |   | 20.7  |   | 1.0  |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |      |
| HCM 2010 Ctrl Delay          |   |   | 22.5  |   |   |   |   |      |
| HCM 2010 LOS                 |   |   | C   |   |   |   |   |      |

HCM 2010 Signalized Intersection Summary  
 23: Grand Avenue & MacArthur Boulevard

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   | ↑↑↑   |   |   |   |   |  | ↑↑  | ↑   | ↑   | ↑↑  |   |
| Traffic Volume (veh/h)       | 284   | 763   | 163   | 0   | 0   | 0   | 0  | 469   | 586   | 253   | 616   | 0   |
| Future Volume (veh/h)        | 284   | 763   | 163   | 0   | 0   | 0   | 0  | 469   | 586   | 253   | 616   | 0   |
| Number                       | 7   | 4   | 14  |   |   |   | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.80  |   |   |   | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 0  | 1676  | 1676  | 1676  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 284   | 763   | 143   |   |   |   | 0  | 469   | 0   | 253   | 616   | 0   |
| Adj No. of Lanes             | 0   | 3   | 0   |   |   |   | 0  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 327   | 945   | 180   |   |   |   | 0  | 1262  | 565   | 275   | 1932  | 0   |
| Arrive On Green              | 0.32  | 0.32  | 0.31  |   |   |   | 0.00   | 0.40  | 0.00  | 0.35  | 1.00  | 0.00  |
| Sat Flow, veh/h              | 1027  | 2970  | 566   |   |   |   | 0  | 3269  | 1425  | 1597  | 3269  | 0   |
| Grp Volume(v), veh/h         | 449   | 384   | 357   |   |   |   | 0  | 469   | 0   | 253   | 616   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1625  | 1526  | 1412  |   |   |   | 0  | 1593  | 1425  | 1597  | 1593  | 0   |
| Q Serve(g_s), s              | 27.6  | 24.3  | 24.5  |   |   |   | 0.0  | 11.0  | 0.0   | 16.1  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 27.6  | 24.3  | 24.5  |   |   |   | 0.0  | 11.0  | 0.0   | 16.1  | 0.0   | 0.0   |
| Prop In Lane                 | 0.63  |   | 0.40  |   |   |   | 0.00   |   | 1.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 517   | 485   | 449   |   |   |   | 0  | 1262  | 565   | 275   | 1932  | 0   |
| V/C Ratio(X)                 | 0.87  | 0.79  | 0.79  |   |   |   | 0.00   | 0.37  | 0.00  | 0.92  | 0.32  | 0.00  |
| Avail Cap(c_a), veh/h        | 567   | 533   | 493   |   |   |   | 0  | 1262  | 565   | 407   | 1932  | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 1.00  | 1.00  |   |   |   | 0.00   | 0.10  | 0.00  | 0.61  | 0.61  | 0.00  |
| Uniform Delay (d), s/veh     | 34.1  | 32.9  | 33.2  |   |   |   | 0.0  | 22.7  | 0.0   | 34.0  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 11.9  | 6.4   | 7.1   |   |   |   | 0.0  | 0.1   | 0.0   | 10.6  | 0.3   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 14.1  | 11.1  | 10.4  |   |   |   | 0.0  | 4.8   | 0.0   | 7.8   | 0.1   | 0.0   |
| LnGrp Delay(d),s/veh         | 46.0  | 39.3  | 40.3  |   |   |   | 0.0  | 22.7  | 0.0   | 44.6  | 0.3   | 0.0   |
| LnGrp LOS                    | D   | D   | D   |   |   |   |  | C   |   | D   | A   |   |
| Approach Vol, veh/h          |   | 1190  |   |   |   |   |  | 469   |   |   | 869   |   |
| Approach Delay, s/veh        |   | 42.1  |   |   |   |   |  | 22.7  |   |   | 13.2  |   |
| Approach LOS                 |   | D   |   |   |   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 22.3  | 46.0  |   | 37.7  |   | 68.3  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 3.5   | 4.0   |   | 5.0   |   | 4.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 27.5  | 30.0  |   | 36.0  |   | 61.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 18.1  | 13.0  |   | 29.6  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.7   | 5.1   |   | 3.1   |   | 6.4   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 28.6  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 2.9

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      | ↕    | ↕    | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 30   | 10   | 159  | 32   | 540  | 0    | 0    | 437  | 39   |
| Future Vol, veh/h        | 0    | 0    | 0    | 30   | 10   | 159  | 32   | 540  | 0    | 0    | 437  | 39   |
| Conflicting Peds, #/hr   | 0    | 0    | 32   | 32   | 0    | 0    | 99   | 0    | 130  | 130  | 0    | 99   |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | 100  | -    | 0    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 0    | 30   | 10   | 159  | 32   | 540  | 0    | 0    | 437  | 39   |

| Major/Minor          | Minor1 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 1093   | 1179  | 540   | 575    | 0 | - | -      | - | 0 |
| Stage 1              | 604    | 604   | -     | -      | - | - | -      | - | - |
| Stage 2              | 489    | 575   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | 4.12   | - | - | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 2.218  | - | - | -      | - | - |
| Pot Cap-1 Maneuver   | 237    | 190   | 542   | 998    | - | 0 | 0      | - | - |
| Stage 1              | 546    | 488   | -     | -      | - | 0 | 0      | - | - |
| Stage 2              | 616    | 503   | -     | -      | - | 0 | 0      | - | - |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 222    | 0     | 542   | 968    | - | - | -      | - | - |
| Mov Cap-2 Maneuver   | 222    | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 528    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 597    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | WB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 16.5 | 0.5 | 0  |
| HCM LOS              | C    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBTWBLn1 | WBLn2      | SBT | SBR |
|-----------------------|-------|----------|------------|-----|-----|
| Capacity (veh/h)      | 968   | -        | 222 542    | -   | -   |
| HCM Lane V/C Ratio    | 0.033 | -        | 0.18 0.293 | -   | -   |
| HCM Control Delay (s) | 8.8   | -        | 24.7 14.4  | -   | -   |
| HCM Lane LOS          | A     | -        | C B        | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -        | 0.6 1.2    | -   | -   |

**Intersection**

Int Delay, s/veh 1.6

| Movement                 | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      | ↔    |      |      | ↔    |
| Traffic Vol, veh/h       | 0    | 0    | 165  | 19   | 0    | 37   |
| Future Vol, veh/h        | 0    | 0    | 165  | 19   | 0    | 37   |
| Conflicting Peds, #/hr   | 32   | 0    | 0    | 32   | 22   | 3    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | 0    |
| Veh in Median Storage, # | -    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 165  | 19   | 0    | 37   |

**Major/Minor**

|                      | Major2 | Minor2 |
|----------------------|--------|--------|
| Conflicting Flow All | -      | 0      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Critical Hdwy        | -      | -      |
| Critical Hdwy Stg 1  | -      | -      |
| Critical Hdwy Stg 2  | -      | -      |
| Follow-up Hdwy       | -      | -      |
| Pot Cap-1 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Platoon blocked, %   | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |

**Approach**


















|                      | WB | SB  |
|----------------------|----|-----|
| HCM Control Delay, s | 0  | 9.7 |
| HCM LOS              |    | A   |

**Minor Lane/Major Mvmt**

|                       | WBT | WBR | SBLn1 |
|-----------------------|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | 805   |
| HCM Lane V/C Ratio    | -   | -   | 0.046 |
| HCM Control Delay (s) | -   | -   | 9.7   |
| HCM Lane LOS          | -   | -   | A     |
| HCM 95th %tile Q(veh) | -   | -   | 0.1   |

HCM 2010 Signalized Intersection Summary  
 26: Broadway & 22nd Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 19  | 122   | 452   | 35   | 591   | 0   | 0   | 473   | 33  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 19  | 122   | 452   | 35   | 591   | 0   | 0   | 473   | 33  |
| Number                       |   |   |   | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.86  | 0.93   |   | 1.00  | 1.00  |   | 0.83  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1676  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 19  | 122   | 308   | 35   | 591   | 0   | 0   | 473   | 29  |
| Adj No. of Lanes             |   |   |   | 0   | 1   | 2   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 51  | 328   | 492   | 125  | 1944  | 0   | 0   | 2041  | 124   |
| Arrive On Green              |   |   |   | 0.23  | 0.23  | 0.23  | 0.68   | 0.68  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 224   | 1441  | 2162  | 116  | 2942  | 0   | 0   | 3092  | 183   |
| Grp Volume(v), veh/h         |   |   |   | 141   | 0   | 308   | 324  | 302   | 0   | 0   | 249   | 253   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1665  | 0   | 1081  | 1532   | 1449  | 0   | 0   | 1593  | 1599  |
| Q Serve(g_s), s              |   |   |   | 6.1   | 0.0   | 10.9  | 0.0  | 7.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 6.1   | 0.0   | 10.9  | 6.6  | 7.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.13  |   | 1.00  | 0.11   |   | 0.00  | 0.00  |   | 0.11  |
| Lane Grp Cap(c), veh/h       |   |   |   | 379   | 0   | 492   | 1086   | 983   | 0   | 0   | 1081  | 1085  |
| V/C Ratio(X)                 |   |   |   | 0.37  | 0.00  | 0.63  | 0.30   | 0.31  | 0.00  | 0.00  | 0.23  | 0.23  |
| Avail Cap(c_a), veh/h        |   |   |   | 549   | 0   | 712   | 1086   | 983   | 0   | 0   | 1081  | 1085  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.97   | 0.97  | 0.00  | 0.00  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     |   |   |   | 27.7  | 0.0   | 29.6  | 5.4  | 5.6   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.5   | 0.7  | 0.8   | 0.0   | 0.0   | 0.5   | 0.5   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 2.8   | 0.0   | 3.3   | 3.2  | 3.1   | 0.0   | 0.0   | 0.1   | 0.1   |
| LnGrp Delay(d),s/veh         |   |   |   | 27.9  | 0.0   | 30.1  | 6.1  | 6.3   | 0.0   | 0.0   | 0.5   | 0.5   |
| LnGrp LOS                    |   |   |   | C   |   | C   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 449   |   |  | 626   |   |   | 502   |   |
| Approach Delay, s/veh        |   |   |   |   | 29.4  |   |  | 6.2   |   |   | 0.5   |   |
| Approach LOS                 |   |   |   |   | C   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 61.7  |   | 23.3  |   | 61.7  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 48.0  |   | 27.5  |   | 48.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 9.2   |   | 12.9  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.7   |   | 2.1   |   | 5.7   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.0  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 2.1

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | 4T   |      |      |      |      |      | T    |      | T    | T    |      |
| Traffic Vol, veh/h       | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 434  | 21   | 46   | 425  | 0    |
| Future Vol, veh/h        | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 434  | 21   | 46   | 425  | 0    |
| Conflicting Peds, #/hr   | 23   | 0    | 33   | 33   | 0    | 23   | 101  | 0    | 182  | 182  | 0    | 101  |
| Sign Control             | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | 120  | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | -    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 434  | 21   | 46   | 425  | 0    |




















| Major/Minor          | Minor2 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 985    | 1154  | 458   | -      | 0 | 0 | 637    | 0 | 0 |
| Stage 1              | 517    | 517   | -     | -      | - | - | -      | - | - |
| Stage 2              | 468    | 637   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | -      | - | - | 4.12   | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | -      | - | - | 2.218  | - | - |
| Pot Cap-1 Maneuver   | 275    | 197   | 603   | 0      | - | - | 947    | - | 0 |
| Stage 1              | 598    | 534   | -     | 0      | - | - | -      | - | 0 |
| Stage 2              | 630    | 471   | -     | 0      | - | - | -      | - | 0 |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 261    | 0     | 584   | -      | - | - | 926    | - | - |
| Mov Cap-2 Maneuver   | 261    | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 568    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 630    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | EB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 17.7 | 0  | 0.9 |
| HCM LOS              | C    |    |     |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL  | SBT |
|-----------------------|-----|-----|-------|-------|------|-----|
| Capacity (veh/h)      | -   | -   | 261   | 584   | 926  | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.211 | 0.074 | 0.05 | -   |
| HCM Control Delay (s) | -   | -   | 22.4  | 11.7  | 9.1  | -   |
| HCM Lane LOS          | -   | -   | C     | B     | A    | -   |
| HCM 95th %tile Q(veh) | -   | -   | 0.8   | 0.2   | 0.2  | -   |

HCM 2010 Signalized Intersection Summary  
 28: Broadway & 21st Street

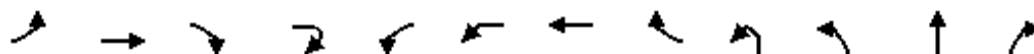
2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |  |   |  |  |
| Traffic Volume (veh/h)       | 27  | 58  | 38  | 30  | 0   | 90  | 0  | 490   | 28  | 42  | 453   | 0   |
| Future Volume (veh/h)        | 27  | 58  | 38  | 30  | 0   | 90  | 0  | 490   | 28  | 42  | 453   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.89  |   | 0.86  | 0.90  |   | 0.86  | 1.00   |   | 0.76  | 0.91  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 0  | 1676  | 1710  | 1710  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 27  | 58  | 12  | 30  | 0   | 29  | 0  | 490   | 22  | 42  | 453   | 0   |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 446   | 392   | 81  | 233   | 20  | 169   | 0  | 1791  | 80  | 162   | 1595  | 0   |
| Arrive On Green              | 0.30  | 0.30  | 0.28  | 0.30  | 0.00  | 0.28  | 0.00   | 1.00  | 1.00  | 0.59  | 0.59  | 0.00  |
| Sat Flow, veh/h              | 1104  | 1307  | 270   | 517   | 66  | 564   | 0  | 3142  | 137   | 174   | 2799  | 0   |
| Grp Volume(v), veh/h         | 27  | 0   | 70  | 59  | 0   | 0   | 0  | 254   | 258   | 253   | 242   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1104  | 0   | 1577  | 1148  | 0   | 0   | 0  | 1593  | 1603  | 1448  | 1449  | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 2.3   | 0.3   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 5.8   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.9   | 0.0   | 2.3   | 2.6   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 5.2   | 5.8   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.17  | 0.51  |   | 0.49  | 0.00   |   | 0.09  | 0.17  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 446   | 0   | 473   | 422   | 0   | 0   | 0  | 933   | 938   | 908   | 849   | 0   |
| V/C Ratio(X)                 | 0.06  | 0.00  | 0.15  | 0.14  | 0.00  | 0.00  | 0.00   | 0.27  | 0.28  | 0.28  | 0.29  | 0.00  |
| Avail Cap(c_a), veh/h        | 477   | 0   | 518   | 455   | 0   | 0   | 0  | 933   | 938   | 908   | 849   | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 1.00  | 0.92  | 0.00  | 0.00  | 0.00   | 0.95  | 0.95  | 0.98  | 0.98  | 0.00  |
| Uniform Delay (d), s/veh     | 17.5  | 0.0   | 18.0  | 18.2  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 7.1   | 7.2   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.1   | 0.1   | 0.0   | 0.0   | 0.0  | 0.7   | 0.7   | 0.7   | 0.8   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.0   | 1.0   | 0.9   | 0.0   | 0.0   | 0.0  | 0.2   | 0.2   | 2.6   | 2.5   | 0.0   |
| LnGrp Delay(d),s/veh         | 17.5  | 0.0   | 18.1  | 18.2  | 0.0   | 0.0   | 0.0  | 0.7   | 0.7   | 7.8   | 8.0   | 0.0   |
| LnGrp LOS                    | B   |   | B   | B   |   |   |  | A   | A   | A   | A   |   |
| Approach Vol, veh/h          |   | 97  |   |   | 59  |   |  | 512   |   |   | 495   |   |
| Approach Delay, s/veh        |   | 17.9  |   |   | 18.2  |   |  | 0.7   |   |   | 7.9   |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 45.0  |   | 25.0  |   | 45.0  |  | 25.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 21.5  |   | 38.0  |  | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 4.3   |   | 7.8   |  | 4.6   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.9   |   | 0.6   |   | 4.9   |  | 0.6   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 6.1   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |



HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street

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| Movement               | EBL  | EBT  | EBR  | EBR2 | WBL2 | WBL  | WBT   | WBR  | NBL2 | NBL  | NBT   | NBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|-------|------|
| Lane Configurations    |      | ↕    |      |      | ↕    |      | ↕     |      |      | ↕    | ↕     |      |
| Traffic Volume (vph)   | 36   | 19   | 13   | 42   | 41   | 81   | 4     | 155  | 2    | 5    | 377   | 59   |
| Future Volume (vph)    | 36   | 19   | 13   | 42   | 41   | 81   | 4     | 155  | 2    | 5    | 377   | 59   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      | 4.0   |      |      | 4.0  | 4.0   |      |
| Lane Util. Factor      |      | 1.00 |      |      | 0.95 |      | 0.95  |      |      | 1.00 | 0.95  |      |
| Frbp, ped/bikes        |      | 0.98 |      |      | 1.00 |      | 1.00  |      |      | 1.00 | 0.99  |      |
| Flpb, ped/bikes        |      | 1.00 |      |      | 0.99 |      | 1.00  |      |      | 0.99 | 1.00  |      |
| Frt                    |      | 0.93 |      |      | 1.00 |      | 0.90  |      |      | 1.00 | 0.98  |      |
| Flt Protected          |      | 0.98 |      |      | 0.95 |      | 0.98  |      |      | 0.95 | 1.00  |      |
| Satd. Flow (prot)      |      | 1507 |      |      | 1491 |      | 1409  |      |      | 1572 | 3087  |      |
| Flt Permitted          |      | 0.68 |      |      | 0.67 |      | 0.84  |      |      | 0.57 | 1.00  |      |
| Satd. Flow (perm)      |      | 1039 |      |      | 1046 |      | 1209  |      |      | 949  | 3087  |      |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |
| Adj. Flow (vph)        | 36   | 19   | 13   | 42   | 41   | 81   | 4     | 155  | 2    | 5    | 377   | 59   |
| RTOR Reduction (vph)   | 0    | 32   | 0    | 0    | 0    | 0    | 90    | 0    | 0    | 0    | 11    | 0    |
| Lane Group Flow (vph)  | 0    | 78   | 0    | 0    | 37   | 0    | 154   | 0    | 0    | 7    | 425   | 0    |
| Confl. Peds. (#/hr)    | 23   |      |      | 19   | 19   |      |       |      |      | 10   |       | 32   |
| Confl. Bikes (#/hr)    |      |      |      | 2    |      |      |       |      |      |      |       |      |
| Turn Type              | Perm | NA   |      |      | Perm | Perm | NA    |      | Perm | Perm | NA    |      |
| Protected Phases       |      | 3    |      |      |      |      | 3     |      |      |      | 2     |      |
| Permitted Phases       | 3    |      |      |      | 3    | 3    |       |      | 2    | 2    |       |      |
| Actuated Green, G (s)  |      | 16.7 |      |      | 16.7 |      | 16.7  |      |      | 44.0 | 44.0  |      |
| Effective Green, g (s) |      | 17.7 |      |      | 17.7 |      | 17.7  |      |      | 46.0 | 46.0  |      |
| Actuated g/C Ratio     |      | 0.21 |      |      | 0.21 |      | 0.21  |      |      | 0.54 | 0.54  |      |
| Clearance Time (s)     |      | 5.0  |      |      | 5.0  |      | 5.0   |      |      | 6.0  | 6.0   |      |
| Vehicle Extension (s)  |      | 2.0  |      |      | 2.0  |      | 2.0   |      |      | 2.0  | 2.0   |      |
| Lane Grp Cap (vph)     |      | 216  |      |      | 217  |      | 251   |      |      | 513  | 1670  |      |
| v/s Ratio Prot         |      |      |      |      |      |      |       |      |      |      | c0.14 |      |
| v/s Ratio Perm         |      | 0.08 |      |      | 0.04 |      | c0.13 |      |      | 0.01 |       |      |
| v/c Ratio              |      | 0.36 |      |      | 0.17 |      | 0.61  |      |      | 0.01 | 0.25  |      |
| Uniform Delay, d1      |      | 28.8 |      |      | 27.6 |      | 30.5  |      |      | 9.0  | 10.4  |      |
| Progression Factor     |      | 1.00 |      |      | 1.00 |      | 1.00  |      |      | 1.21 | 1.05  |      |
| Incremental Delay, d2  |      | 0.4  |      |      | 0.1  |      | 3.1   |      |      | 0.0  | 0.4   |      |
| Delay (s)              |      | 29.2 |      |      | 27.8 |      | 33.6  |      |      | 11.0 | 11.3  |      |
| Level of Service       |      | C    |      |      | C    |      | C     |      |      | B    | B     |      |
| Approach Delay (s)     |      | 29.2 |      |      |      |      | 32.9  |      |      |      | 11.3  |      |
| Approach LOS           |      | C    |      |      |      |      | C     |      |      |      | B     |      |

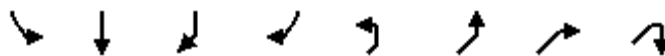
Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 18.4  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.37  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 70.3% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street





















2100 Telegraph  
 Existing Conditions PM



| Movement                    | SBL  | SBT  | SBR   | SBR2 | NEL2 | NEL   | NER  | NER2 |
|-----------------------------|------|------|-------|------|------|-------|------|------|
| Lane Configurations         |      |      |       |      |      |       |      |      |
| Traffic Volume (vph)        | 106  | 292  | 120   | 8    | 1    | 99    | 46   | 2    |
| Future Volume (vph)         | 106  | 292  | 120   | 8    | 1    | 99    | 46   | 2    |
| Ideal Flow (vphpl)          | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0  | 4.0  | 4.0   |      |      | 4.0   |      |      |
| Lane Util. Factor           | 1.00 | 0.95 | 1.00  |      |      | 0.97  |      |      |
| Frbp, ped/bikes             | 1.00 | 1.00 | 0.97  |      |      | 1.00  |      |      |
| Flpb, ped/bikes             | 0.97 | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Frt                         | 1.00 | 1.00 | 0.85  |      |      | 0.95  |      |      |
| Flt Protected               | 0.95 | 1.00 | 1.00  |      |      | 0.97  |      |      |
| Satd. Flow (prot)           | 1541 | 3185 | 1376  |      |      | 2993  |      |      |
| Flt Permitted               | 0.48 | 1.00 | 1.00  |      |      | 0.95  |      |      |
| Satd. Flow (perm)           | 779  | 3185 | 1376  |      |      | 2949  |      |      |
| Peak-hour factor, PHF       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 106  | 292  | 120   | 8    | 1    | 99    | 46   | 2    |
| RTOR Reduction (vph)        | 0    | 0    | 9     | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)       | 106  | 292  | 119   | 0    | 0    | 148   | 0    | 0    |
| Confl. Peds. (#/hr)         | 32   |      |       | 10   |      |       |      |      |
| Confl. Bikes (#/hr)         |      |      |       | 5    |      |       |      |      |
| Turn Type                   | Perm | NA   | pm+ov |      | D.Pm | Prot  |      |      |
| Protected Phases            |      | 6    | 4     |      |      | 4     |      |      |
| Permitted Phases            | 6    |      | 6     |      | 4    |       |      |      |
| Actuated Green, G (s)       | 44.0 | 44.0 | 52.3  |      |      | 8.3   |      |      |
| Effective Green, g (s)      | 46.0 | 46.0 | 54.3  |      |      | 9.3   |      |      |
| Actuated g/C Ratio          | 0.54 | 0.54 | 0.64  |      |      | 0.11  |      |      |
| Clearance Time (s)          | 6.0  | 6.0  | 5.0   |      |      | 5.0   |      |      |
| Vehicle Extension (s)       | 2.0  | 2.0  | 2.0   |      |      | 2.0   |      |      |
| Lane Grp Cap (vph)          | 421  | 1723 | 943   |      |      | 322   |      |      |
| v/s Ratio Prot              |      | 0.09 | 0.01  |      |      |       |      |      |
| v/s Ratio Perm              | 0.14 |      | 0.07  |      |      | c0.05 |      |      |
| v/c Ratio                   | 0.25 | 0.17 | 0.13  |      |      | 0.46  |      |      |
| Uniform Delay, d1           | 10.4 | 9.9  | 6.0   |      |      | 35.5  |      |      |
| Progression Factor          | 1.00 | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Incremental Delay, d2       | 1.4  | 0.2  | 0.0   |      |      | 0.4   |      |      |
| Delay (s)                   | 11.8 | 10.1 | 6.1   |      |      | 35.9  |      |      |
| Level of Service            | B    | B    | A     |      |      | D     |      |      |
| Approach Delay (s)          |      | 9.4  |       |      |      | 35.9  |      |      |
| Approach LOS                |      | A    |       |      |      | D     |      |      |
| <b>Intersection Summary</b> |      |      |       |      |      |       |      |      |

















HCM 2010 Signalized Intersection Summary  
30: Telegraph Avenue & 20th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |   |    |   |  |  |   |
| Traffic Volume (veh/h)       | 68  | 132   | 26  | 20  | 145   | 205   | 11   | 235   | 40  | 97  | 271   | 76  |
| Future Volume (veh/h)        | 68  | 132   | 26  | 20  | 145   | 205   | 11   | 235   | 40  | 97  | 271   | 76  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.86  |   | 0.76  | 0.84  |   | 0.76  | 0.87   |   | 0.83  | 0.97  |   | 0.82  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1676  | 1676   | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 68  | 132   | 12  | 20  | 145   | 55  | 11   | 235   | 32  | 97  | 271   | 62  |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 1   | 1  | 1   | 0   | 1   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 368   | 507   | 46  | 98  | 523   | 374   | 431  | 534   | 73  | 457   | 658   | 150   |
| Arrive On Green              | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.13   | 0.13  | 0.12  | 0.08  | 0.52  | 0.51  |
| Sat Flow, veh/h              | 909   | 1471  | 134   | 90  | 1517  | 1085  | 817  | 1406  | 191   | 1597  | 1260  | 288   |
| Grp Volume(v), veh/h         | 68  | 0   | 144   | 165   | 0   | 55  | 11   | 0   | 267   | 97  | 0   | 333   |
| Grp Sat Flow(s),veh/h/ln     | 909   | 0   | 1604  | 1606  | 0   | 1085  | 817  | 0   | 1598  | 1597  | 0   | 1549  |
| Q Serve(g_s), s              | 3.5   | 0.0   | 3.9   | 0.0   | 0.0   | 2.1   | 0.7  | 0.0   | 9.3   | 2.0   | 0.0   | 7.9   |
| Cycle Q Clear(g_c), s        | 7.8   | 0.0   | 3.9   | 4.3   | 0.0   | 2.1   | 0.7  | 0.0   | 9.3   | 2.0   | 0.0   | 7.9   |
| Prop In Lane                 | 1.00  |   | 0.08  | 0.12  |   | 1.00  | 1.00   |   | 0.12  | 1.00  |   | 0.19  |
| Lane Grp Cap(c), veh/h       | 368   | 0   | 553   | 621   | 0   | 374   | 431  | 0   | 607   | 457   | 0   | 808   |
| V/C Ratio(X)                 | 0.18  | 0.00  | 0.26  | 0.27  | 0.00  | 0.15  | 0.03   | 0.00  | 0.44  | 0.21  | 0.00  | 0.41  |
| Avail Cap(c_a), veh/h        | 388   | 0   | 588   | 655   | 0   | 398   | 431  | 0   | 607   | 524   | 0   | 808   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33   | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.95  | 0.00  | 0.95  | 0.88  | 0.00  | 0.88  | 0.99   | 0.00  | 0.99  | 1.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     | 17.1  | 0.0   | 14.2  | 14.3  | 0.0   | 13.6  | 16.6   | 0.0   | 20.3  | 9.5   | 0.0   | 8.8   |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.1  | 0.0   | 2.3   | 0.1   | 0.0   | 1.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.9   | 0.0   | 1.7   | 2.0   | 0.0   | 0.6   | 0.2  | 0.0   | 4.5   | 0.9   | 0.0   | 3.7   |
| LnGrp Delay(d),s/veh         | 17.2  | 0.0   | 14.3  | 14.4  | 0.0   | 13.6  | 16.7   | 0.0   | 22.6  | 9.6   | 0.0   | 10.3  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   | B  |   | C   | A   |   | B   |
| Approach Vol, veh/h          |   | 212   |   |   | 220   |   |  | 278   |   |   | 430   |   |
| Approach Delay, s/veh        |   | 15.2  |   |   | 14.2  |   |  | 22.4  |   |   | 10.2  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 8.5   | 26.8  |   | 24.7  |   | 35.3  |  | 24.7  |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  | 6.5   | 18.5  |   | 21.5  |   | 29.5  |  | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 4.0   | 11.3  |   | 9.8   |   | 9.9   |  | 6.3   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 1.7   |   | 1.6   |   | 2.7   |  | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 14.9  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |

















HCM 2010 Signalized Intersection Summary  
31: Broadway & 20th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 29  | 189   | 94  | 54  | 192   | 56  | 73   | 414   | 63  | 48  | 442   | 58  |
| Future Volume (veh/h)        | 29  | 189   | 94  | 54  | 192   | 56  | 73   | 414   | 63  | 48  | 442   | 58  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.84  |   | 0.75  | 0.84  |   | 0.75  | 1.00   |   | 0.84  | 0.93  |   | 0.70  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1710  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 29  | 189   | 23  | 54  | 192   | 24  | 73   | 414   | 52  | 48  | 442   | 45  |
| Adj No. of Lanes             | 0   | 2   | 0   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 138   | 765   | 91  | 201   | 645   | 82  | 70   | 776   | 140   | 222   | 1906  | 188   |
| Arrive On Green              | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 1.00  | 0.18  | 0.18  | 0.18  |
| Sat Flow, veh/h              | 228   | 2335  | 276   | 395   | 1970  | 251   | 6  | 1389  | 250   | 282   | 3414  | 337   |
| Grp Volume(v), veh/h         | 127   | 0   | 114   | 138   | 0   | 132   | 243  | 0   | 296   | 187   | 174   | 173   |
| Grp Sat Flow(s),veh/h/ln     | 1471  | 0   | 1369  | 1234  | 0   | 1382  | 221  | 0   | 1425  | 1347  | 1388  | 1298  |
| Q Serve(g_s), s              | 0.0   | 0.0   | 4.3   | 1.7   | 0.0   | 5.0   | 8.4  | 0.0   | 0.0   | 1.1   | 7.5   | 8.0   |
| Cycle Q Clear(g_c), s        | 3.9   | 0.0   | 4.3   | 6.0   | 0.0   | 5.0   | 8.4  | 0.0   | 0.0   | 6.9   | 7.5   | 8.0   |
| Prop In Lane                 | 0.23  |   | 0.20  | 0.39  |   | 0.18  | 0.30   |   | 0.18  | 0.26  |   | 0.26  |
| Lane Grp Cap(c), veh/h       | 545   | 0   | 448   | 476   | 0   | 453   | 0  | 0   | 796   | 816   | 775   | 724   |
| V/C Ratio(X)                 | 0.23  | 0.00  | 0.25  | 0.29  | 0.00  | 0.29  | 0.00   | 0.00  | 0.37  | 0.23  | 0.23  | 0.24  |
| Avail Cap(c_a), veh/h        | 566   | 0   | 469   | 495   | 0   | 474   | 0  | 0   | 796   | 816   | 775   | 724   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 0.33  | 0.33  | 0.33  |
| Upstream Filter(I)           | 0.97  | 0.00  | 0.97  | 0.98  | 0.00  | 0.98  | 0.92   | 0.00  | 0.92  | 0.96  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     | 17.1  | 0.0   | 17.3  | 17.5  | 0.0   | 17.5  | 0.0  | 0.0   | 0.0   | 15.3  | 15.7  | 15.9  |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.0  | 0.0   | 1.2   | 0.6   | 0.6   | 0.7   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.8   | 0.0   | 1.6   | 2.0   | 0.0   | 1.9   | 0.0  | 0.0   | 0.3   | 3.2   | 3.0   | 3.0   |
| LnGrp Delay(d),s/veh         | 17.2  | 0.0   | 17.4  | 17.7  | 0.0   | 17.6  | 0.0  | 0.0   | 1.2   | 16.0  | 16.3  | 16.6  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   |  |   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 241   |   |   | 270   |   |  | 539   |   |   | 535   |   |
| Approach Delay, s/veh        |   | 17.3  |   |   | 17.6  |   |  | 0.7   |   |   | 16.3  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.1  |   | 26.9  |   | 43.1  |  | 26.9  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.0   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 37.0  |   | 24.0  |   | 28.0  |  | 24.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 10.4  |   | 6.3   |   | 10.0  |  | 8.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.5   |   | 2.2   |   | 5.0   |  | 2.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.4  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 32: Brush Street & 18th Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |   |  |   |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 133   | 139   | 0   | 0  | 0   | 0   | 0   | 1215  | 146   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 133   | 139   | 0   | 0  | 0   | 0   | 0   | 1215  | 146   |
| Number                       |   |   |   | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 1.00  |  |   |   | 1.00  |   | 0.99  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 0   |  |   |   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 133   | 139   | 0   |  |   |   | 0   | 1215  | 131   |
| Adj No. of Lanes             |   |   |   | 1   | 2   | 0   |  |   |   | 0   | 4   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 0   |  |   |   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 387   | 604   | 0   |  |   |   | 0   | 3126  | 335   |
| Arrive On Green              |   |   |   | 0.06  | 0.06  | 0.00  |  |   |   | 0.00  | 0.59  | 0.56  |
| Sat Flow, veh/h              |   |   |   | 1597  | 3269  | 0   |  |   |   | 0   | 5559  | 571   |
| Grp Volume(v), veh/h         |   |   |   | 133   | 139   | 0   |  |   |   | 0   | 986   | 360   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1593  | 0   |  |   |   | 0   | 1442  | 1570  |
| Q Serve(g_s), s              |   |   |   | 6.8   | 3.5   | 0.0   |  |   |   | 0.0   | 10.4  | 10.6  |
| Cycle Q Clear(g_c), s        |   |   |   | 6.8   | 3.5   | 0.0   |  |   |   | 0.0   | 10.4  | 10.6  |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.00  |  |   |   | 0.00  |   | 0.36  |
| Lane Grp Cap(c), veh/h       |   |   |   | 387   | 604   | 0   |  |   |   | 0   | 2539  | 922   |
| V/C Ratio(X)                 |   |   |   | 0.34  | 0.23  | 0.00  |  |   |   | 0.00  | 0.39  | 0.39  |
| Avail Cap(c_a), veh/h        |   |   |   | 594   | 1016  | 0   |  |   |   | 0   | 2539  | 922   |
| HCM Platoon Ratio            |   |   |   | 0.33  | 0.33  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 0.82  | 0.82  | 0.00  |  |   |   | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 35.5  | 33.9  | 0.0   |  |   |   | 0.0   | 9.4   | 9.6   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.1   | 0.0   |  |   |   | 0.0   | 0.4   | 1.2   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 3.0   | 1.6   | 0.0   |  |   |   | 0.0   | 4.2   | 4.9   |
| LnGrp Delay(d),s/veh         |   |   |   | 35.6  | 34.0  | 0.0   |  |   |   | 0.0   | 9.8   | 10.9  |
| LnGrp LOS                    |   |   |   | D   | C   |   |  |   |   |   | A   | B   |
| Approach Vol, veh/h          |   |   |   |   | 272   |   |  |   |   |   | 1346  |   |
| Approach Delay, s/veh        |   |   |   |   | 34.8  |   |  |   |   |   | 10.1  |   |
| Approach LOS                 |   |   |   |   | C   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   |   |   | 53.9  |  | 20.1  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   |   |   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   |   |   | 47.9  |  | 26.6  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   |   |   | 12.6  |  | 8.8   |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   |   |   | 7.7   |  | 1.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 14.3  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 33: Castro Street & 18th Street & I-980 NB On-Ramp

2100 Telegraph  
 Existing Conditions PM





















| Movement               | WBT   | WBR  | WBR2 | NBL2  | NBL   | NBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    | ↔    |      | ↔     | ↔     | ↑↑↑  |
| Traffic Volume (vph)   | 166   | 265  | 85   | 106   | 1029  | 343  |
| Future Volume (vph)    | 166   | 265  | 85   | 106   | 1029  | 343  |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  | 0.91 |      | 0.86  | 0.81  | 0.81 |
| Frbp, ped/bikes        | 0.98  | 0.94 |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.92  | 0.85 |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  | 1.00 |      | 0.95  | 0.95  | 0.97 |
| Satd. Flow (prot)      | 2767  | 1224 |      | 1370  | 1290  | 3954 |
| Flt Permitted          | 1.00  | 1.00 |      | 0.95  | 0.95  | 0.97 |
| Satd. Flow (perm)      | 2767  | 1224 |      | 1370  | 1290  | 3954 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 166   | 265  | 85   | 106   | 1029  | 343  |
| RTOR Reduction (vph)   | 0     | 44   | 0    | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 341   | 131  | 0    | 95    | 515   | 868  |
| Confl. Peds. (#/hr)    |       | 8    | 8    |       |       |      |
| Confl. Bikes (#/hr)    |       | 10   | 10   |       |       |      |
| Turn Type              | NA    | Perm |      | Split | Split | NA   |
| Protected Phases       | 8     |      |      | 2     | 2     | 2    |
| Permitted Phases       |       | 8    |      |       |       |      |
| Actuated Green, G (s)  | 15.3  | 15.3 |      | 60.2  | 60.2  | 60.2 |
| Effective Green, g (s) | 15.8  | 15.8 |      | 61.2  | 61.2  | 61.2 |
| Actuated g/C Ratio     | 0.19  | 0.19 |      | 0.72  | 0.72  | 0.72 |
| Clearance Time (s)     | 4.5   | 4.5  |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   | 2.0  |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 514   | 227  |      | 986   | 928   | 2846 |
| v/s Ratio Prot         | c0.12 |      |      | 0.07  | c0.40 | 0.22 |
| v/s Ratio Perm         |       | 0.11 |      |       |       |      |
| v/c Ratio              | 0.66  | 0.58 |      | 0.10  | 0.55  | 0.30 |
| Uniform Delay, d1      | 32.1  | 31.6 |      | 3.6   | 5.5   | 4.3  |
| Progression Factor     | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  | 2.5   | 2.2  |      | 0.2   | 2.4   | 0.3  |
| Delay (s)              | 34.6  | 33.8 |      | 3.8   | 7.9   | 4.5  |
| Level of Service       | C     | C    |      | A     | A     | A    |
| Approach Delay (s)     | 34.3  |      |      |       |       | 5.7  |
| Approach LOS           | C     |      |      |       |       | A    |

| Intersection Summary              |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 13.1  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.58  |                           |     |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 55.2% | ICU Level of Service      | B   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
34: MLK Jr. Way & 18th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 14  | 305   | 9   | 40   | 139   | 0   | 0   | 141   | 109   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 14  | 305   | 9   | 40   | 139   | 0   | 0   | 141   | 109   |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.97  | 0.99   |   | 1.00  | 1.00  |   | 0.97  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 14  | 305   | 4   | 40   | 139   | 0   | 0   | 141   | 52  |
| Adj No. of Lanes             |   |   |   | 1   | 3   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 639   | 1862  | 24  | 325  | 1099  | 0   | 0   | 1093  | 385   |
| Arrive On Green              |   |   |   | 0.40  | 0.40  | 0.41  | 0.48   | 0.48  | 0.00  | 0.00  | 0.48  | 0.49  |
| Sat Flow, veh/h              |   |   |   | 1597  | 4654  | 61  | 517  | 2381  | 0   | 0   | 2376  | 807   |
| Grp Volume(v), veh/h         |   |   |   | 14  | 200   | 109   | 95   | 84  | 0   | 0   | 96  | 97  |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1526  | 1663  | 1372   | 1449  | 0   | 0   | 1593  | 1507  |
| Q Serve(g_s), s              |   |   |   | 0.3   | 2.7   | 2.7   | 0.0  | 2.1   | 0.0   | 0.0   | 2.2   | 2.3   |
| Cycle Q Clear(g_c), s        |   |   |   | 0.3   | 2.7   | 2.7   | 2.0  | 2.1   | 0.0   | 0.0   | 2.2   | 2.3   |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.04  | 0.42   |   | 0.00  | 0.00  |   | 0.54  |
| Lane Grp Cap(c), veh/h       |   |   |   | 639   | 1220  | 665   | 733  | 691   | 0   | 0   | 760   | 719   |
| V/C Ratio(X)                 |   |   |   | 0.02  | 0.16  | 0.16  | 0.13   | 0.12  | 0.00  | 0.00  | 0.13  | 0.14  |
| Avail Cap(c_a), veh/h        |   |   |   | 639   | 1220  | 665   | 733  | 691   | 0   | 0   | 760   | 719   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 11.8  | 12.5  | 12.5  | 9.4  | 9.4   | 0.0   | 0.0   | 9.5   | 9.3   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.3   | 0.5   | 0.4  | 0.4   | 0.0   | 0.0   | 0.3   | 0.4   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.2   | 1.2   | 1.3   | 1.0  | 0.9   | 0.0   | 0.0   | 1.0   | 1.0   |
| LnGrp Delay(d),s/veh         |   |   |   | 11.9  | 12.8  | 13.0  | 9.8  | 9.8   | 0.0   | 0.0   | 9.8   | 9.7   |
| LnGrp LOS                    |   |   |   | B   | B   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 323   |   |  | 179   |   |   | 193   |   |
| Approach Delay, s/veh        |   |   |   |   | 12.8  |   |  | 9.8   |   |   | 9.8   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 35.0  |   |   |   | 35.0  |  | 30.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 3.0   |   |   |   | 3.0   |  | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   |   |   | 32.0  |  | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.1   |   |   |   | 4.3   |  | 4.7   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.3   |   |   |   | 2.4   |  | 2.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.2  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 35: Jefferson Street & San Pablo Avenue & 19th Street

2100 Telegraph  
 Existing Conditions PM



| Movement               | WBL2 | WBL  | WBT  | WBR  | NBL2 | NBL  | NBT  | SBT   | SBR  | SBR2 | NEL2 | NEL  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↖    | ↑    | ↑↑    |      |      |      | ↗↘   |
| Traffic Volume (vph)   | 53   | 26   | 255  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| Future Volume (vph)    | 53   | 26   | 255  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      | 4.0  |      |      | 4.0  | 4.0  | 4.0   |      |      |      | 4.0  |
| Lane Util. Factor      |      |      | 0.95 |      |      | 1.00 | 1.00 | 0.95  |      |      |      | 0.97 |
| Frbp, ped/bikes        |      |      | 0.98 |      |      | 1.00 | 1.00 | 0.98  |      |      |      | 1.00 |
| Flpb, ped/bikes        |      |      | 0.99 |      |      | 0.94 | 1.00 | 1.00  |      |      |      | 1.00 |
| Frt                    |      |      | 0.96 |      |      | 1.00 | 1.00 | 0.96  |      |      |      | 1.00 |
| Flt Protected          |      |      | 0.99 |      |      | 0.95 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (prot)      |      |      | 2944 |      |      | 1498 | 1676 | 3024  |      |      |      | 3087 |
| Flt Permitted          |      |      | 0.99 |      |      | 0.53 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (perm)      |      |      | 2944 |      |      | 842  | 1676 | 3024  |      |      |      | 3087 |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 53   | 26   | 255  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| RTOR Reduction (vph)   | 0    | 0    | 63   | 0    | 0    | 0    | 0    | 6     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 412  | 0    | 0    | 41   | 187  | 342   | 0    | 0    | 0    | 121  |
| Confl. Peds. (#/hr)    | 20   | 20   |      | 54   | 29   | 29   |      |       | 29   |      |      |      |
| Confl. Bikes (#/hr)    |      |      |      | 1    |      |      |      |       | 12   |      |      |      |
| Turn Type              | Perm | Perm | NA   |      | Perm | Perm | NA   | NA    |      |      | Perm | Prot |
| Protected Phases       |      |      | 4    |      |      |      | 2    | 6     |      |      |      | 3    |
| Permitted Phases       | 4    | 4    |      |      | 2    | 2    |      |       |      |      | 3    |      |
| Actuated Green, G (s)  |      |      | 21.1 |      |      | 40.7 | 40.7 | 40.7  |      |      |      | 6.7  |
| Effective Green, g (s) |      |      | 22.1 |      |      | 43.2 | 43.2 | 43.2  |      |      |      | 7.7  |
| Actuated g/C Ratio     |      |      | 0.26 |      |      | 0.51 | 0.51 | 0.51  |      |      |      | 0.09 |
| Clearance Time (s)     |      |      | 5.0  |      |      | 6.5  | 6.5  | 6.5   |      |      |      | 5.0  |
| Vehicle Extension (s)  |      |      | 2.0  |      |      | 2.0  | 2.0  | 2.0   |      |      |      | 2.0  |
| Lane Grp Cap (vph)     |      |      | 765  |      |      | 427  | 851  | 1536  |      |      |      | 279  |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.11 | c0.11 |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.14 |      |      | 0.05 |      |       |      |      |      | 0.04 |
| v/c Ratio              |      |      | 0.54 |      |      | 0.10 | 0.22 | 0.22  |      |      |      | 0.43 |
| Uniform Delay, d1      |      |      | 27.1 |      |      | 10.8 | 11.6 | 11.6  |      |      |      | 36.6 |
| Progression Factor     |      |      | 1.00 |      |      | 1.00 | 1.00 | 0.65  |      |      |      | 1.00 |
| Incremental Delay, d2  |      |      | 0.4  |      |      | 0.4  | 0.6  | 0.3   |      |      |      | 0.4  |
| Delay (s)              |      |      | 27.4 |      |      | 11.3 | 12.2 | 7.8   |      |      |      | 37.0 |
| Level of Service       |      |      | C    |      |      | B    | B    | A     |      |      |      | D    |
| Approach Delay (s)     |      |      | 27.4 |      |      |      | 12.0 | 7.8   |      |      |      | 37.0 |
| Approach LOS           |      |      | C    |      |      |      | B    | A     |      |      |      | D    |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 19.6  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.34  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 56.2% | ICU Level of Service      | B    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group






















|                        |      |
|------------------------|------|
| Movement               | NER2 |
| Lane Configurations    |      |
| Traffic Volume (vph)   | 4    |
| Future Volume (vph)    | 4    |
| Ideal Flow (vphpl)     | 1900 |
| Total Lost time (s)    |      |
| Lane Util. Factor      |      |
| Frbp, ped/bikes        |      |
| Flpb, ped/bikes        |      |
| Frt                    |      |
| Flt Protected          |      |
| Satd. Flow (prot)      |      |
| Flt Permitted          |      |
| Satd. Flow (perm)      |      |
| Peak-hour factor, PHF  | 1.00 |
| Adj. Flow (vph)        | 4    |
| RTOR Reduction (vph)   | 0    |
| Lane Group Flow (vph)  | 0    |
| Confl. Peds. (#/hr)    |      |
| Confl. Bikes (#/hr)    |      |
| Turn Type              |      |
| Protected Phases       |      |
| Permitted Phases       |      |
| Actuated Green, G (s)  |      |
| Effective Green, g (s) |      |
| Actuated g/C Ratio     |      |
| Clearance Time (s)     |      |
| Vehicle Extension (s)  |      |
| Lane Grp Cap (vph)     |      |
| v/s Ratio Prot         |      |
| v/s Ratio Perm         |      |
| v/c Ratio              |      |
| Uniform Delay, d1      |      |
| Progression Factor     |      |
| Incremental Delay, d2  |      |
| Delay (s)              |      |
| Level of Service       |      |
| Approach Delay (s)     |      |
| Approach LOS           |      |
| Intersection Summary   |      |
















HCM 2010 Signalized Intersection Summary  
 36: Telegraph Avenue & 19th Street

2100 Telegraph  
 Existing Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 38  | 307   | 173   | 84  | 113   | 0   | 0   | 189   | 112   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 38  | 307   | 173   | 84  | 113   | 0   | 0   | 189   | 112   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.79  | 0.95  |   | 1.00  | 1.00  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 0   | 0   | 1710  | 1676  | 1710  | 1676  | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 0   | 0   | 0   | 38  | 307   | 106   | 84  | 113   | 0   | 0   | 189   | 84  |
| Adj No. of Lanes             | 1   | 0   | 0   | 0   | 2   | 0   | 1   | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 0   | 0   | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   | 0   | 0   | 0   | 93  | 762   | 269   | 450   | 664   | 0   | 0   | 414   | 184   |
| Arrive On Green              | 0.00  | 0.00  | 0.00  | 0.38  | 0.38  | 0.36  | 0.40  | 0.40  | 0.00  | 0.00  | 0.40  | 0.34  |
| Sat Flow, veh/h              |   | 0   |   | 248   | 2026  | 717   | 942   | 1676  | 0   | 0   | 1046  | 465   |
| Grp Volume(v), veh/h         |   | 0.0   |   | 255   | 0   | 196   | 84  | 113   | 0   | 0   | 0   | 273   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1664  | 0   | 1327  | 942   | 1676  | 0   | 0   | 0   | 1511  |
| Q Serve(g_s), s              |   |   |   | 4.0   | 0.0   | 3.8   | 2.5   | 1.5   | 0.0   | 0.0   | 0.0   | 4.8   |
| Cycle Q Clear(g_c), s        |   |   |   | 4.0   | 0.0   | 3.8   | 7.3   | 1.5   | 0.0   | 0.0   | 0.0   | 4.8   |
| Prop In Lane                 |   |   |   | 0.15  |   | 0.54  | 1.00  |   | 0.00  | 0.00  |   | 0.31  |
| Lane Grp Cap(c), veh/h       |   |   |   | 626   | 0   | 499   | 450   | 664   | 0   | 0   | 0   | 598   |
| V/C Ratio(X)                 |   |   |   | 0.41  | 0.00  | 0.39  | 0.19  | 0.17  | 0.00  | 0.00  | 0.00  | 0.46  |
| Avail Cap(c_a), veh/h        |   |   |   | 972   | 0   | 775   | 1071  | 1768  | 0   | 0   | 0   | 1593  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 1.00  | 1.00  | 0.00  | 0.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 8.1   | 0.0   | 8.1   | 10.5  | 6.9   | 0.0   | 0.0   | 0.0   | 8.1   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.2   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.2   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 1.8   | 0.0   | 1.4   | 0.7   | 0.7   | 0.0   | 0.0   | 0.0   | 2.0   |
| LnGrp Delay(d),s/veh         |   |   |   | 8.2   | 0.0   | 8.3   | 10.6  | 6.9   | 0.0   | 0.0   | 0.0   | 8.3   |
| LnGrp LOS                    |   |   |   | A   |   | A   | B   | A   |   |   |   | A   |
| Approach Vol, veh/h          |   |   |   |   | 451   |   |   | 197   |   |   | 273   |   |
| Approach Delay, s/veh        |   |   |   |   | 8.3   |   |   | 8.5   |   |   | 8.3   |   |
| Approach LOS                 |   |   |   |   | A   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 17.9  |   |   |   | 17.9  |   | 17.2  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   |   |   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |   | 20.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 9.3   |   |   |   | 6.8   |   | 6.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.3   |   |   |   | 2.3   |   | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 8.3   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |   |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
37: Broadway & 19th Street

2100 Telegraph  
Existing Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 61  | 349   | 89  | 110  | 455   | 0   | 0   | 545   | 57  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 61  | 349   | 89  | 110  | 455   | 0   | 0   | 545   | 57  |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.80  | 0.94   |   | 1.00  | 1.00  |   | 0.85  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1710  | 1710   | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 61  | 349   | 60  | 110  | 455   | 0   | 0   | 545   | 42  |
| Adj No. of Lanes             |   |   |   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 0   | 2   | 0   | 2  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 132   | 777   | 139   | 303  | 1174  | 0   | 0   | 2360  | 178   |
| Arrive On Green              |   |   |   | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 395   | 2327  | 415   | 416  | 2203  | 0   | 0   | 4429  | 323   |
| Grp Volume(v), veh/h         |   |   |   | 256   | 0   | 214   | 258  | 307   | 0   | 0   | 386   | 201   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1657  | 0   | 1480  | 1094   | 1449  | 0   | 0   | 1526  | 1550  |
| Q Serve(g_s), s              |   |   |   | 8.5   | 0.0   | 7.9   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 8.5   | 0.0   | 7.9   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.24  |   | 0.28  | 0.43   |   | 0.00  | 0.00  |   | 0.21  |
| Lane Grp Cap(c), veh/h       |   |   |   | 553   | 0   | 494   | 677  | 800   | 0   | 0   | 1684  | 855   |
| V/C Ratio(X)                 |   |   |   | 0.46  | 0.00  | 0.43  | 0.38   | 0.38  | 0.00  | 0.00  | 0.23  | 0.24  |
| Avail Cap(c_a), veh/h        |   |   |   | 615   | 0   | 550   | 677  | 800   | 0   | 0   | 1684  | 855   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.96   | 0.96  | 0.00  | 0.00  | 0.98  | 0.98  |
| Uniform Delay (d), s/veh     |   |   |   | 18.4  | 0.0   | 18.2  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.2   | 1.6  | 1.3   | 0.0   | 0.0   | 0.3   | 0.6   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 3.9   | 0.0   | 3.2   | 0.3  | 0.3   | 0.0   | 0.0   | 0.1   | 0.2   |
| LnGrp Delay(d),s/veh         |   |   |   | 18.6  | 0.0   | 18.4  | 1.6  | 1.3   | 0.0   | 0.0   | 0.3   | 0.6   |
| LnGrp LOS                    |   |   |   | B   |   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 470   |   |  | 565   |   |   | 587   |   |
| Approach Delay, s/veh        |   |   |   |   | 18.5  |   |  | 1.4   |   |   | 0.4   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 42.6  |   |   |   | 42.6  |  | 27.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   |   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |  | 26.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   |   |   | 2.0   |  | 10.5  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.5   |   |   |   | 6.5   |  | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 6.0   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 38: Brush Street & I-980 Westbound On-ramp & 17th Street

2100 Telegraph  
 Existing Conditions PM



| Movement               | EBT   | EBR  | EBR2 | SBL2  | SBL   | SBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    |      |      | ↵     | ↵     | ↕↑   |
| Traffic Volume (vph)   | 200   | 88   | 31   | 461   | 659   | 228  |
| Future Volume (vph)    | 200   | 88   | 31   | 461   | 659   | 228  |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.95  |      |      | 0.91  | 0.86  | 0.86 |
| Frbp, ped/bikes        | 0.99  |      |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  |      |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.94  |      |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 0.95  | 0.98 |
| Satd. Flow (prot)      | 2986  |      |      | 1449  | 1370  | 2833 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 0.95  | 0.98 |
| Satd. Flow (perm)      | 2986  |      |      | 1449  | 1370  | 2833 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 200   | 88   | 31   | 461   | 659   | 228  |
| RTOR Reduction (vph)   | 11    | 0    | 0    | 65    | 13    | 0    |
| Lane Group Flow (vph)  | 308   | 0    | 0    | 189   | 728   | 353  |
| Confl. Peds. (#/hr)    |       |      |      |       |       |      |
| Confl. Bikes (#/hr)    |       | 5    |      |       |       |      |
| Turn Type              | NA    |      |      | Split | Split | NA   |
| Protected Phases       | 4     |      |      | 6     | 6     | 6    |
| Permitted Phases       |       |      |      |       |       |      |
| Actuated Green, G (s)  | 13.4  |      |      | 62.1  | 62.1  | 62.1 |
| Effective Green, g (s) | 13.9  |      |      | 63.1  | 63.1  | 63.1 |
| Actuated g/C Ratio     | 0.16  |      |      | 0.74  | 0.74  | 0.74 |
| Clearance Time (s)     | 4.5   |      |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   |      |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 488   |      |      | 1075  | 1017  | 2103 |
| v/s Ratio Prot         | c0.10 |      |      | 0.13  | c0.53 | 0.12 |
| v/s Ratio Perm         |       |      |      |       |       |      |
| v/c Ratio              | 0.63  |      |      | 0.18  | 0.72  | 0.17 |
| Uniform Delay, d1      | 33.2  |      |      | 3.2   | 6.0   | 3.2  |
| Progression Factor     | 1.00  |      |      | 0.07  | 1.02  | 0.21 |
| Incremental Delay, d2  | 2.0   |      |      | 0.3   | 4.2   | 0.2  |
| Delay (s)              | 35.1  |      |      | 0.6   | 10.3  | 0.8  |
| Level of Service       | D     |      |      | A     | B     | A    |
| Approach Delay (s)     | 35.1  |      |      |       |       | 6.0  |
| Approach LOS           | D     |      |      |       |       | A    |

| Intersection Summary              |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 11.6  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.70  |                           |     |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 51.6% | ICU Level of Service      | A   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 39: I-980 Eastbound Off-ramp & Castro Street & 17th Street



















2100 Telegraph  
 Existing Conditions PM



| Movement                          | EBL   | EBT   | NBT   | NBR  | NEL                       | NER  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|
| Lane Configurations               |       |       |       |      |                           |      |
| Traffic Volume (vph)              | 193   | 468   | 919   | 66   | 366                       | 38   |
| Future Volume (vph)               | 193   | 468   | 919   | 66   | 366                       | 38   |
| Ideal Flow (vphp)                 | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   | 4.0   |      | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 0.91  | 0.91  |      | 0.97                      |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Frt                               | 1.00  | 1.00  | 0.99  |      | 0.99                      |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (prot)                 | 1593  | 4577  | 4525  |      | 3068                      |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (perm)                 | 1593  | 4577  | 4525  |      | 3068                      |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 193   | 468   | 919   | 66   | 366                       | 38   |
| RTOR Reduction (vph)              | 64    | 0     | 12    | 0    | 0                         | 0    |
| Lane Group Flow (vph)             | 129   | 468   | 973   | 0    | 404                       | 0    |
| Confl. Peds. (#/hr)               |       |       |       | 6    |                           |      |
| Confl. Bikes (#/hr)               |       |       |       |      |                           |      |
| Turn Type                         | Split | NA    | NA    |      | Prot                      |      |
| Protected Phases                  | 4     | 4     | 2     |      | 1                         |      |
| Permitted Phases                  |       |       |       |      |                           |      |
| Actuated Green, G (s)             | 28.5  | 28.5  | 19.5  |      | 7.5                       |      |
| Effective Green, g (s)            | 29.0  | 29.0  | 20.5  |      | 8.5                       |      |
| Actuated g/C Ratio                | 0.41  | 0.41  | 0.29  |      | 0.12                      |      |
| Clearance Time (s)                | 4.5   | 4.5   | 5.0   |      | 5.0                       |      |
| Vehicle Extension (s)             | 2.0   | 2.0   | 2.0   |      | 2.0                       |      |
| Lane Grp Cap (vph)                | 659   | 1896  | 1325  |      | 372                       |      |
| v/s Ratio Prot                    | 0.08  | c0.10 | c0.22 |      | c0.13                     |      |
| v/s Ratio Perm                    |       |       |       |      |                           |      |
| v/c Ratio                         | 0.20  | 0.25  | 0.73  |      | 1.09                      |      |
| Uniform Delay, d1                 | 13.1  | 13.4  | 22.3  |      | 30.8                      |      |
| Progression Factor                | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Incremental Delay, d2             | 0.7   | 0.3   | 1.8   |      | 71.7                      |      |
| Delay (s)                         | 13.7  | 13.7  | 24.1  |      | 102.4                     |      |
| Level of Service                  | B     | B     | C     |      | F                         |      |
| Approach Delay (s)                |       | 13.7  | 24.1  |      | 102.4                     |      |
| Approach LOS                      |       | B     | C     |      | F                         |      |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |
| HCM 2000 Control Delay            |       |       | 36.2  |      | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.54  |      |                           |      |
| Actuated Cycle Length (s)         |       |       | 70.0  |      | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization |       |       | 56.2% |      | ICU Level of Service      | B    |
| Analysis Period (min)             |       |       | 15    |      |                           |      |
| c Critical Lane Group             |       |       |       |      |                           |      |


















HCM 2010 Signalized Intersection Summary  
 1: Northgate Avenue/1-980 SB Off Ramp & 27th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |  |  |  |
| Traffic Volume (veh/h)       | 0   | 226   | 16  | 13  | 143   | 0   | 0  | 0   | 0   | 663   | 1191  | 363   |
| Future Volume (veh/h)        | 0   | 226   | 16  | 13  | 143   | 0   | 0  | 0   | 0   | 663   | 1191  | 363   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.95  | 0.99  |   | 1.00  |  |   |   | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 0   | 1676  | 1710  | 1676  | 1676  | 0   |  |   |   | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 0   | 226   | 10  | 13  | 143   | 0   |  |   |   | 618   | 1254  | 247   |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 1   | 2   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 2   | 2   | 2   | 0   |  |   |   | 2   | 2   | 2   |
| Cap, veh/h                   | 0   | 670   | 29  | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| Arrive On Green              | 0.00  | 0.22  | 0.21  | 0.23  | 0.23  | 0.00  |  |   |   | 0.67  | 0.67  | 0.67  |
| Sat Flow, veh/h              | 0   | 3184  | 136   | 1014  | 3269  | 0   |  |   |   | 1597  | 3353  | 1425  |
| Grp Volume(v), veh/h         | 0   | 115   | 121   | 13  | 143   | 0   |  |   |   | 618   | 1254  | 247   |
| Grp Sat Flow(s),veh/h/ln     | 0   | 1593  | 1644  | 1014  | 1593  | 0   |  |   |   | 1597  | 1676  | 1425  |
| Q Serve(g_s), s              | 0.0   | 5.0   | 5.0   | 0.9   | 2.9   | 0.0   |  |   |   | 16.7  | 15.8  | 5.6   |
| Cycle Q Clear(g_c), s        | 0.0   | 5.0   | 5.0   | 5.9   | 2.9   | 0.0   |  |   |   | 16.7  | 15.8  | 5.6   |
| Prop In Lane                 | 0.00  |   | 0.08  | 1.00  |   | 0.00  |  |   |   | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 0   | 344   | 355   | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| V/C Ratio(X)                 | 0.00  | 0.34  | 0.34  | 0.05  | 0.20  | 0.00  |  |   |   | 0.58  | 0.56  | 0.26  |
| Avail Cap(c_a), veh/h        | 0   | 344   | 355   | 258   | 728   | 0   |  |   |   | 1074  | 2256  | 959   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 0.0   | 26.8  | 26.9  | 28.5  | 25.2  | 0.0   |  |   |   | 7.1   | 6.9   | 5.2   |
| Incr Delay (d2), s/veh       | 0.0   | 2.6   | 2.6   | 0.4   | 0.6   | 0.0   |  |   |   | 2.2   | 1.0   | 0.7   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 2.4   | 2.5   | 0.3   | 1.4   | 0.0   |  |   |   | 7.9   | 7.5   | 2.3   |
| LnGrp Delay(d),s/veh         | 0.0   | 29.5  | 29.5  | 28.9  | 25.9  | 0.0   |  |   |   | 9.3   | 7.9   | 5.9   |
| LnGrp LOS                    |   | C   | C   | C   | C   |   |  |   |   | A   | A   | A   |
| Approach Vol, veh/h          |   | 236   |   |   | 156   |   |  |   |   |   | 2119  |   |
| Approach Delay, s/veh        |   | 29.5  |   |   | 26.1  |   |  |   |   |   | 8.1   |   |
| Approach LOS                 |   | C   |   |   | C   |   |  |   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   | 22.5  |   | 58.5  |  | 22.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   | * 5.5   |   | 6.5   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   | * 17  |   | 52.0  |  | 16.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   | 7.0   |   | 18.7  |  | 7.9   |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   | 1.6   |   | 22.1  |  | 1.4   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.2  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |























HCM 2010 Signalized Intersection Summary  
 2: Northgate Avenue/I-980 NB On Ramp & 27th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |   |   |   |   |
| Traffic Volume (veh/h)       | 165   | 724   | 0   | 0   | 142   | 323   | 14   | 332   | 11  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 165   | 724   | 0   | 0   | 142   | 323   | 14   | 332   | 11  | 0   | 0   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  |   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   |   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.96  | 1.00   |   | 1.00  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 0   | 1676  | 1676  | 1710   | 1676  | 1710  |   |   |   |
| Adj Flow Rate, veh/h         | 165   | 724   | 0   | 0   | 142   | 79  | 14   | 332   | 6   |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 2   | 0  | 3   | 0   |   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 0   | 2   | 2   | 0  | 2   | 0   |   |   |   |
| Cap, veh/h                   | 349   | 1593  | 0   | 0   | 657   | 495   | 77   | 1950  | 36  |   |   |   |
| Arrive On Green              | 0.07  | 0.16  | 0.00  | 0.00  | 0.21  | 0.21  | 0.43   | 0.43  | 0.41  |   |   |   |
| Sat Flow, veh/h              | 1597  | 3353  | 0   | 0   | 3269  | 2401  | 182  | 4587  | 85  |   |   |   |
| Grp Volume(v), veh/h         | 165   | 724   | 0   | 0   | 142   | 79  | 129  | 107   | 117   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1676  | 0   | 0   | 1593  | 1200  | 1667   | 1526  | 1661  |   |   |   |
| Q Serve(g_s), s              | 7.9   | 15.7  | 0.0   | 0.0   | 3.0   | 2.2   | 3.8  | 3.5   | 3.5   |   |   |   |
| Cycle Q Clear(g_c), s        | 7.9   | 15.7  | 0.0   | 0.0   | 3.0   | 2.2   | 3.8  | 3.5   | 3.5   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 0.11   |   | 0.05  |   |   |   |
| Lane Grp Cap(c), veh/h       | 349   | 1593  | 0   | 0   | 657   | 495   | 709  | 648   | 706   |   |   |   |
| V/C Ratio(X)                 | 0.47  | 0.45  | 0.00  | 0.00  | 0.22  | 0.16  | 0.18   | 0.16  | 0.17  |   |   |   |
| Avail Cap(c_a), veh/h        | 349   | 1593  | 0   | 0   | 657   | 495   | 709  | 648   | 706   |   |   |   |
| HCM Platoon Ratio            | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Uniform Delay (d), s/veh     | 32.7  | 24.3  | 0.0   | 0.0   | 26.4  | 26.1  | 14.3   | 14.2  | 14.3  |   |   |   |
| Incr Delay (d2), s/veh       | 4.5   | 0.9   | 0.0   | 0.0   | 0.8   | 0.7   | 0.6  | 0.5   | 0.5   |   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |   |   |   |
| %ile BackOfQ(50%),veh/ln     | 4.0   | 7.5   | 0.0   | 0.0   | 1.4   | 0.8   | 1.9  | 1.6   | 1.7   |   |   |   |
| LnGrp Delay(d),s/veh         | 37.2  | 25.3  | 0.0   | 0.0   | 27.1  | 26.7  | 14.9   | 14.8  | 14.8  |   |   |   |
| LnGrp LOS                    | D   | C   |   |   | C   | C   | B  | B   | B   |   |   |   |
| Approach Vol, veh/h          |   | 889   |   |   | 221   |   |  | 352   |   |   |   |   |
| Approach Delay, s/veh        |   | 27.5  |   |   | 27.0  |   |  | 14.8  |   |   |   |   |
| Approach LOS                 |   | C   |   |   | C   |   |  | B   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 38.0  |   | 42.0  |   |   | 21.5   | 20.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   |   | 5.5   |   |   | 3.5  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 32.5  |   | 36.5  |   |   | 18.0   | 15.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 5.8   |   | 17.7  |   |   | 9.9  | 5.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.4   |   | 1.4   |   |   | 0.1  | 1.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 24.4  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
3: Telegraph Avenue & 27th Street





















2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 260   | 375   | 103   | 39  | 241   | 97  | 75  | 275   | 22  | 44  | 248   | 128   |
| Future Volume (veh/h)        | 260   | 375   | 103   | 39  | 241   | 97  | 75  | 275   | 22  | 44  | 248   | 128   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.95  | 1.00  |   | 0.92  | 0.99  |   | 0.96  | 0.99  |   | 0.93  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 260   | 375   | 103   | 39  | 241   | 97  | 75  | 275   | 10  | 44  | 248   | 61  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 305   | 779   | 211   | 66  | 369   | 142   | 476   | 837   | 683   | 501   | 837   | 659   |
| Arrive On Green              | 0.19  | 0.32  | 0.32  | 0.01  | 0.06  | 0.06  | 0.66  | 0.66  | 0.66  | 0.50  | 0.50  | 0.50  |
| Sat Flow, veh/h              | 1597  | 2450  | 662   | 1597  | 2190  | 843   | 950   | 1676  | 1368  | 970   | 1676  | 1319  |
| Grp Volume(v), veh/h         | 260   | 242   | 236   | 39  | 172   | 166   | 75  | 275   | 10  | 44  | 248   | 61  |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 1519  | 1597  | 1593  | 1441  | 950   | 1676  | 1368  | 970   | 1676  | 1319  |
| Q Serve(g_s), s              | 13.4  | 10.4  | 10.7  | 2.1   | 9.0   | 9.6   | 3.4   | 6.0   | 0.2   | 2.3   | 7.4   | 2.1   |
| Cycle Q Clear(g_c), s        | 13.4  | 10.4  | 10.7  | 2.1   | 9.0   | 9.6   | 10.8  | 6.0   | 0.2   | 8.3   | 7.4   | 2.1   |
| Prop In Lane                 | 1.00  |   | 0.44  | 1.00  |   | 0.59  | 1.00  |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 305   | 507   | 483   | 66  | 269   | 243   | 476   | 837   | 683   | 501   | 837   | 659   |
| V/C Ratio(X)                 | 0.85  | 0.48  | 0.49  | 0.59  | 0.64  | 0.68  | 0.16  | 0.33  | 0.01  | 0.09  | 0.30  | 0.09  |
| Avail Cap(c_a), veh/h        | 376   | 507   | 483   | 376   | 412   | 373   | 476   | 837   | 683   | 501   | 837   | 659   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 0.33  | 0.33  | 0.33  | 1.33  | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.53  | 0.53  | 0.53  | 0.89  | 0.89  | 0.89  | 0.97  | 0.97  | 0.97  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 33.2  | 23.3  | 23.3  | 41.2  | 37.6  | 37.8  | 10.8  | 8.2   | 7.2   | 14.5  | 12.5  | 11.2  |
| Incr Delay (d2), s/veh       | 7.2   | 0.1   | 0.2   | 2.8   | 0.9   | 1.1   | 0.7   | 1.0   | 0.0   | 0.3   | 0.9   | 0.3   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 6.5   | 4.6   | 4.5   | 1.0   | 4.0   | 3.9   | 1.0   | 3.0   | 0.1   | 0.7   | 3.6   | 0.8   |
| LnGrp Delay(d),s/veh         | 40.4  | 23.4  | 23.5  | 44.0  | 38.5  | 39.0  | 11.5  | 9.2   | 7.2   | 14.9  | 13.4  | 11.4  |
| LnGrp LOS                    | D   | C   | C   | D   | D   | D   | B   | A   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 738   |   |   | 377   |   |   | 360   |   |   | 353   |   |
| Approach Delay, s/veh        |   | 29.4  |   |   | 39.3  |   |   | 9.6   |   |   | 13.2  |   |
| Approach LOS                 |   | C   |   |   | D   |   |   | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 46.4  | 7.5   | 31.0  |   | 46.4  | 20.2  | 18.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   | 4.5   | 3.5   |   | 5.5   | 4.5   | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.5  | 19.5  | 22.5  |   | 29.5  | 19.5  | 22.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 12.8  | 4.1   | 12.7  |   | 10.3  | 15.4  | 11.6  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.1   | 0.1   | 2.5   |   | 3.2   | 0.4   | 1.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 24.4  |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |   |   |   |   |   |   |















HCM 2010 Signalized Intersection Summary  
4: Broadway & 27th Street

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 143   | 171   | 187   | 54  | 232   | 215   | 74   | 450   | 29  | 93  | 493   | 100   |
| Future Volume (veh/h)        | 143   | 171   | 187   | 54  | 232   | 215   | 74   | 450   | 29  | 93  | 493   | 100   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.97  |   | 0.94  | 0.97  |   | 1.00  | 0.98   |   | 0.94  | 0.98  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 0.90  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1676  | 1676   | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 143   | 171   | 55  | 54  | 232   | 0   | 74   | 450   | 26  | 93  | 493   | 87  |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 1   | 1  | 2   | 0   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 346   | 780   | 240   | 199   | 798   | 471   | 409  | 1578  | 91  | 523   | 1453  | 254   |
| Arrive On Green              | 0.55  | 0.55  | 0.54  | 0.33  | 0.33  | 0.00  | 1.00   | 1.00  | 1.00  | 0.55  | 0.55  | 0.54  |
| Sat Flow, veh/h              | 999   | 2358  | 725   | 427   | 2412  | 1425  | 736  | 2892  | 166   | 803   | 2662  | 466   |
| Grp Volume(v), veh/h         | 143   | 113   | 113   | 149   | 137   | 0   | 74   | 247   | 229   | 93  | 293   | 287   |
| Grp Sat Flow(s),veh/h/ln     | 999   | 1593  | 1490  | 1390  | 1449  | 1425  | 736  | 1593  | 1466  | 803   | 1593  | 1536  |
| Q Serve(g_s), s              | 9.0   | 3.1   | 3.3   | 2.6   | 5.9   | 0.0   | 2.0  | 0.0   | 0.0   | 5.1   | 8.7   | 8.9   |
| Cycle Q Clear(g_c), s        | 14.9  | 3.1   | 3.3   | 6.1   | 5.9   | 0.0   | 10.9   | 0.0   | 0.0   | 5.1   | 8.7   | 8.9   |
| Prop In Lane                 | 1.00  |   | 0.49  | 0.36  |   | 1.00  | 1.00   |   | 0.11  | 1.00  |   | 0.30  |
| Lane Grp Cap(c), veh/h       | 346   | 527   | 493   | 517   | 479   | 471   | 409  | 869   | 800   | 523   | 869   | 838   |
| V/C Ratio(X)                 | 0.41  | 0.21  | 0.23  | 0.29  | 0.29  | 0.00  | 0.18   | 0.28  | 0.29  | 0.18  | 0.34  | 0.34  |
| Avail Cap(c_a), veh/h        | 438   | 675   | 631   | 642   | 614   | 604   | 409  | 869   | 800   | 523   | 869   | 838   |
| HCM Platoon Ratio            | 1.67  | 1.67  | 1.67  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.90  | 0.90  | 0.90  | 0.71  | 0.71  | 0.00  | 0.99   | 0.99  | 0.99  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 18.3  | 13.4  | 13.6  | 21.0  | 21.0  | 0.0   | 1.0  | 0.0   | 0.0   | 9.9   | 10.8  | 10.8  |
| Incr Delay (d2), s/veh       | 0.3   | 0.1   | 0.1   | 0.1   | 0.1   | 0.0   | 1.0  | 0.8   | 0.9   | 0.7   | 1.1   | 1.1   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.5   | 1.3   | 1.4   | 2.6   | 2.4   | 0.0   | 0.5  | 0.2   | 0.2   | 1.2   | 4.1   | 4.0   |
| LnGrp Delay(d),s/veh         | 18.5  | 13.5  | 13.7  | 21.0  | 21.1  | 0.0   | 2.0  | 0.8   | 0.9   | 10.7  | 11.8  | 11.9  |
| LnGrp LOS                    | B   | B   | B   | C   | C   |   | A  | A   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 369   |   |   | 286   |   |  | 550   |   |   | 673   |   |
| Approach Delay, s/veh        |   | 15.5  |   |   | 21.1  |   |  | 1.0   |   |   | 11.7  |   |
| Approach LOS                 |   | B   |   |   | C   |   |  | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 51.9  |   | 33.1  |   | 51.9  |  | 33.1  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   | 5.5   |   | 6.0   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 35.5  |   | 38.0  |  | 35.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 12.9  |   | 16.9  |   | 10.9  |  | 8.1   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.6   |   | 2.8   |   | 6.7   |  | 3.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 10.7  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |


















HCM 2010 Signalized Intersection Summary  
5: Telegraph Avenue & 26th Street\

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | WBL   | WBR   | NBT   | NBR   | SBL   | SBT   |   |   |
| Lane Configurations          |  |  |  |  |  |  |   |   |
| Traffic Volume (veh/h)       | 8   | 13  | 357   | 21  | 20  | 364   |   |   |
| Future Volume (veh/h)        | 8   | 13  | 357   | 21  | 20  | 364   |   |   |
| Number                       | 7   | 14  | 2   | 12  | 1   | 6   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  |   | 0.95  | 0.99  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |   |   |
| Adj Flow Rate, veh/h         | 8   | 3   | 357   | 15  | 20  | 364   |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 1   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 21  | 19  | 1506  | 1222  | 889   | 1506  |   |   |
| Arrive On Green              | 0.01  | 0.01  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 1676  | 1360  | 895   | 1676  |   |   |
| Grp Volume(v), veh/h         | 8   | 3   | 357   | 15  | 20  | 364   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 1676  | 1360  | 895   | 1676  |   |   |
| Q Serve(g_s), s              | 0.4   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.4   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 21  | 19  | 1506  | 1222  | 889   | 1506  |   |   |
| V/C Ratio(X)                 | 0.37  | 0.16  | 0.24  | 0.01  | 0.02  | 0.24  |   |   |
| Avail Cap(c_a), veh/h        | 423   | 377   | 1506  | 1222  | 889   | 1506  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.33  | 1.33  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.97  | 0.97  | 0.96  | 0.96  |   |   |
| Uniform Delay (d), s/veh     | 41.6  | 41.5  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 3.9   | 1.4   | 0.4   | 0.0   | 0.0   | 0.4   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.2   | 0.1   | 0.2   | 0.0   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 45.5  | 42.8  | 0.4   | 0.0   | 0.0   | 0.4   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   | A   | A   |   |   |
| Approach Vol, veh/h          | 11  |   | 372   |   |   | 384   |   |   |
| Approach Delay, s/veh        | 44.8  |   | 0.3   |   |   | 0.4   |   |   |
| Approach LOS                 | D   |   | A   |   |   | A   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.9  |   | 5.1   |   | 79.9  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 55.0  |   | 22.5  |   | 55.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.4   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 1.9   |   | 0.0   |   | 1.9   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.0   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
6: Broadway & 26th Street

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |   |   |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 1   | 2   | 10  | 0   | 0   | 0   | 16  | 529   | 23  | 19  | 703   | 17  |
| Future Volume (veh/h)        | 1   | 2   | 10  | 0   | 0   | 0   | 16  | 529   | 23  | 19  | 703   | 17  |
| Number                       | 7   | 4   | 14  |   |   |   | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  |   |   |   | 0.98  |   | 0.91  | 0.97  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 1   | 2   | 0   |   |   |   | 16  | 529   | 22  | 19  | 703   | 16  |
| Adj No. of Lanes             | 0   | 1   | 0   |   |   |   | 1   | 2   | 0   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 65  | 130   | 0   |   |   |   | 571   | 2353  | 98  | 650   | 2406  | 55  |
| Arrive On Green              | 0.12  | 0.12  | 0.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 550   | 1099  | 0   |   |   |   | 642   | 3103  | 129   | 745   | 3172  | 72  |
| Grp Volume(v), veh/h         | 3   | 0   | 0   |   |   |   | 16  | 271   | 280   | 19  | 353   | 366   |
| Grp Sat Flow(s),veh/h/ln     | 1649  | 0   | 0   |   |   |   | 642   | 1593  | 1639  | 745   | 1593  | 1651  |
| Q Serve(g_s), s              | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 | 0.33  |   | 0.00  |   |   |   | 1.00  |   | 0.08  | 1.00  |   | 0.04  |
| Lane Grp Cap(c), veh/h       | 195   | 0   | 0   |   |   |   | 571   | 1208  | 1243  | 650   | 1208  | 1252  |
| V/C Ratio(X)                 | 0.02  | 0.00  | 0.00  |   |   |   | 0.03  | 0.22  | 0.23  | 0.03  | 0.29  | 0.29  |
| Avail Cap(c_a), veh/h        | 708   | 0   | 0   |   |   |   | 571   | 1208  | 1243  | 650   | 1208  | 1252  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  |   |   |   | 0.98  | 0.98  | 0.98  | 0.97  | 0.97  | 0.97  |
| Uniform Delay (d), s/veh     | 33.1  | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.0   |   |   |   | 0.1   | 0.4   | 0.4   | 0.1   | 0.6   | 0.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.1   | 0.0   | 0.0   |   |   |   | 0.0   | 0.1   | 0.1   | 0.0   | 0.2   | 0.2   |
| LnGrp Delay(d),s/veh         | 33.1  | 0.0   | 0.0   |   |   |   | 0.1   | 0.4   | 0.4   | 0.1   | 0.6   | 0.6   |
| LnGrp LOS                    | C   |   |   |   |   |   | A   | A   | A   | A   | A   | A   |
| Approach Vol, veh/h          |   | 3   |   |   |   |   |   | 567   |   |   | 738   |   |
| Approach Delay, s/veh        |   | 33.1  |   |   |   |   |   | 0.4   |   |   | 0.6   |   |
| Approach LOS                 |   | C   |   |   |   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 69.5  |   | 15.5  |   | 69.5  |   |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |   |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 36.5  |   | 18.0  |   |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.1   |   | 2.0   |   |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.5   |   | 0.0   |   | 3.2   |   |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 0.6   |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |   |   |   |   |

# HCM Signalized Intersection Capacity Analysis

## 7: Broadway & 25th Street

2100 Telegraph  
Existing Plus Project Conditions AM



| Movement               | EBL  | EBT   | EBR  | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT  | SBR  |
|------------------------|------|-------|------|------|------|------|------|-------|------|-------|------|------|
| Lane Configurations    |      | ↻     |      |      |      | ↻    |      | ↕↻    |      | ↻     | ↕↕   |      |
| Traffic Volume (vph)   | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 481   | 5    | 248   | 451  | 16   |
| Future Volume (vph)    | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 481   | 5    | 248   | 451  | 16   |
| Ideal Flow (vphpl)     | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)    |      | 4.5   |      |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0  |      |
| Lane Util. Factor      |      | 1.00  |      |      |      | 1.00 |      | 0.95  |      | 1.00  | 0.95 |      |
| Frbp, ped/bikes        |      | 0.95  |      |      |      | 1.00 |      | 1.00  |      | 1.00  | 0.99 |      |
| Flpb, ped/bikes        |      | 1.00  |      |      |      | 1.00 |      | 1.00  |      | 1.00  | 1.00 |      |
| Frt                    |      | 0.90  |      |      |      | 0.86 |      | 1.00  |      | 1.00  | 0.99 |      |
| Flt Protected          |      | 1.00  |      |      |      | 1.00 |      | 1.00  |      | 0.95  | 1.00 |      |
| Satd. Flow (prot)      |      | 1439  |      |      |      | 1450 |      | 3163  |      | 1593  | 3139 |      |
| Flt Permitted          |      | 1.00  |      |      |      | 1.00 |      | 0.94  |      | 0.95  | 1.00 |      |
| Satd. Flow (perm)      |      | 1439  |      |      |      | 1450 |      | 2989  |      | 1593  | 3139 |      |
| Peak-hour factor, PHF  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)        | 0    | 9     | 23   | 0    | 0    | 53   | 11   | 481   | 5    | 248   | 451  | 16   |
| RTOR Reduction (vph)   | 0    | 22    | 0    | 0    | 0    | 39   | 0    | 1     | 0    | 0     | 2    | 0    |
| Lane Group Flow (vph)  | 0    | 10    | 0    | 0    | 0    | 14   | 0    | 496   | 0    | 248   | 465  | 0    |
| Confl. Peds. (#/hr)    |      |       | 16   | 16   |      |      | 121  |       | 82   |       |      | 121  |
| Confl. Bikes (#/hr)    |      |       |      |      |      |      |      |       | 8    |       |      | 61   |
| Turn Type              |      | NA    |      |      |      | Prot | Perm | NA    |      | Prot  | NA   |      |
| Protected Phases       |      | 4     |      |      |      | 8    |      | 2     |      | 3     | 6    |      |
| Permitted Phases       |      |       |      |      |      |      | 2    |       |      |       |      |      |
| Actuated Green, G (s)  |      | 3.7   |      |      |      | 22.3 |      | 53.2  |      | 16.6  | 53.2 |      |
| Effective Green, g (s) |      | 3.7   |      |      |      | 22.3 |      | 53.2  |      | 16.6  | 53.2 |      |
| Actuated g/C Ratio     |      | 0.04  |      |      |      | 0.26 |      | 0.63  |      | 0.20  | 0.63 |      |
| Clearance Time (s)     |      | 4.5   |      |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0  |      |
| Vehicle Extension (s)  |      | 2.0   |      |      |      | 2.0  |      | 2.0   |      | 2.0   | 2.0  |      |
| Lane Grp Cap (vph)     |      | 62    |      |      |      | 380  |      | 1870  |      | 311   | 1964 |      |
| v/s Ratio Prot         |      | c0.01 |      |      |      | 0.01 |      |       |      | c0.16 | 0.15 |      |
| v/s Ratio Perm         |      |       |      |      |      |      |      | c0.17 |      |       |      |      |
| v/c Ratio              |      | 0.16  |      |      |      | 0.04 |      | 0.27  |      | 0.80  | 0.24 |      |
| Uniform Delay, d1      |      | 39.2  |      |      |      | 23.3 |      | 7.1   |      | 32.6  | 7.0  |      |
| Progression Factor     |      | 1.00  |      |      |      | 1.00 |      | 0.72  |      | 0.84  | 1.37 |      |
| Incremental Delay, d2  |      | 0.4   |      |      |      | 0.0  |      | 0.3   |      | 12.3  | 0.3  |      |
| Delay (s)              |      | 39.6  |      |      |      | 23.4 |      | 5.5   |      | 39.6  | 9.8  |      |
| Level of Service       |      | D     |      |      |      | C    |      | A     |      | D     | A    |      |
| Approach Delay (s)     |      | 39.6  |      |      | 23.4 |      |      | 5.5   |      |       | 20.1 |      |
| Approach LOS           |      | D     |      |      | C    |      |      | A     |      |       | C    |      |












### Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 15.1  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.37  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 11.5 |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service      | A    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
8: Telegraph Avenue & 24th Street

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBR   | NBL   | NBT   | SBT   | SBR   |   |   |
| Lane Configurations          |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 22  | 62  | 18  | 370   | 348   | 24  |   |   |
| Future Volume (veh/h)        | 22  | 62  | 18  | 370   | 348   | 24  |   |   |
| Number                       | 7   | 14  | 5   | 2   | 6   | 16  |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  | 0.97  |   |   | 0.89  |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1710  |   |   |
| Adj Flow Rate, veh/h         | 22  | 12  | 18  | 370   | 348   | 24  |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 0   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 52  | 46  | 858   | 1474  | 1351  | 93  |   |   |
| Arrive On Green              | 0.03  | 0.03  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 879   | 1676  | 1536  | 106   |   |   |
| Grp Volume(v), veh/h         | 22  | 12  | 18  | 370   | 0   | 372   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 879   | 1676  | 0   | 1642  |   |   |
| Q Serve(g_s), s              | 1.1   | 0.7   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 1.1   | 0.7   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  | 1.00  |   |   | 0.06  |   |   |
| Lane Grp Cap(c), veh/h       | 52  | 46  | 858   | 1474  | 0   | 1444  |   |   |
| V/C Ratio(X)                 | 0.42  | 0.26  | 0.02  | 0.25  | 0.00  | 0.26  |   |   |
| Avail Cap(c_a), veh/h        | 441   | 394   | 858   | 1474  | 0   | 1444  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.97  | 0.97  | 0.00  | 0.97  |   |   |
| Uniform Delay (d), s/veh     | 40.3  | 40.1  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 2.0   | 1.1   | 0.0   | 0.4   | 0.0   | 0.4   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.5   | 0.3   | 0.0   | 0.2   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 42.4  | 41.2  | 0.0   | 0.4   | 0.0   | 0.4   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   |   | A   |   |   |
| Approach Vol, veh/h          | 34  |   |   | 388   | 372   |   |   |   |
| Approach Delay, s/veh        | 42.0  |   |   | 0.4   | 0.4   |   |   |   |
| Approach LOS                 | D   |   |   | A   | A   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 78.2  |   | 6.8   |   | 78.2  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 54.0  |   | 23.5  |   | 54.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 3.1   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 1.9   |   | 0.0   |   | 1.9   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 2.2   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

# HCM Signalized Intersection Capacity Analysis

## 9: 24th St & Harrison Street & 27th Street

2100 Telegraph  
Existing Plus Project Conditions AM



| Movement                          | EBU  | EBL   | EBT   | EBR  | EBR2 | WBL2 | WBL   | WBT   | WBR  | NBL   | NBT                       | NBR  |
|-----------------------------------|------|-------|-------|------|------|------|-------|-------|------|-------|---------------------------|------|
| Lane Configurations               |      | ↔     | ↕     | ↔    |      |      | ↔     | ↕     | ↔    | ↕↔    | ↕↔                        |      |
| Traffic Volume (vph)              | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 318                       | 60   |
| Future Volume (vph)               | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 318                       | 60   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 4.0   | 4.0   | 4.0  |      |      | 4.0   | 4.0   | 4.0  | 4.0   | 4.0                       |      |
| Lane Util. Factor                 |      | 1.00  | 0.95  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 0.97  | 0.95                      |      |
| Frbp, ped/bikes                   |      | 1.00  | 1.00  | 0.87 |      |      | 1.00  | 1.00  | 0.79 | 1.00  | 1.00                      |      |
| Flpb, ped/bikes                   |      | 1.00  | 1.00  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      |      |
| Frt                               |      | 1.00  | 1.00  | 0.85 |      |      | 1.00  | 1.00  | 0.85 | 1.00  | 0.98                      |      |
| Flt Protected                     |      | 0.95  | 1.00  | 1.00 |      |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00                      |      |
| Satd. Flow (prot)                 |      | 1593  | 3185  | 1242 |      |      | 1593  | 1676  | 1121 | 3090  | 3103                      |      |
| Flt Permitted                     |      | 0.95  | 1.00  | 1.00 |      |      | 0.95  | 1.00  | 1.00 | 0.95  | 1.00                      |      |
| Satd. Flow (perm)                 |      | 1593  | 3185  | 1242 |      |      | 1593  | 1676  | 1121 | 3090  | 3103                      |      |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 35   | 107   | 112   | 86   | 24   | 53   | 20    | 189   | 163  | 263   | 318                       | 60   |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 98   | 0    | 0    | 0     | 0     | 132  | 0     | 9                         | 0    |
| Lane Group Flow (vph)             | 0    | 142   | 112   | 12   | 0    | 0    | 73    | 189   | 31   | 263   | 369                       | 0    |
| Confl. Peds. (#/hr)               |      |       |       | 36   |      |      |       |       | 70   |       |                           |      |
| Confl. Bikes (#/hr)               |      |       |       | 10   |      |      |       |       | 39   |       |                           | 3    |
| Turn Type                         | Prot | Prot  | NA    | Perm |      |      | Prot  | Prot  | NA   | Perm  | Prot                      | NA   |
| Protected Phases                  | 7    | 7     | 4     |      |      |      | 3     | 3     | 8    |       | 5                         | 2    |
| Permitted Phases                  |      |       |       | 4    |      |      |       |       |      | 8     |                           |      |
| Actuated Green, G (s)             |      | 17.7  | 13.9  | 13.9 |      |      | 7.0   | 25.9  | 25.9 | 16.0  | 63.1                      |      |
| Effective Green, g (s)            |      | 18.7  | 14.9  | 14.9 |      |      | 8.0   | 26.9  | 26.9 | 17.0  | 64.1                      |      |
| Actuated g/C Ratio                |      | 0.13  | 0.11  | 0.11 |      |      | 0.06  | 0.19  | 0.19 | 0.12  | 0.46                      |      |
| Clearance Time (s)                |      | 5.0   | 5.0   | 5.0  |      |      | 5.0   | 5.0   | 5.0  | 5.0   | 5.0                       |      |
| Vehicle Extension (s)             |      | 3.0   | 3.0   | 3.0  |      |      | 3.0   | 3.0   | 3.0  | 3.0   | 3.0                       |      |
| Lane Grp Cap (vph)                |      | 212   | 338   | 132  |      |      | 91    | 322   | 215  | 375   | 1420                      |      |
| v/s Ratio Prot                    |      | c0.09 | 0.04  |      |      |      | c0.05 | c0.11 |      | c0.09 | c0.12                     |      |
| v/s Ratio Perm                    |      |       |       | 0.01 |      |      |       |       | 0.03 |       |                           |      |
| v/c Ratio                         |      | 0.67  | 0.33  | 0.09 |      |      | 0.80  | 0.59  | 0.15 | 0.70  | 0.26                      |      |
| Uniform Delay, d1                 |      | 57.7  | 57.9  | 56.4 |      |      | 65.2  | 51.5  | 47.0 | 59.1  | 23.4                      |      |
| Progression Factor                |      | 1.00  | 1.00  | 1.00 |      |      | 1.00  | 1.00  | 1.00 | 1.00  | 1.00                      |      |
| Incremental Delay, d2             |      | 7.8   | 0.6   | 0.3  |      |      | 38.2  | 2.7   | 0.3  | 5.8   | 0.4                       |      |
| Delay (s)                         |      | 65.5  | 58.5  | 56.7 |      |      | 103.4 | 54.2  | 47.3 | 64.9  | 23.8                      |      |
| Level of Service                  |      | E     | E     | E    |      |      | F     | D     | D    | E     | C                         |      |
| Approach Delay (s)                |      |       | 60.7  |      |      |      |       | 60.0  |      |       | 40.7                      |      |
| Approach LOS                      |      |       | E     |      |      |      |       | E     |      |       | D                         |      |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |       |       |      |       |                           |      |
| HCM 2000 Control Delay            |      |       | 47.2  |      |      |      |       |       |      |       | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.76  |      |      |      |       |       |      |       |                           |      |
| Actuated Cycle Length (s)         |      |       | 140.0 |      |      |      |       |       |      |       | Sum of lost time (s)      | 21.0 |
| Intersection Capacity Utilization |      |       | 79.2% |      |      |      |       |       |      |       | ICU Level of Service      | D    |
| Analysis Period (min)             |      |       | 15    |      |      |      |       |       |      |       |                           |      |
| c Critical Lane Group             |      |       |       |      |      |      |       |       |      |       |                           |      |

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

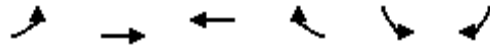
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| Movement                    | SBL  | SBT   | SBR  | SBR2 |
|-----------------------------|------|-------|------|------|
| Lane Configurations         | ↙    | ↑↑    |      |      |
| Traffic Volume (vph)        | 91   | 887   | 92   | 125  |
| Future Volume (vph)         | 91   | 887   | 92   | 125  |
| Ideal Flow (vphpl)          | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0  | 4.0   |      |      |
| Lane Util. Factor           | 1.00 | 0.95  |      |      |
| Frbp, ped/bikes             | 1.00 | 0.99  |      |      |
| Flpb, ped/bikes             | 1.00 | 1.00  |      |      |
| Frt                         | 1.00 | 0.97  |      |      |
| Flt Protected               | 0.95 | 1.00  |      |      |
| Satd. Flow (prot)           | 1593 | 3058  |      |      |
| Flt Permitted               | 0.95 | 1.00  |      |      |
| Satd. Flow (perm)           | 1593 | 3058  |      |      |
| Peak-hour factor, PHF       | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 91   | 887   | 92   | 125  |
| RTOR Reduction (vph)        | 0    | 6     | 0    | 0    |
| Lane Group Flow (vph)       | 91   | 1098  | 0    | 0    |
| Confl. Peds. (#/hr)         |      |       |      |      |
| Confl. Bikes (#/hr)         |      |       | 41   |      |
| Turn Type                   | Prot | NA    |      |      |
| Protected Phases            | 1    | 6     |      |      |
| Permitted Phases            |      |       |      |      |
| Actuated Green, G (s)       | 13.3 | 60.4  |      |      |
| Effective Green, g (s)      | 14.3 | 61.4  |      |      |
| Actuated g/C Ratio          | 0.10 | 0.44  |      |      |
| Clearance Time (s)          | 5.0  | 5.0   |      |      |
| Vehicle Extension (s)       | 3.0  | 3.0   |      |      |
| Lane Grp Cap (vph)          | 162  | 1341  |      |      |
| v/s Ratio Prot              | 0.06 | c0.36 |      |      |
| v/s Ratio Perm              |      |       |      |      |
| v/c Ratio                   | 0.56 | 0.82  |      |      |
| Uniform Delay, d1           | 59.9 | 34.4  |      |      |
| Progression Factor          | 1.00 | 1.00  |      |      |
| Incremental Delay, d2       | 4.4  | 5.7   |      |      |
| Delay (s)                   | 64.3 | 40.1  |      |      |
| Level of Service            | E    | D     |      |      |
| Approach Delay (s)          |      | 41.9  |      |      |
| Approach LOS                |      | D     |      |      |
| <b>Intersection Summary</b> |      |       |      |      |

HCM 2010 Signalized Intersection Summary  
 10: Grand Avenue & Northgate Avenue

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| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |   |
|------------------------------|------|------|------|------|------|------|---|---|
| Lane Configurations          |      |      |      |      |      |      |   |   |
| Traffic Volume (veh/h)       | 143  | 526  | 460  | 140  | 790  | 198  |   |   |
| Future Volume (veh/h)        | 143  | 526  | 460  | 140  | 790  | 198  |   |   |
| Number                       | 5    | 2    | 6    | 16   | 7    | 14   |   |   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.96 | 1.00 | 1.00 |   |   |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1710 | 1676 | 1676 |   |   |
| Adj Flow Rate, veh/h         | 143  | 526  | 460  | 115  | 790  | 67   |   |   |
| Adj No. of Lanes             | 1    | 2    | 2    | 0    | 2    | 1    |   |   |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |   |
| Cap, veh/h                   | 342  | 1917 | 847  | 210  | 952  | 425  |   |   |
| Arrive On Green              | 0.43 | 1.00 | 0.34 | 0.33 | 0.30 | 0.30 |   |   |
| Sat Flow, veh/h              | 1597 | 3269 | 2593 | 622  | 3193 | 1425 |   |   |
| Grp Volume(v), veh/h         | 143  | 526  | 290  | 285  | 790  | 67   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597 | 1593 | 1593 | 1539 | 1597 | 1425 |   |   |
| Q Serve(g_s), s              | 5.0  | 0.0  | 11.8 | 12.0 | 18.5 | 2.8  |   |   |
| Cycle Q Clear(g_c), s        | 5.0  | 0.0  | 11.8 | 12.0 | 18.5 | 2.8  |   |   |
| Prop In Lane                 | 1.00 |      |      | 0.40 | 1.00 | 1.00 |   |   |
| Lane Grp Cap(c), veh/h       | 342  | 1917 | 538  | 519  | 952  | 425  |   |   |
| V/C Ratio(X)                 | 0.42 | 0.27 | 0.54 | 0.55 | 0.83 | 0.16 |   |   |
| Avail Cap(c_a), veh/h        | 342  | 1917 | 538  | 519  | 1158 | 517  |   |   |
| HCM Platoon Ratio            | 2.00 | 2.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Upstream Filter(I)           | 0.86 | 0.86 | 0.96 | 0.96 | 1.00 | 1.00 |   |   |
| Uniform Delay (d), s/veh     | 19.4 | 0.0  | 21.5 | 21.6 | 26.2 | 20.7 |   |   |
| Incr Delay (d2), s/veh       | 0.3  | 0.3  | 3.7  | 3.9  | 3.7  | 0.1  |   |   |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |   |
| %ile BackOfQ(50%),veh/ln     | 2.2  | 0.1  | 5.7  | 5.6  | 8.6  | 2.5  |   |   |
| LnGrp Delay(d),s/veh         | 19.6 | 0.3  | 25.2 | 25.6 | 29.9 | 20.7 |   |   |
| LnGrp LOS                    | B    | A    | C    | C    | C    | C    |   |   |
| Approach Vol, veh/h          |      | 669  | 575  |      | 857  |      |   |   |
| Approach Delay, s/veh        |      | 4.4  | 25.4 |      | 29.1 |      |   |   |
| Approach LOS                 |      | A    | C    |      | C    |      |   |   |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8 |
| Assigned Phs                 |      | 2    |      | 4    | 5    | 6    |   |   |
| Phs Duration (G+Y+Rc), s     |      | 52.2 |      | 27.8 | 21.2 | 31.0 |   |   |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  | 4.5  | 4.5  |   |   |
| Max Green Setting (Gmax), s  |      | 42.5 |      | 28.5 | 11.5 | 26.5 |   |   |
| Max Q Clear Time (g_c+I1), s |      | 2.0  |      | 20.5 | 7.0  | 14.0 |   |   |
| Green Ext Time (p_c), s      |      | 3.4  |      | 2.9  | 1.4  | 2.1  |   |   |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |   |
| HCM 2010 Ctrl Delay          |      |      | 20.2 |      |      |      |   |   |
| HCM 2010 LOS                 |      |      | C    |      |      |      |   |   |
| <b>Notes</b>                 |      |      |      |      |      |      |   |   |



HCM 2010 Signalized Intersection Summary  
 11: Telegraph Avenue & Grand Avenue

























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|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 102   | 766   | 433   | 116   | 371   | 48  | 155   | 227   | 91  | 69  | 314   | 70  |
| Future Volume (veh/h)        | 102   | 766   | 433   | 116   | 371   | 48  | 155   | 227   | 91  | 69  | 314   | 70  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.92  | 1.00  |   | 0.93  | 0.98  |   | 0.96  | 0.97  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 102   | 766   | 433   | 116   | 371   | 48  | 155   | 227   | 70  | 69  | 314   | 26  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1   | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 428   | 817   | 458   | 101   | 1207  | 155   | 435   | 799   | 649   | 406   | 571   | 435   |
| Arrive On Green              | 0.43  | 0.43  | 0.42  | 0.86  | 0.86  | 0.85  | 0.09  | 0.48  | 0.48  | 0.68  | 0.68  | 0.68  |
| Sat Flow, veh/h              | 851   | 1902  | 1066  | 418   | 2812  | 360   | 1597  | 1676  | 1363  | 945   | 1676  | 1278  |
| Grp Volume(v), veh/h         | 102   | 640   | 559   | 116   | 208   | 211   | 155   | 227   | 70  | 69  | 314   | 26  |
| Grp Sat Flow(s),veh/h/ln     | 851   | 1593  | 1376  | 418   | 1593  | 1579  | 1597  | 1676  | 1363  | 945   | 1676  | 1278  |
| Q Serve(g_s), s              | 6.9   | 32.6  | 33.2  | 3.3   | 2.1   | 2.2   | 5.2   | 7.0   | 2.4   | 2.3   | 8.1   | 0.6   |
| Cycle Q Clear(g_c), s        | 9.1   | 32.6  | 33.2  | 36.5  | 2.1   | 2.2   | 5.2   | 7.0   | 2.4   | 2.3   | 8.1   | 0.6   |
| Prop In Lane                 | 1.00  |   | 0.78  | 1.00  |   | 0.23  | 1.00  |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 428   | 684   | 591   | 101   | 684   | 678   | 435   | 799   | 649   | 406   | 571   | 435   |
| V/C Ratio(X)                 | 0.24  | 0.94  | 0.95  | 1.15  | 0.30  | 0.31  | 0.36  | 0.28  | 0.11  | 0.17  | 0.55  | 0.06  |
| Avail Cap(c_a), veh/h        | 428   | 684   | 591   | 101   | 684   | 678   | 462   | 799   | 649   | 406   | 571   | 435   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.77  | 0.77  | 0.77  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.97  | 0.97  | 0.97  |
| Uniform Delay (d), s/veh     | 17.2  | 23.1  | 23.5  | 24.0  | 3.6   | 3.6   | 15.7  | 13.5  | 12.3  | 9.3   | 10.2  | 9.0   |
| Incr Delay (d2), s/veh       | 0.1   | 16.7  | 20.1  | 134.8   | 0.1   | 0.1   | 0.2   | 0.9   | 0.3   | 0.9   | 3.7   | 0.3   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.6   | 17.4  | 15.9  | 6.1   | 0.9   | 0.9   | 2.3   | 3.4   | 1.0   | 0.7   | 4.1   | 0.2   |
| LnGrp Delay(d),s/veh         | 17.3  | 39.8  | 43.6  | 158.8   | 3.7   | 3.7   | 15.9  | 14.4  | 12.6  | 10.2  | 13.9  | 9.3   |
| LnGrp LOS                    | B   | D   | D   | F   | A   | A   | B   | B   | B   | B   | B   | A   |
| Approach Vol, veh/h          |   | 1301  |   |   | 535   |   |   | 452   |   |   | 409   |   |
| Approach Delay, s/veh        |   | 39.7  |   |   | 37.3  |   |   | 14.6  |   |   | 13.0  |   |
| Approach LOS                 |   | D   |   |   | D   |   |   | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 44.5  |   | 40.5  | 11.5  | 33.0  |   | 40.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   | 4.5   | 4.5   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.5  |   | 36.0  | 8.5   | 25.5  |   | 36.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 9.0   |   | 35.2  | 7.2   | 10.1  |   | 38.5  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 3.4   |   | 0.7   | 0.1   | 2.9   |   | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 31.0  |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |   |   |   |   |   |   |

| Intersection             |        |       |      |        |       |      |        |       |      |        |      |      |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|------|--------|------|------|
| Int Delay, s/veh         | 1.2    |       |      |        |       |      |        |       |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations      | ↔↔     |       |      | ↔↔     |       |      | ↔↔     |       |      | ↔↔     |      |      |
| Traffic Vol, veh/h       | 27     | 681   | 187  | 39     | 546   | 9    | 2      | 4     | 8    | 3      | 4    | 20   |
| Future Vol, veh/h        | 27     | 681   | 187  | 39     | 546   | 9    | 2      | 4     | 8    | 3      | 4    | 20   |
| Conflicting Peds, #/hr   | 20     | 0     | 36   | 36     | 0     | 20   | 22     | 0     | 35   | 35     | 0    | 22   |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop | Stop   | Stop | Stop |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None | -      | -    | None |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Peak Hour Factor         | 100    | 100   | 100  | 100    | 100   | 100  | 100    | 100   | 100  | 100    | 100  | 100  |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 27     | 681   | 187  | 39     | 546   | 9    | 2      | 4     | 8    | 3      | 4    | 20   |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |      | Minor2 |      |      |
| Conflicting Flow All     | 575    | 0     | 0    | 904    | 0     | 0    | 1240   | 1518  | 505  | 1081   | 1607 | 320  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 865    | 865   | -    | 649    | 649  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 375    | 653   | -    | 432    | 958  | -    |
| Critical Hdwy            | 4.14   | -     | -    | 4.14   | -     | -    | 7.54   | 6.54  | 6.94 | 7.54   | 6.54 | 6.94 |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.54   | 5.54  | -    | 6.54   | 5.54 | -    |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.54   | 5.54  | -    | 6.54   | 5.54 | -    |
| Follow-up Hdwy           | 2.22   | -     | -    | 2.22   | -     | -    | 3.52   | 4.02  | 3.32 | 3.52   | 4.02 | 3.32 |
| Pot Cap-1 Maneuver       | 994    | -     | -    | 748    | -     | -    | 131    | 118   | 512  | 172    | 104  | 676  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 315    | 369   | -    | 425    | 464  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 618    | 462   | -    | 572    | 334  | -    |
| Platoon blocked, %       | -      | -     | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Mov Cap-1 Maneuver       | 973    | -     | -    | 723    | -     | -    | 104    | 97    | 478  | 140    | 86   | 649  |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 104    | 97    | -    | 140    | 86   | -    |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 287    | 336   | -    | 394    | 420  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 536    | 418   | -    | 507    | 304  | -    |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |      | SB     |      |      |
| HCM Control Delay, s     | 0.4    |       |      | 1      |       |      | 26.6   |       |      | 19.6   |      |      |
| HCM LOS                  |        |       |      |        |       |      | D      |       |      | C      |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |      |        |      |      |
| Capacity (veh/h)         | 181    | 973   | -    | -      | 723   | -    | -      | 273   |      |        |      |      |
| HCM Lane V/C Ratio       | 0.077  | 0.028 | -    | -      | 0.054 | -    | -      | 0.099 |      |        |      |      |
| HCM Control Delay (s)    | 26.6   | 8.8   | 0.2  | -      | 10.3  | 0.4  | -      | 19.6  |      |        |      |      |
| HCM Lane LOS             | D      | A     | A    | -      | B     | A    | -      | C     |      |        |      |      |
| HCM 95th %tile Q(veh)    | 0.2    | 0.1   | -    | -      | 0.2   | -    | -      | 0.3   |      |        |      |      |

















HCM 2010 Signalized Intersection Summary  
 13: Broadway & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |   |  |  |   |  |   |   |  |  |   |  |
|------------------------------|---|--|---|---|--|---|---|--|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |   | <br> |   |  | <br> |  |  | <br> |   |
| Traffic Volume (veh/h)       | 61  | 549  | 76  | 110   | 416  | 25  | 118   | 362  | 131   | 50  | 319  | 67  |
| Future Volume (veh/h)        | 61  | 549  | 76  | 110   | 416  | 25  | 118   | 362  | 131   | 50  | 319  | 67  |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5   | 2  | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |  | 0.94  | 0.99  |  | 0.92  | 0.97  |  | 0.88  | 0.94  |  | 0.88  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1710  | 1676   | 1710  | 1676  | 1676   | 1676  | 1676  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 61  | 549  | 59  | 110   | 416  | 19  | 118   | 362  | 85  | 50  | 319  | 55  |
| Adj No. of Lanes             | 1   | 2  | 0   | 0   | 2  | 0   | 1   | 2  | 1   | 1   | 2  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 224   | 1018   | 109   | 186   | 695  | 33  | 478   | 1761   | 691   | 525   | 1475   | 249   |
| Arrive On Green              | 0.71  | 0.71   | 0.69  | 0.12  | 0.12   | 0.11  | 1.00  | 1.00   | 1.00  | 0.18  | 0.18   | 0.18  |
| Sat Flow, veh/h              | 855   | 2881   | 309   | 351   | 1967   | 94  | 876   | 3185   | 1251  | 796   | 2668   | 451   |
| Grp Volume(v), veh/h         | 61  | 303  | 305   | 243   | 0  | 302   | 118   | 362  | 85  | 50  | 188  | 186   |
| Grp Sat Flow(s),veh/h/ln     | 855   | 1593   | 1597  | 913   | 0  | 1500  | 876   | 1593   | 1251  | 796   | 1593   | 1526  |
| Q Serve(g_s), s              | 4.8   | 7.6  | 7.8   | 15.3  | 0.0  | 16.2  | 2.9   | 0.0  | 0.0   | 4.5   | 8.5  | 8.8   |
| Cycle Q Clear(g_c), s        | 20.9  | 7.6  | 7.8   | 23.1  | 0.0  | 16.2  | 11.7  | 0.0  | 0.0   | 4.5   | 8.5  | 8.8   |
| Prop In Lane                 | 1.00  |  | 0.19  | 0.45  |  | 0.06  | 1.00  |  | 1.00  | 1.00  |  | 0.30  |
| Lane Grp Cap(c), veh/h       | 224   | 562  | 564   | 384   | 0  | 530   | 478   | 1761   | 691   | 525   | 880  | 844   |
| V/C Ratio(X)                 | 0.27  | 0.54   | 0.54  | 0.63  | 0.00   | 0.57  | 0.25  | 0.21   | 0.12  | 0.10  | 0.21   | 0.22  |
| Avail Cap(c_a), veh/h        | 284   | 675  | 676   | 458   | 0  | 635   | 478   | 1761   | 691   | 525   | 880  | 844   |
| HCM Platoon Ratio            | 2.00  | 2.00   | 2.00  | 0.33  | 0.33   | 0.33  | 2.00  | 2.00   | 2.00  | 0.33  | 0.33   | 0.33  |
| Upstream Filter(I)           | 1.00  | 1.00   | 1.00  | 0.97  | 0.00   | 0.97  | 0.97  | 0.97   | 0.97  | 0.98  | 0.98   | 0.98  |
| Uniform Delay (d), s/veh     | 17.5  | 9.2  | 9.3   | 35.5  | 0.0  | 31.4  | 1.1   | 0.0  | 0.0   | 17.4  | 19.0   | 19.2  |
| Incr Delay (d2), s/veh       | 0.2   | 0.3  | 0.3   | 1.1   | 0.0  | 0.3   | 1.2   | 0.3  | 0.4   | 0.4   | 0.5  | 0.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.1   | 3.3  | 3.4   | 5.7   | 0.0  | 6.8   | 0.8   | 0.1  | 0.1   | 1.0   | 3.9  | 3.9   |
| LnGrp Delay(d),s/veh         | 17.7  | 9.5  | 9.6   | 36.6  | 0.0  | 31.8  | 2.3   | 0.3  | 0.4   | 17.7  | 19.6   | 19.8  |
| LnGrp LOS                    | B   | A  | A   | D   |  | C   | A   | A  | A   | B   | B  | B   |
| Approach Vol, veh/h          |   | 669  |   |   | 545  |   |   | 565  |   |   | 424  |   |
| Approach Delay, s/veh        |   | 10.3   |   |   | 33.9   |   |   | 0.7  |   |   | 19.4   |   |
| Approach LOS                 |   | B  |   |   | C  |   |   | A  |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7   | 8  |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  | 6   |   | 8  |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 51.0   |   | 34.0  |  | 51.0  |   | 34.0   |   |   |  |   |
| Change Period (Y+Rc), s      |   | 5.0  |   | 4.5   |  | 5.0   |   | 4.5  |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 40.0   |   | 35.5  |  | 40.0  |   | 35.5   |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 13.7   |   | 22.9  |  | 10.8  |   | 25.1   |   |   |  |   |
| Green Ext Time (p_c), s      |   | 5.5  |   | 4.9   |  | 5.6   |   | 4.4  |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 Ctrl Delay          | 15.4  |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 LOS                 | B   |  |   |   |  |   |   |  |   |   |  |   |



















HCM 2010 Signalized Intersection Summary  
 14: Webster Street & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 59  | 371   | 287   | 137   | 538   | 48  | 0  | 0   | 0   | 33  | 187   | 21  |
| Future Volume (veh/h)        | 59  | 371   | 287   | 137   | 538   | 48  | 0  | 0   | 0   | 33  | 187   | 21  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  |  |   |   | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.96  |   | 0.88  | 1.00  |   | 0.88  |  |   |   | 1.00  |   | 0.73  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 59  | 371   | 188   | 137   | 538   | 40  |  |   |   | 33  | 187   | 17  |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 138   | 786   | 384   | 177   | 1868  | 138   |  |   |   | 62  | 350   | 32  |
| Arrive On Green              | 0.16  | 0.16  | 0.15  | 0.11  | 0.63  | 0.61  |  |   |   | 0.28  | 0.28  | 0.28  |
| Sat Flow, veh/h              | 187   | 1671  | 817   | 1597  | 2975  | 220   |  |   |   | 222   | 1260  | 115   |
| Grp Volume(v), veh/h         | 331   | 0   | 287   | 137   | 287   | 291   |  |   |   | 237   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1427  | 0   | 1248  | 1597  | 1593  | 1603  |  |   |   | 1596  | 0   | 0   |
| Q Serve(g_s), s              | 7.7   | 0.0   | 17.9  | 7.1   | 7.0   | 7.1   |  |   |   | 10.7  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 16.7  | 0.0   | 17.9  | 7.1   | 7.0   | 7.1   |  |   |   | 10.7  | 0.0   | 0.0   |
| Prop In Lane                 | 0.18  |   | 0.65  | 1.00  |   | 0.14  |  |   |   | 0.14  |   | 0.07  |
| Lane Grp Cap(c), veh/h       | 721   | 0   | 587   | 177   | 1000  | 1006  |  |   |   | 444   | 0   | 0   |
| V/C Ratio(X)                 | 0.46  | 0.00  | 0.49  | 0.78  | 0.29  | 0.29  |  |   |   | 0.53  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 721   | 0   | 587   | 263   | 1000  | 1006  |  |   |   | 488   | 0   | 0   |
| HCM Platoon Ratio            | 0.33  | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.85  | 0.00  | 0.85  | 0.93  | 0.93  | 0.93  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 25.7  | 0.0   | 26.7  | 36.8  | 7.2   | 7.2   |  |   |   | 26.0  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 1.8   | 0.0   | 2.5   | 3.8   | 0.7   | 0.7   |  |   |   | 0.4   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 7.5   | 0.0   | 6.6   | 3.3   | 3.2   | 3.3   |  |   |   | 4.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 27.5  | 0.0   | 29.2  | 40.5  | 7.9   | 7.9   |  |   |   | 26.4  | 0.0   | 0.0   |
| LnGrp LOS                    | C   |   | C   | D   | A   | A   |  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 618   |   |   | 715   |   |  |   |   |   | 237   |   |
| Approach Delay, s/veh        |   | 28.3  |   |   | 14.1  |   |  |   |   |   | 26.4  |   |
| Approach LOS                 |   | C   |   |   | B   |   |  |   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 13.4  | 44.0  |   | 27.6  |   | 57.4  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   | 3.5   |   | 5.5   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 13.5  | 31.5  |   | 26.5  |   | 49.5  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 9.1   | 19.9  |   | 12.7  |   | 9.1   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.2   | 4.6   |   | 0.8   |   | 6.7   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 21.6  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |




















HCM 2010 Signalized Intersection Summary  
 15: Grand Avenue & Valdez Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 41  | 347   | 0   | 11  | 777   | 25  | 7  | 1   | 3   | 13  | 0   | 38  |
| Future Volume (veh/h)        | 41  | 347   | 0   | 11  | 777   | 25  | 7  | 1   | 3   | 13  | 0   | 38  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 3  | 8   | 18  | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 1.00  | 0.94  |   | 0.83  | 0.89   |   | 0.88  | 0.88  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 41  | 347   | 0   | 11  | 777   | 22  | 7  | 1   | 1   | 13  | 0   | 10  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 352   | 1857  | 0   | 590   | 1833  | 52  | 365  | 51  | 43  | 268   | 15  | 167   |
| Arrive On Green              | 1.00  | 1.00  | 0.00  | 0.58  | 0.58  | 0.58  | 0.32   | 0.32  | 0.32  | 0.32  | 0.00  | 0.32  |
| Sat Flow, veh/h              | 599   | 3269  | 0   | 867   | 3143  | 89  | 898  | 158   | 132   | 625   | 46  | 516   |
| Grp Volume(v), veh/h         | 41  | 347   | 0   | 11  | 394   | 405   | 9  | 0   | 0   | 23  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 599   | 1593  | 0   | 867   | 1593  | 1639  | 1188   | 0   | 0   | 1187  | 0   | 0   |
| Q Serve(g_s), s              | 1.6   | 0.0   | 0.0   | 0.5   | 11.6  | 11.6  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 13.2  | 0.0   | 0.0   | 0.5   | 11.6  | 11.6  | 0.3  | 0.0   | 0.0   | 0.9   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 1.00  |   | 0.05  | 0.78   |   | 0.11  | 0.57  |   | 0.43  |
| Lane Grp Cap(c), veh/h       | 352   | 1857  | 0   | 590   | 929   | 956   | 459  | 0   | 0   | 449   | 0   | 0   |
| V/C Ratio(X)                 | 0.12  | 0.19  | 0.00  | 0.02  | 0.42  | 0.42  | 0.02   | 0.00  | 0.00  | 0.05  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 352   | 1857  | 0   | 590   | 929   | 956   | 522  | 0   | 0   | 512   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.74  | 0.74  | 0.00  | 0.86  | 0.86  | 0.86  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 1.6   | 0.0   | 0.0   | 7.5   | 9.8   | 9.8   | 19.6   | 0.0   | 0.0   | 19.9  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.5   | 0.2   | 0.0   | 0.0   | 1.2   | 1.2   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 0.0   | 0.0   | 0.1   | 5.3   | 5.5   | 0.1  | 0.0   | 0.0   | 0.4   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 2.1   | 0.2   | 0.0   | 7.5   | 11.0  | 11.0  | 19.6   | 0.0   | 0.0   | 19.9  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   |   | A   | B   | B   | B  |   |   | B   |   |   |
| Approach Vol, veh/h          |   | 388   |   |   | 810   |   |  | 9   |   |   |   | 23  |
| Approach Delay, s/veh        |   | 0.4   |   |   | 11.0  |   |  | 19.6  |   |   |   | 19.9  |
| Approach LOS                 |   | A   |   |   | B   |   |  | B   |   |   |   | B   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 53.6  |   | 31.4  |   | 53.6  |  | 31.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 44.5  |   | 31.5  |   | 44.5  |  | 31.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 15.2  |   | 2.9   |   | 13.6  |  | 2.3   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.5   |   | 0.1   |   | 6.6   |  | 0.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 7.9   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

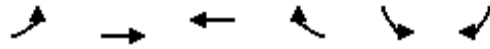
HCM 2010 Signalized Intersection Summary  
 16: Harrison Street & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |   |  |   |
| Traffic Volume (veh/h)       | 63  | 181   | 112   | 453   | 609   | 120   | 53   | 603   | 259   | 9   | 791   | 116   |
| Future Volume (veh/h)        | 63  | 181   | 112   | 453   | 609   | 120   | 53   | 603   | 259   | 9   | 791   | 116   |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.82  | 1.00  |   | 0.83  | 0.96   |   | 0.78  | 0.95  |   | 0.77  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1676  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 63  | 181   | 102   | 453   | 609   | 102   | 53   | 603   | 189   | 9   | 791   | 102   |
| Adj No. of Lanes             | 2   | 2   | 0   | 2   | 2   | 0   | 0  | 3   | 1   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 136   | 654   | 331   | 534   | 1297  | 216   | 113  | 1053  | 412   | 46  | 1266  | 159   |
| Arrive On Green              | 0.04  | 0.34  | 0.33  | 0.23  | 0.65  | 0.63  | 0.66   | 0.66  | 0.63  | 0.33  | 0.33  | 0.31  |
| Sat Flow, veh/h              | 3097  | 1899  | 960   | 3097  | 2645  | 441   | 168  | 3171  | 1112  | 15  | 3811  | 479   |
| Grp Volume(v), veh/h         | 63  | 148   | 135   | 453   | 366   | 345   | 128  | 528   | 189   | 344   | 288   | 270   |
| Grp Sat Flow(s),veh/h/ln     | 1549  | 1593  | 1266  | 1549  | 1593  | 1493  | 562  | 1388  | 1112  | 1647  | 1388  | 1270  |
| Q Serve(g_s), s              | 1.8   | 6.1   | 7.1   | 12.6  | 10.3  | 10.6  | 5.4  | 9.3   | 8.1   | 0.0   | 15.7  | 16.3  |
| Cycle Q Clear(g_c), s        | 1.8   | 6.1   | 7.1   | 12.6  | 10.3  | 10.6  | 21.7   | 9.3   | 8.1   | 15.5  | 15.7  | 16.3  |
| Prop In Lane                 | 1.00  |   | 0.76  | 1.00  |   | 0.30  | 0.42   |   | 1.00  | 0.03  |   | 0.38  |
| Lane Grp Cap(c), veh/h       | 136   | 549   | 436   | 534   | 781   | 732   | 243  | 922   | 412   | 588   | 461   | 422   |
| V/C Ratio(X)                 | 0.46  | 0.27  | 0.31  | 0.85  | 0.47  | 0.47  | 0.52   | 0.57  | 0.46  | 0.58  | 0.63  | 0.64  |
| Avail Cap(c_a), veh/h        | 379   | 549   | 436   | 551   | 781   | 732   | 254  | 956   | 426   | 608   | 478   | 438   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.33  | 1.33  | 1.33  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.99  | 0.99  | 0.99  | 0.89  | 0.89  | 0.89  | 0.99   | 0.99  | 0.99  | 0.53  | 0.53  | 0.53  |
| Uniform Delay (d), s/veh     | 42.0  | 21.3  | 22.1  | 33.6  | 9.8   | 10.0  | 13.4   | 11.6  | 11.4  | 25.2  | 25.3  | 25.8  |
| Incr Delay (d2), s/veh       | 2.4   | 1.2   | 1.8   | 10.6  | 1.8   | 1.9   | 1.7  | 0.8   | 0.8   | 0.7   | 1.3   | 1.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.8   | 2.8   | 2.7   | 6.1   | 4.8   | 4.7   | 1.4  | 3.5   | 2.5   | 7.3   | 6.2   | 5.9   |
| LnGrp Delay(d),s/veh         | 44.4  | 22.5  | 23.9  | 44.1  | 11.6  | 12.0  | 15.1   | 12.4  | 12.2  | 26.0  | 26.6  | 27.4  |
| LnGrp LOS                    | D   | C   | C   | D   | B   | B   | B  | B   | B   | C   | C   | C   |
| Approach Vol, veh/h          |   | 346   |   |   | 1164  |   |  | 845   |   |   | 902   |   |
| Approach Delay, s/veh        |   | 27.1  |   |   | 24.4  |   |  | 12.8  |   |   | 26.6  |   |
| Approach LOS                 |   | C   |   |   | C   |   |  | B   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 33.9  | 8.0   | 48.1  |   | 33.9  | 21.1   | 35.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.6   | 4.0   | 5.6   |   | 5.6   | 5.6  | * 5.6   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.4  | 11.0  | 34.4  |   | 29.4  | 16.0   | * 29  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 23.7  | 3.8   | 12.6  |   | 18.3  | 14.6   | 9.1   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.6   | 0.1   | 8.6   |   | 8.1   | 0.4  | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 22.3  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 17: Grand Avenue & Bay Place


















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| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Lane Configurations          |      |      |      |      |      |      |   |      |
| Traffic Volume (veh/h)       | 56   | 433  | 988  | 267  | 104  | 85   |   |      |
| Future Volume (veh/h)        | 56   | 433  | 988  | 267  | 104  | 85   |   |      |
| Number                       | 7    | 4    | 8    | 18   | 5    | 12   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.89 | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1676 | 1676 | 1710 |   |      |
| Adj Flow Rate, veh/h         | 56   | 433  | 988  | 183  | 122  | 0    |   |      |
| Adj No. of Lanes             | 1    | 2    | 2    | 1    | 2    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 0    |   |      |
| Cap, veh/h                   | 335  | 2688 | 2688 | 1058 | 214  | 89   |   |      |
| Arrive On Green              | 1.00 | 1.00 | 0.28 | 0.28 | 0.07 | 0.00 |   |      |
| Sat Flow, veh/h              | 429  | 3269 | 3269 | 1262 | 3193 | 1454 |   |      |
| Grp Volume(v), veh/h         | 56   | 433  | 988  | 183  | 122  | 0    |   |      |
| Grp Sat Flow(s),veh/h/ln     | 429  | 1593 | 1593 | 1262 | 1597 | 1454 |   |      |
| Q Serve(g_s), s              | 4.1  | 0.0  | 22.4 | 9.9  | 3.3  | 0.0  |   |      |
| Cycle Q Clear(g_c), s        | 26.5 | 0.0  | 22.4 | 9.9  | 3.3  | 0.0  |   |      |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 335  | 2688 | 2688 | 1058 | 214  | 89   |   |      |
| V/C Ratio(X)                 | 0.17 | 0.16 | 0.37 | 0.17 | 0.57 | 0.00 |   |      |
| Avail Cap(c_a), veh/h        | 335  | 2688 | 2688 | 1058 | 993  | 444  |   |      |
| HCM Platoon Ratio            | 2.00 | 2.00 | 0.33 | 0.33 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.96 | 0.96 | 0.81 | 0.81 | 1.00 | 0.00 |   |      |
| Uniform Delay (d), s/veh     | 3.9  | 0.0  | 13.2 | 8.8  | 40.7 | 0.0  |   |      |
| Incr Delay (d2), s/veh       | 1.0  | 0.1  | 0.3  | 0.3  | 0.9  | 0.0  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 0.6  | 0.0  | 10.1 | 3.6  | 1.5  | 0.0  |   |      |
| LnGrp Delay(d),s/veh         | 4.9  | 0.1  | 13.5 | 9.1  | 41.6 | 0.0  |   |      |
| LnGrp LOS                    | A    | A    | B    | A    | D    |      |   |      |
| Approach Vol, veh/h          |      | 489  | 1171 |      | 122  |      |   |      |
| Approach Delay, s/veh        |      | 0.7  | 12.8 |      | 41.6 |      |   |      |
| Approach LOS                 |      | A    | B    |      | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 |      | 2    |      | 4    |      |      |   | 8    |
| Phs Duration (G+Y+Rc), s     |      | 10.0 |      | 80.0 |      |      |   | 80.0 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      |      |   | 4.5  |
| Max Green Setting (Gmax), s  |      | 27.5 |      | 53.5 |      |      |   | 53.5 |
| Max Q Clear Time (g_c+I1), s |      | 5.3  |      | 28.5 |      |      |   | 24.4 |
| Green Ext Time (p_c), s      |      | 0.5  |      | 10.7 |      |      |   | 11.4 |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 11.4 |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |      |
| <b>Notes</b>                 |      |      |      |      |      |      |   |      |

HCM 2010 Signalized Intersection Summary  
 18: Bellevue Avenue/Park View Terrace & Grand Avenue



















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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 19  | 480   | 30  | 42  | 1178  | 13  | 0  | 0   | 0   | 20  | 2   | 49  |
| Future Volume (veh/h)        | 19  | 480   | 30  | 42  | 1178  | 13  | 0  | 0   | 0   | 20  | 2   | 49  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  |  |   |   | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.97  |   | 0.88  | 0.95  |   | 0.77  |  |   |   | 1.00  |   | 0.81  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 19  | 480   | 26  | 42  | 1178  | 12  |  |   |   | 20  | 2   | 27  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 329   | 1860  | 100   | 543   | 1963  | 20  |  |   |   | 159   | 16  | 215   |
| Arrive On Green              | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 0.30  | 0.30  | 0.29  |
| Sat Flow, veh/h              | 408   | 3049  | 165   | 759   | 3219  | 33  |  |   |   | 538   | 54  | 726   |
| Grp Volume(v), veh/h         | 19  | 250   | 256   | 42  | 583   | 607   |  |   |   | 49  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 408   | 1593  | 1621  | 759   | 1593  | 1659  |  |   |   | 1318  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 2.5   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 2.5   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.10  | 1.00  |   | 0.02  |  |   |   | 0.41  |   | 0.55  |
| Lane Grp Cap(c), veh/h       | 329   | 971   | 989   | 543   | 971   | 1012  |  |   |   | 390   | 0   | 0   |
| V/C Ratio(X)                 | 0.06  | 0.26  | 0.26  | 0.08  | 0.60  | 0.60  |  |   |   | 0.13  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 329   | 971   | 989   | 543   | 971   | 1012  |  |   |   | 432   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.98  | 0.82  | 0.82  | 0.82  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 23.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.3   | 0.6   | 0.6   | 0.2   | 2.2   | 2.2   |  |   |   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.2   | 0.2   | 0.0   | 0.6   | 0.6   |  |   |   | 0.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 0.3   | 0.6   | 0.6   | 0.2   | 2.2   | 2.2   |  |   |   | 23.3  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   |  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 525   |   |   | 1232  |   |  |   |   |   | 49  |   |
| Approach Delay, s/veh        |   | 0.6   |   |   | 2.1   |   |  |   |   |   | 23.3  |   |
| Approach LOS                 |   | A   |   |   | A   |   |  |   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 31.1  |   | 58.9  |   |   |  | 58.9  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   |   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.0  |   | 51.5  |   |   |  | 51.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.5   |   | 2.0   |   |   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.1   |   | 2.7   |   |   |  | 2.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 2.3   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |





















HCM 2010 Signalized Intersection Summary  
 19: Perkins Street & Grand Avenue

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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 33  | 415   | 27  | 31  | 1055  | 28  | 40   | 10  | 8   | 47  | 7   | 108   |
| Future Volume (veh/h)        | 33  | 415   | 27  | 31  | 1055  | 28  | 40   | 10  | 8   | 47  | 7   | 108   |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.87  | 0.95  |   | 0.84  | 0.96   |   | 0.95  | 0.96  |   | 0.94  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 33  | 415   | 23  | 31  | 1055  | 26  | 40   | 10  | 2   | 47  | 7   | 66  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 387   | 2040  | 112   | 616   | 2118  | 52  | 292  | 66  | 11  | 161   | 38  | 175   |
| Arrive On Green              | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.24   | 0.24  | 0.24  | 0.24  | 0.24  | 0.24  |
| Sat Flow, veh/h              | 457   | 3043  | 168   | 806   | 3160  | 78  | 918  | 275   | 48  | 436   | 160   | 728   |
| Grp Volume(v), veh/h         | 33  | 216   | 222   | 31  | 532   | 549   | 52   | 0   | 0   | 120   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 457   | 1593  | 1618  | 806   | 1593  | 1645  | 1240   | 0   | 0   | 1323  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 3.4   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 2.8  | 0.0   | 0.0   | 6.5   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.10  | 1.00  |   | 0.05  | 0.77   |   | 0.04  | 0.39  |   | 0.55  |
| Lane Grp Cap(c), veh/h       | 387   | 1068  | 1084  | 616   | 1068  | 1103  | 362  | 0   | 0   | 374   | 0   | 0   |
| V/C Ratio(X)                 | 0.09  | 0.20  | 0.20  | 0.05  | 0.50  | 0.50  | 0.14   | 0.00  | 0.00  | 0.32  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 387   | 1068  | 1084  | 616   | 1068  | 1103  | 503  | 0   | 0   | 523   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.98  | 0.75  | 0.75  | 0.75  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 27.1   | 0.0   | 0.0   | 28.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 0.4   | 0.4   | 0.1   | 1.2   | 1.2   | 0.1  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.1   | 0.1   | 0.0   | 0.4   | 0.4   | 1.0  | 0.0   | 0.0   | 2.5   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 0.4   | 0.4   | 0.4   | 0.1   | 1.2   | 1.2   | 27.2   | 0.0   | 0.0   | 28.6  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 471   |   |   | 1112  |   |  | 52  |   |   | 120   |   |
| Approach Delay, s/veh        |   | 0.4   |   |   | 1.2   |   |  | 27.2  |   |   | 28.6  |   |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 25.7  |   | 64.3  |   | 25.7  |  | 64.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 31.5  |   | 49.5  |   | 31.5  |  | 49.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 8.5   |   | 2.0   |   | 4.8   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.2   |   | 2.4   |   | 0.2   |  | 2.4   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 3.6   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |


















HCM 2010 Signalized Intersection Summary  
 20: Staten Avenue & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 12  | 455   | 8   | 29  | 1111  | 32  | 11   | 2   | 16  | 22  | 1   | 21  |
| Future Volume (veh/h)        | 12  | 455   | 8   | 29  | 1111  | 32  | 11   | 2   | 16  | 22  | 1   | 21  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |   | 0.87  | 0.95  |   | 0.82  | 0.98   |   | 0.98  | 0.98  |   | 0.98  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 12  | 455   | 7   | 29  | 1111  | 30  | 11   | 2   | 5   | 22  | 1   | 7   |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 335   | 1886  | 29  | 546   | 1854  | 50  | 311  | 61  | 119   | 364   | 23  | 97  |
| Arrive On Green              | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.32   | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  |
| Sat Flow, veh/h              | 433   | 3203  | 49  | 792   | 3148  | 85  | 766  | 191   | 368   | 914   | 72  | 300   |
| Grp Volume(v), veh/h         | 12  | 226   | 236   | 29  | 562   | 579   | 18   | 0   | 0   | 30  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 433   | 1593  | 1659  | 792   | 1593  | 1640  | 1325   | 0   | 0   | 1287  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.7  | 0.0   | 0.0   | 1.3   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.03  | 1.00  |   | 0.05  | 0.61   |   | 0.28  | 0.73  |   | 0.23  |
| Lane Grp Cap(c), veh/h       | 335   | 938   | 977   | 546   | 938   | 966   | 484  | 0   | 0   | 484   | 0   | 0   |
| V/C Ratio(X)                 | 0.04  | 0.24  | 0.24  | 0.05  | 0.60  | 0.60  | 0.04   | 0.00  | 0.00  | 0.06  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 335   | 938   | 977   | 546   | 938   | 966   | 484  | 0   | 0   | 484   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.98  | 0.73  | 0.73  | 0.73  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 21.1   | 0.0   | 0.0   | 21.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 0.6   | 0.6   | 0.1   | 2.1   | 2.0   | 0.1  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 0.2   | 0.2   | 0.0   | 0.5   | 0.5   | 0.3  | 0.0   | 0.0   | 0.6   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 0.2   | 0.6   | 0.6   | 0.1   | 2.1   | 2.0   | 21.2   | 0.0   | 0.0   | 21.4  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 474   |   |   | 1170  |   |  | 18  |   |   |   | 30  |
| Approach Delay, s/veh        |   | 0.6   |   |   | 2.0   |   |  | 21.2  |   |   |   | 21.4  |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   |   | C   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 33.0  |   | 57.0  |   | 33.0  |  | 57.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 28.5  |   | 52.5  |   | 28.5  |  | 52.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 3.3   |   | 2.0   |   | 2.7   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.2   |   | 18.1  |   | 0.2   |  | 18.1  |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 2.1   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |












HCM 2010 Signalized Intersection Summary  
 21: Grand Avenue & Euclid Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |   |  |
| Traffic Volume (veh/h)       | 24  | 503   | 0   | 1   | 1156  | 104   | 0  | 0   | 0   | 31  | 0   | 28  |
| Future Volume (veh/h)        | 24  | 503   | 0   | 1   | 1156  | 104   | 0  | 0   | 0   | 31  | 0   | 28  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 0.97  |   | 0.84  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 1710  | 1676  | 1710  | 0  | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 24  | 503   | 0   | 1   | 1156  | 98  | 0  | 0   | 0   | 31  | 0   | 0   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 2   | 2   | 2   | 0  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   | 585   | 2576  | 0   | 40  | 1337  | 113   | 0  | 162   | 0   | 203   | 0   | 0   |
| Arrive On Green              | 0.60  | 1.00  | 0.00  | 0.46  | 0.47  | 0.46  | 0.00   | 0.00  | 0.00  | 0.10  | 0.00  | 0.00  |
| Sat Flow, veh/h              | 1597  | 3269  | 0   | 0   | 2864  | 242   | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Grp Volume(v), veh/h         | 24  | 503   | 0   | 676   | 0   | 579   | 0  | 0   | 0   | 31  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 0   | 1676  | 0   | 1430  | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 32.7  | 0.0  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 32.7  | 0.0   | 32.7  | 0.0  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 0.17  | 0.00   |   | 0.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 585   | 2576  | 0   | 813   | 0   | 668   | 0  | 162   | 0   | 210   | 0   | 0   |
| V/C Ratio(X)                 | 0.04  | 0.20  | 0.00  | 0.83  | 0.00  | 0.87  | 0.00   | 0.00  | 0.00  | 0.15  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 585   | 2576  | 0   | 813   | 0   | 668   | 0  | 512   | 0   | 475   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.00  | 0.78  | 0.00  | 0.78  | 0.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 10.6  | 0.0   | 0.0   | 21.5  | 0.0   | 21.6  | 0.0  | 0.0   | 0.0   | 37.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.2   | 0.0   | 7.7   | 0.0   | 11.6  | 0.0  | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.2   | 0.1   | 0.0   | 16.8  | 0.0   | 15.0  | 0.0  | 0.0   | 0.0   | 0.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 10.6  | 0.2   | 0.0   | 29.3  | 0.0   | 33.2  | 0.0  | 0.0   | 0.0   | 37.5  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | A   |   | C   |   | C   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 527   |   |   | 1255  |   |  | 0   |   |   |   | 31  |
| Approach Delay, s/veh        |   | 0.6   |   |   | 31.1  |   |  | 0.0   |   |   |   | 37.5  |
| Approach LOS                 |   | A   |   |   | C   |   |  |   |   |   |   | D   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 13.2  | 30.8  | 46.0  |   | 13.2  |  | 76.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   | 4.5   | * 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.5  | 8.0   | * 42  |   | 27.5  |  | 53.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.0   | 2.0   | 34.7  |   | 0.0   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 0.6   | 1.4   |   | 0.0   |  | 0.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 22.3  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |













HCM 2010 Signalized Intersection Summary  
 22: El Embarcadero & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |   |      |
|------------------------------|---|---|---|---|---|---|---|------|
| Movement                     | EBT   | EBR   | WBL   | WBT   | NBL   | NBR   |   |      |
| Lane Configurations          |  |   |  |  |  |  |   |      |
| Traffic Volume (veh/h)       | 375   | 156   | 95  | 832   | 438   | 146   |   |      |
| Future Volume (veh/h)        | 375   | 156   | 95  | 832   | 438   | 146   |   |      |
| Number                       | 2   | 12  | 1   | 6   | 3   | 18  |   |      |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |      |
| Ped-Bike Adj(A_pbT)          |   | 0.92  | 1.00  |   | 1.00  | 1.00  |   |      |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Adj Sat Flow, veh/h/ln       | 1676  | 1710  | 1676  | 1676  | 1676  | 1676  |   |      |
| Adj Flow Rate, veh/h         | 375   | 121   | 95  | 832   | 438   | 44  |   |      |
| Adj No. of Lanes             | 2   | 0   | 1   | 2   | 1   | 1   |   |      |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |      |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |      |
| Cap, veh/h                   | 1157  | 366   | 125   | 1952  | 483   | 424   |   |      |
| Arrive On Green              | 0.50  | 0.49  | 0.16  | 1.00  | 0.30  | 0.30  |   |      |
| Sat Flow, veh/h              | 2414  | 737   | 1597  | 3269  | 1597  | 1425  |   |      |
| Grp Volume(v), veh/h         | 254   | 242   | 95  | 832   | 438   | 44  |   |      |
| Grp Sat Flow(s),veh/h/ln     | 1593  | 1474  | 1597  | 1593  | 1597  | 1425  |   |      |
| Q Serve(g_s), s              | 10.1  | 10.5  | 6.0   | 0.0   | 28.0  | 2.4   |   |      |
| Cycle Q Clear(g_c), s        | 10.1  | 10.5  | 6.0   | 0.0   | 28.0  | 2.4   |   |      |
| Prop In Lane                 |   | 0.50  | 1.00  |   | 1.00  | 1.00  |   |      |
| Lane Grp Cap(c), veh/h       | 791   | 732   | 125   | 1952  | 483   | 424   |   |      |
| V/C Ratio(X)                 | 0.32  | 0.33  | 0.76  | 0.43  | 0.91  | 0.10  |   |      |
| Avail Cap(c_a), veh/h        | 791   | 732   | 301   | 1952  | 603   | 531   |   |      |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  | 1.00  |   |      |
| Upstream Filter(I)           | 0.98  | 0.98  | 0.92  | 0.92  | 1.00  | 1.00  |   |      |
| Uniform Delay (d), s/veh     | 16.0  | 16.2  | 43.7  | 0.0   | 35.6  | 27.0  |   |      |
| Incr Delay (d2), s/veh       | 1.1   | 1.2   | 8.3   | 0.6   | 13.7  | 0.0   |   |      |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |      |
| %ile BackOfQ(50%),veh/ln     | 4.7   | 4.5   | 2.9   | 0.2   | 14.1  | 0.9   |   |      |
| LnGrp Delay(d),s/veh         | 17.0  | 17.4  | 52.0  | 0.6   | 49.3  | 27.0  |   |      |
| LnGrp LOS                    | B   | B   | D   | A   | D   | C   |   |      |
| Approach Vol, veh/h          | 496   |   |   | 927   | 482   |   |   |      |
| Approach Delay, s/veh        | 17.2  |   |   | 5.9   | 47.2  |   |   |      |
| Approach LOS                 | B   |   |   | A   | D   |   |   |      |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8    |
| Assigned Phs                 | 1   | 2   |   |   |   | 6   |   | 8    |
| Phs Duration (G+Y+Rc), s     | 12.3  | 57.6  |   |   |   | 70.0  |   | 36.0 |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   |   |   | 5.5   |   | 4.5  |
| Max Green Setting (Gmax), s  | 19.5  | 32.5  |   |   |   | 56.5  |   | 39.5 |
| Max Q Clear Time (g_c+I1), s | 8.0   | 12.5  |   |   |   | 2.0   |   | 30.0 |
| Green Ext Time (p_c), s      | 0.3   | 8.6   |   |   |   | 11.4  |   | 1.6  |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |      |
| HCM 2010 Ctrl Delay          |   |   | 19.3  |   |   |   |   |      |
| HCM 2010 LOS                 |   |   | B   |   |   |   |   |      |

HCM 2010 Signalized Intersection Summary  
 23: Grand Avenue & MacArthur Boulevard

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   | ↑↑↑   |   |   |   |   |  | ↑↑  | ↑   | ↑   | ↑↑  |   |
| Traffic Volume (veh/h)       | 155   | 649   | 285   | 0   | 0   | 0   | 0  | 300   | 211   | 177   | 788   | 0   |
| Future Volume (veh/h)        | 155   | 649   | 285   | 0   | 0   | 0   | 0  | 300   | 211   | 177   | 788   | 0   |
| Number                       | 7   | 4   | 14  |   |   |   | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.85  |   |   |   | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 0  | 1676  | 1676  | 1676  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 155   | 649   | 221   |   |   |   | 0  | 300   | 0   | 177   | 788   | 0   |
| Adj No. of Lanes             | 0   | 3   | 0   |   |   |   | 0  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 183   | 812   | 281   |   |   |   | 0  | 1521  | 674   | 206   | 2037  | 0   |
| Arrive On Green              | 0.29  | 0.29  | 0.28  |   |   |   | 0.00   | 0.48  | 0.00  | 0.26  | 1.00  | 0.00  |
| Sat Flow, veh/h              | 641   | 2847  | 986   |   |   |   | 0  | 3269  | 1425  | 1597  | 3269  | 0   |
| Grp Volume(v), veh/h         | 398   | 335   | 292   |   |   |   | 0  | 300   | 0   | 177   | 788   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1644  | 1526  | 1305  |   |   |   | 0  | 1593  | 1425  | 1597  | 1593  | 0   |
| Q Serve(g_s), s              | 24.2  | 21.3  | 21.9  |   |   |   | 0.0  | 5.8   | 0.0   | 11.2  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 24.2  | 21.3  | 21.9  |   |   |   | 0.0  | 5.8   | 0.0   | 11.2  | 0.0   | 0.0   |
| Prop In Lane                 | 0.39  |   | 0.76  |   |   |   | 0.00   |   | 1.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 469   | 435   | 372   |   |   |   | 0  | 1521  | 674   | 206   | 2037  | 0   |
| V/C Ratio(X)                 | 0.85  | 0.77  | 0.79  |   |   |   | 0.00   | 0.20  | 0.00  | 0.86  | 0.39  | 0.00  |
| Avail Cap(c_a), veh/h        | 566   | 525   | 449   |   |   |   | 0  | 1521  | 674   | 414   | 2037  | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  |
| Upstream Filter(l)           | 1.00  | 1.00  | 1.00  |   |   |   | 0.00   | 0.94  | 0.00  | 0.70  | 0.70  | 0.00  |
| Uniform Delay (d), s/veh     | 35.7  | 34.7  | 35.1  |   |   |   | 0.0  | 16.0  | 0.0   | 38.4  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 8.6   | 4.4   | 6.0   |   |   |   | 0.0  | 0.3   | 0.0   | 2.9   | 0.4   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 12.1  | 9.5   | 8.5   |   |   |   | 0.0  | 2.6   | 0.0   | 5.1   | 0.1   | 0.0   |
| LnGrp Delay(d),s/veh         | 44.3  | 39.2  | 41.1  |   |   |   | 0.0  | 16.2  | 0.0   | 41.3  | 0.4   | 0.0   |
| LnGrp LOS                    | D   | D   | D   |   |   |   |  | B   |   | D   | A   |   |
| Approach Vol, veh/h          |   | 1025  |   |   |   |   |  | 300   |   |   | 965   |   |
| Approach Delay, s/veh        |   | 41.7  |   |   |   |   |  | 16.2  |   |   | 7.9   |   |
| Approach LOS                 |   | D   |   |   |   |   |  | B   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 17.2  | 54.1  |   | 34.7  |   | 71.3  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 3.5   | 4.0   |   | 5.0   |   | 4.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 27.5  | 30.0  |   | 36.0  |   | 61.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 13.2  | 7.8   |   | 26.2  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.5   | 5.7   |   | 3.6   |   | 6.5   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 24.1  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 2.4

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      | ↕    | ↕    | ↕    | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 50   | 2    | 108  | 35   | 324  | 0    | 0    | 799  | 38   |
| Future Vol, veh/h        | 0    | 0    | 0    | 50   | 2    | 108  | 35   | 324  | 0    | 0    | 799  | 38   |
| Conflicting Peds, #/hr   | 1    | 0    | 20   | 20   | 0    | 1    | 71   | 0    | 68   | 68   | 0    | 71   |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | 100  | -    | 0    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 0    | 50   | 2    | 108  | 35   | 324  | 0    | 0    | 799  | 38   |

| Major/Minor          | Minor1 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 1232   | 1302  | 325   | 908    | 0 | - | -      | - | 0 |
| Stage 1              | 394    | 394   | -     | -      | - | - | -      | - | - |
| Stage 2              | 838    | 908   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | 4.12   | - | - | -      | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | 2.218  | - | - | -      | - | - |
| Pot Cap-1 Maneuver   | 196    | 161   | 716   | 750    | - | 0 | 0      | - | - |
| Stage 1              | 681    | 605   | -     | -      | - | 0 | 0      | - | - |
| Stage 2              | 424    | 354   | -     | -      | - | 0 | 0      | - | - |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 183    | 0     | 715   | 736    | - | - | -      | - | - |
| Mov Cap-2 Maneuver   | 183    | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 649    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 416    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 17.9 | 1  | 0  |
| HCM LOS              | C    |    |    |

| Minor Lane/Major Mvmt | NBL   | NBTWBLn1 | WBLn2 | SBT   | SBR |
|-----------------------|-------|----------|-------|-------|-----|
| Capacity (veh/h)      | 736   | -        | 183   | 715   | -   |
| HCM Lane V/C Ratio    | 0.048 | -        | 0.284 | 0.151 | -   |
| HCM Control Delay (s) | 10.1  | -        | 32.3  | 10.9  | -   |
| HCM Lane LOS          | B     | -        | D     | B     | -   |
| HCM 95th %tile Q(veh) | 0.1   | -        | 1.1   | 0.5   | -   |

**Intersection**

Int Delay, s/veh 5.8

| Movement                 | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      | ↶    |      |      | ↷    |
| Traffic Vol, veh/h       | 0    | 0    | 161  | 17   | 0    | 210  |
| Future Vol, veh/h        | 0    | 0    | 161  | 17   | 0    | 210  |
| Conflicting Peds, #/hr   | 15   | 0    | 0    | 15   | 20   | 2    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | 0    |
| Veh in Median Storage, # | -    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 161  | 17   | 0    | 210  |

**Major/Minor**

|                      | Major2 | Minor2 |
|----------------------|--------|--------|
| Conflicting Flow All | -      | 0      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Critical Hdwy        | -      | -      |
| Critical Hdwy Stg 1  | -      | -      |
| Critical Hdwy Stg 2  | -      | -      |
| Follow-up Hdwy       | -      | -      |
| Pot Cap-1 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Platoon blocked, %   | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |

**Approach**


















|                      | WB | SB   |
|----------------------|----|------|
| HCM Control Delay, s | 0  | 10.7 |
| HCM LOS              |    | B    |

**Minor Lane/Major Mvmt**

|                       | WBT | WBR | SBLn1 |
|-----------------------|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | 843   |
| HCM Lane V/C Ratio    | -   | -   | 0.249 |
| HCM Control Delay (s) | -   | -   | 10.7  |
| HCM Lane LOS          | -   | -   | B     |
| HCM 95th %tile Q(veh) | -   | -   | 1     |

HCM 2010 Signalized Intersection Summary  
 26: Broadway & 22nd Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 13  | 64  | 206   | 58   | 405   | 0   | 0   | 474   | 32  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 13  | 64  | 206   | 58   | 405   | 0   | 0   | 474   | 32  |
| Number                       |   |   |   | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.84  | 0.93   |   | 1.00  | 1.00  |   | 0.82  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1676  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 13  | 64  | 57  | 58   | 405   | 0   | 0   | 474   | 30  |
| Adj No. of Lanes             |   |   |   | 0   | 1   | 2   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 50  | 247   | 375   | 266  | 1797  | 0   | 0   | 2180  | 137   |
| Arrive On Green              |   |   |   | 0.18  | 0.18  | 0.18  | 0.72   | 0.73  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 281   | 1382  | 2098  | 292  | 2548  | 0   | 0   | 3083  | 189   |
| Grp Volume(v), veh/h         |   |   |   | 77  | 0   | 57  | 229  | 234   | 0   | 0   | 250   | 254   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1662  | 0   | 1049  | 1315   | 1449  | 0   | 0   | 1593  | 1595  |
| Q Serve(g_s), s              |   |   |   | 3.4   | 0.0   | 1.9   | 0.0  | 4.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 3.4   | 0.0   | 1.9   | 3.7  | 4.5   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.17  |   | 1.00  | 0.25   |   | 0.00  | 0.00  |   | 0.12  |
| Lane Grp Cap(c), veh/h       |   |   |   | 297   | 0   | 375   | 993  | 1054  | 0   | 0   | 1158  | 1160  |
| V/C Ratio(X)                 |   |   |   | 0.26  | 0.00  | 0.15  | 0.23   | 0.22  | 0.00  | 0.00  | 0.22  | 0.22  |
| Avail Cap(c_a), veh/h        |   |   |   | 548   | 0   | 691   | 993  | 1054  | 0   | 0   | 1158  | 1160  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.98   | 0.98  | 0.00  | 0.00  | 0.99  | 0.99  |
| Uniform Delay (d), s/veh     |   |   |   | 30.1  | 0.0   | 29.5  | 3.7  | 3.8   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.1   | 0.5  | 0.5   | 0.0   | 0.0   | 0.4   | 0.4   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 1.6   | 0.0   | 0.6   | 1.9  | 1.9   | 0.0   | 0.0   | 0.1   | 0.1   |
| LnGrp Delay(d),s/veh         |   |   |   | 30.2  | 0.0   | 29.5  | 4.2  | 4.3   | 0.0   | 0.0   | 0.4   | 0.4   |
| LnGrp LOS                    |   |   |   | C   |   | C   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 134   |   |  | 463   |   |   | 504   |   |
| Approach Delay, s/veh        |   |   |   |   | 29.9  |   |  | 4.2   |   |   | 0.4   |   |
| Approach LOS                 |   |   |   |   | C   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 65.8  |   | 19.2  |   | 65.8  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 48.0  |   | 27.5  |   | 48.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 6.5   |   | 5.4   |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.8   |   | 0.5   |   | 4.8   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 5.6   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |



**Intersection**

Int Delay, s/veh 6.6

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | 4TB  |      |      |      |      |      | T    |      | T    | T    |      |
| Traffic Vol, veh/h       | 52   | 16   | 43   | 0    | 0    | 0    | 0    | 327  | 148  | 291  | 459  | 0    |
| Future Vol, veh/h        | 52   | 16   | 43   | 0    | 0    | 0    | 0    | 327  | 148  | 291  | 459  | 0    |
| Conflicting Peds, #/hr   | 22   | 0    | 30   | 30   | 0    | 22   | 81   | 0    | 97   | 97   | 0    | 81   |
| Sign Control             | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | 120  | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | -    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 52   | 16   | 43   | 0    | 0    | 0    | 0    | 327  | 148  | 291  | 459  | 0    |



















| Major/Minor          | Minor2 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 1464   | 1613  | 489   | -      | 0 | 0 | 572    | 0 | 0 |
| Stage 1              | 1041   | 1041  | -     | -      | - | - | -      | - | - |
| Stage 2              | 423    | 572   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | -      | - | - | 4.12   | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | -      | - | - | 2.218  | - | - |
| Pot Cap-1 Maneuver   | 141    | 104   | 579   | 0      | - | - | 1001   | - | 0 |
| Stage 1              | 340    | 307   | -     | 0      | - | - | -      | - | 0 |
| Stage 2              | 661    | 504   | -     | 0      | - | - | -      | - | 0 |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 99     | 0     | 562   | -      | - | - | 980    | - | - |
| Mov Cap-2 Maneuver   | 99     | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 239    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 661    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 52 | 0  | 4  |
| HCM LOS              | F  |    |    |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL   | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h)      | -   | -   | 99    | 562   | 980   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.606 | 0.091 | 0.297 | -   |
| HCM Control Delay (s) | -   | -   | 86    | 12    | 10.2  | -   |
| HCM Lane LOS          | -   | -   | F     | B     | B     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 2.9   | 0.3   | 1.2   | -   |

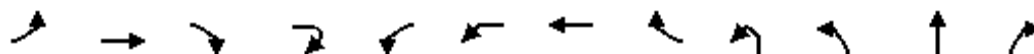
HCM 2010 Signalized Intersection Summary  
28: Broadway & 21st Street

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 35  | 89  | 84  | 23  | 0   | 44  | 0  | 390   | 32  | 40  | 454   | 0   |
| Future Volume (veh/h)        | 35  | 89  | 84  | 23  | 0   | 44  | 0  | 390   | 32  | 40  | 454   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.92  |   | 0.88  | 0.93  |   | 0.88  | 1.00   |   | 0.80  | 0.90  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 0  | 1676  | 1710  | 1710  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 35  | 89  | 75  | 23  | 0   | 14  | 0  | 390   | 23  | 40  | 454   | 0   |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 429   | 223   | 188   | 224   | 16  | 95  | 0  | 1771  | 104   | 158   | 1630  | 0   |
| Arrive On Green              | 0.28  | 0.28  | 0.28  | 0.30  | 0.00  | 0.28  | 0.00   | 1.00  | 1.00  | 0.59  | 0.59  | 0.00  |
| Sat Flow, veh/h              | 1156  | 789   | 665   | 473   | 54  | 321   | 0  | 3093  | 176   | 167   | 2845  | 0   |
| Grp Volume(v), veh/h         | 35  | 0   | 164   | 37  | 0   | 0   | 0  | 205   | 208   | 255   | 239   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1156  | 0   | 1453  | 849   | 0   | 0   | 0  | 1593  | 1592  | 1487  | 1449  | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 6.4   | 0.2   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 5.7   | 0.0   |
| Cycle Q Clear(g_c), s        | 1.6   | 0.0   | 6.4   | 6.6   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 5.2   | 5.7   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.46  | 0.62  |   | 0.38  | 0.00   |   | 0.11  | 0.16  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 429   | 0   | 411   | 336   | 0   | 0   | 0  | 937   | 937   | 934   | 853   | 0   |
| V/C Ratio(X)                 | 0.08  | 0.00  | 0.40  | 0.11  | 0.00  | 0.00  | 0.00   | 0.22  | 0.22  | 0.27  | 0.28  | 0.00  |
| Avail Cap(c_a), veh/h        | 482   | 0   | 478   | 386   | 0   | 0   | 0  | 937   | 937   | 934   | 853   | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 1.00  | 0.99  | 0.00  | 0.00  | 0.00   | 0.96  | 0.96  | 0.98  | 0.98  | 0.00  |
| Uniform Delay (d), s/veh     | 18.6  | 0.0   | 20.4  | 18.3  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 7.0   | 7.1   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.0   | 0.2   | 0.1   | 0.0   | 0.0   | 0.0  | 0.5   | 0.5   | 0.7   | 0.8   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.5   | 0.0   | 2.6   | 0.5   | 0.0   | 0.0   | 0.0  | 0.1   | 0.1   | 2.5   | 2.4   | 0.0   |
| LnGrp Delay(d),s/veh         | 18.6  | 0.0   | 20.6  | 18.3  | 0.0   | 0.0   | 0.0  | 0.5   | 0.5   | 7.7   | 7.9   | 0.0   |
| LnGrp LOS                    | B   |   | C   | B   |   |   |  | A   | A   | A   | A   |   |
| Approach Vol, veh/h          |   | 199   |   |   | 37  |   |  | 413   |   |   | 494   |   |
| Approach Delay, s/veh        |   | 20.3  |   |   | 18.3  |   |  | 0.5   |   |   | 7.8   |   |
| Approach LOS                 |   | C   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 45.2  |   | 24.8  |   | 45.2  |  | 24.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 37.0  |   | 22.5  |   | 37.0  |  | 22.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 8.4   |   | 7.7   |  | 8.6   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.3   |   | 0.9   |   | 4.2   |  | 0.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 7.7   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street

2100 Telegraph  
 Existing Plus Project Conditions AM



| Movement               | EBL  | EBT  | EBR  | EBR2 | WBL2 | WBL  | WBT   | WBR  | NBL2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↙    |      | ↕     |      |      | ↘    | ↕    |      |
| Traffic Volume (vph)   | 27   | 67   | 10   | 24   | 36   | 63   | 5     | 124  | 4    | 8    | 168  | 28   |
| Future Volume (vph)    | 27   | 67   | 10   | 24   | 36   | 63   | 5     | 124  | 4    | 8    | 168  | 28   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      | 4.0   |      |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 0.95 |      | 0.95  |      |      | 1.00 | 0.95 |      |
| Frbp, ped/bikes        |      | 0.99 |      |      | 1.00 |      | 1.00  |      |      | 1.00 | 1.00 |      |
| Flpb, ped/bikes        |      | 1.00 |      |      | 0.98 |      | 0.99  |      |      | 0.98 | 1.00 |      |
| Frt                    |      | 0.96 |      |      | 1.00 |      | 0.91  |      |      | 1.00 | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 0.95 |      | 0.98  |      |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |      | 1579 |      |      | 1481 |      | 1407  |      |      | 1557 | 3117 |      |
| Flt Permitted          |      | 0.91 |      |      | 0.65 |      | 0.87  |      |      | 0.61 | 1.00 |      |
| Satd. Flow (perm)      |      | 1452 |      |      | 1012 |      | 1248  |      |      | 1002 | 3117 |      |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 27   | 67   | 10   | 24   | 36   | 63   | 5     | 124  | 4    | 8    | 168  | 28   |
| RTOR Reduction (vph)   | 0    | 13   | 0    | 0    | 0    | 0    | 93    | 0    | 0    | 0    | 12   | 0    |
| Lane Group Flow (vph)  | 0    | 115  | 0    | 0    | 32   | 0    | 103   | 0    | 0    | 12   | 184  | 0    |
| Confl. Peds. (#/hr)    | 18   |      |      | 31   | 31   |      |       |      |      | 17   |      |      |
| Confl. Bikes (#/hr)    |      |      |      |      |      |      |       |      |      |      |      |      |
| Turn Type              | Perm | NA   |      |      | Perm | Perm | NA    |      | Perm | Perm | NA   |      |
| Protected Phases       |      | 3    |      |      |      |      | 3     |      |      |      | 2    |      |
| Permitted Phases       | 3    |      |      |      | 3    | 3    |       |      | 2    | 2    |      |      |
| Actuated Green, G (s)  |      | 18.9 |      |      | 18.9 |      | 18.9  |      |      | 37.0 | 37.0 |      |
| Effective Green, g (s) |      | 19.9 |      |      | 19.9 |      | 19.9  |      |      | 39.0 | 39.0 |      |
| Actuated g/C Ratio     |      | 0.25 |      |      | 0.25 |      | 0.25  |      |      | 0.49 | 0.49 |      |
| Clearance Time (s)     |      | 5.0  |      |      | 5.0  |      | 5.0   |      |      | 6.0  | 6.0  |      |
| Vehicle Extension (s)  |      | 2.0  |      |      | 2.0  |      | 2.0   |      |      | 2.0  | 2.0  |      |
| Lane Grp Cap (vph)     |      | 361  |      |      | 251  |      | 310   |      |      | 488  | 1519 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |       |      |      |      | 0.06 |      |
| v/s Ratio Perm         |      | 0.08 |      |      | 0.03 |      | c0.08 |      |      | 0.01 |      |      |
| v/c Ratio              |      | 0.32 |      |      | 0.13 |      | 0.33  |      |      | 0.02 | 0.12 |      |
| Uniform Delay, d1      |      | 24.5 |      |      | 23.3 |      | 24.6  |      |      | 10.6 | 11.2 |      |
| Progression Factor     |      | 1.00 |      |      | 1.00 |      | 1.00  |      |      | 0.81 | 0.76 |      |
| Incremental Delay, d2  |      | 0.2  |      |      | 0.1  |      | 0.2   |      |      | 0.1  | 0.2  |      |
| Delay (s)              |      | 24.7 |      |      | 23.4 |      | 24.8  |      |      | 8.7  | 8.7  |      |
| Level of Service       |      | C    |      |      | C    |      | C     |      |      | A    | A    |      |
| Approach Delay (s)     |      | 24.7 |      |      |      |      | 24.6  |      |      |      | 8.7  |      |
| Approach LOS           |      | C    |      |      |      |      | C     |      |      |      | A    |      |

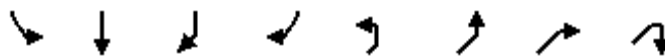
Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 16.9  | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio | 0.27  |                           |      |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 68.4% | ICU Level of Service      | C    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street





















2100 Telegraph  
 Existing Plus Project Conditions AM



| Movement                    | SBL   | SBT  | SBR   | SBR2 | NEL2 | NEL   | NER  | NER2 |
|-----------------------------|-------|------|-------|------|------|-------|------|------|
| Lane Configurations         |       |      |       |      |      |       |      |      |
| Traffic Volume (vph)        | 102   | 225  | 138   | 15   | 2    | 39    | 82   | 2    |
| Future Volume (vph)         | 102   | 225  | 138   | 15   | 2    | 39    | 82   | 2    |
| Ideal Flow (vphpl)          | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0   | 4.0  | 4.0   |      |      | 4.0   |      |      |
| Lane Util. Factor           | 1.00  | 0.95 | 1.00  |      |      | 0.97  |      |      |
| Frbp, ped/bikes             | 1.00  | 1.00 | 0.95  |      |      | 1.00  |      |      |
| Flpb, ped/bikes             | 0.97  | 1.00 | 1.00  |      |      | 0.99  |      |      |
| Frt                         | 1.00  | 1.00 | 0.85  |      |      | 0.90  |      |      |
| Flt Protected               | 0.95  | 1.00 | 1.00  |      |      | 0.98  |      |      |
| Satd. Flow (prot)           | 1546  | 3185 | 1360  |      |      | 2854  |      |      |
| Flt Permitted               | 0.63  | 1.00 | 1.00  |      |      | 0.95  |      |      |
| Satd. Flow (perm)           | 1023  | 3185 | 1360  |      |      | 2754  |      |      |
| Peak-hour factor, PHF       | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 102   | 225  | 138   | 15   | 2    | 39    | 82   | 2    |
| RTOR Reduction (vph)        | 0     | 0    | 11    | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)       | 102   | 225  | 142   | 0    | 0    | 125   | 0    | 0    |
| Confl. Peds. (#/hr)         | 21    |      |       | 17   | 17   |       |      |      |
| Confl. Bikes (#/hr)         |       |      |       | 10   |      |       |      |      |
| Turn Type                   | Perm  | NA   | pm+ov |      | D.Pm | Prot  |      |      |
| Protected Phases            |       | 6    | 4     |      |      | 4     |      |      |
| Permitted Phases            | 6     |      | 6     |      | 4    |       |      |      |
| Actuated Green, G (s)       | 37.0  | 37.0 | 45.1  |      |      | 8.1   |      |      |
| Effective Green, g (s)      | 39.0  | 39.0 | 47.1  |      |      | 9.1   |      |      |
| Actuated g/C Ratio          | 0.49  | 0.49 | 0.59  |      |      | 0.11  |      |      |
| Clearance Time (s)          | 6.0   | 6.0  | 5.0   |      |      | 5.0   |      |      |
| Vehicle Extension (s)       | 2.0   | 2.0  | 2.0   |      |      | 2.0   |      |      |
| Lane Grp Cap (vph)          | 498   | 1552 | 868   |      |      | 313   |      |      |
| v/s Ratio Prot              |       | 0.07 | 0.02  |      |      |       |      |      |
| v/s Ratio Perm              | c0.10 |      | 0.09  |      |      | c0.05 |      |      |
| v/c Ratio                   | 0.20  | 0.14 | 0.16  |      |      | 0.40  |      |      |
| Uniform Delay, d1           | 11.7  | 11.3 | 7.5   |      |      | 32.9  |      |      |
| Progression Factor          | 1.00  | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Incremental Delay, d2       | 0.9   | 0.2  | 0.0   |      |      | 0.3   |      |      |
| Delay (s)                   | 12.6  | 11.5 | 7.5   |      |      | 33.2  |      |      |
| Level of Service            | B     | B    | A     |      |      | C     |      |      |
| Approach Delay (s)          |       | 10.5 |       |      |      | 33.2  |      |      |
| Approach LOS                |       | B    |       |      |      | C     |      |      |
| <b>Intersection Summary</b> |       |      |       |      |      |       |      |      |

















HCM 2010 Signalized Intersection Summary  
 30: Telegraph Avenue & 20th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |   |    |   |  |  |   |
| Traffic Volume (veh/h)       | 115   | 111   | 22  | 7   | 135   | 145   | 8  | 221   | 24  | 162   | 238   | 70  |
| Future Volume (veh/h)        | 115   | 111   | 22  | 7   | 135   | 145   | 8  | 221   | 24  | 162   | 238   | 70  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.79  |   | 0.65  | 0.75  |   | 0.67  | 0.90   |   | 0.89  | 0.97  |   | 0.83  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1676  | 1676   | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 115   | 111   | 8   | 7   | 135   | 62  | 8  | 221   | 18  | 162   | 238   | 58  |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 1   | 1  | 1   | 0   | 1   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 367   | 528   | 38  | 70  | 581   | 341   | 426  | 529   | 43  | 484   | 637   | 155   |
| Arrive On Green              | 0.36  | 0.36  | 0.35  | 0.35  | 0.36  | 0.36  | 0.12   | 0.12  | 0.11  | 0.10  | 0.51  | 0.50  |
| Sat Flow, veh/h              | 836   | 1484  | 107   | 21  | 1635  | 960   | 876  | 1514  | 123   | 1597  | 1245  | 303   |
| Grp Volume(v), veh/h         | 115   | 0   | 119   | 142   | 0   | 62  | 8  | 0   | 239   | 162   | 0   | 296   |
| Grp Sat Flow(s),veh/h/ln     | 836   | 0   | 1591  | 1656  | 0   | 960   | 876  | 0   | 1638  | 1597  | 0   | 1549  |
| Q Serve(g_s), s              | 6.7   | 0.0   | 3.1   | 0.0   | 0.0   | 2.7   | 0.5  | 0.0   | 8.1   | 3.5   | 0.0   | 6.9   |
| Cycle Q Clear(g_c), s        | 10.3  | 0.0   | 3.1   | 3.6   | 0.0   | 2.7   | 0.5  | 0.0   | 8.1   | 3.5   | 0.0   | 6.9   |
| Prop In Lane                 | 1.00  |   | 0.07  | 0.05  |   | 1.00  | 1.00   |   | 0.08  | 1.00  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 367   | 0   | 566   | 638   | 0   | 341   | 426  | 0   | 572   | 484   | 0   | 792   |
| V/C Ratio(X)                 | 0.31  | 0.00  | 0.21  | 0.22  | 0.00  | 0.18  | 0.02   | 0.00  | 0.42  | 0.33  | 0.00  | 0.37  |
| Avail Cap(c_a), veh/h        | 376   | 0   | 583   | 656   | 0   | 352   | 426  | 0   | 572   | 518   | 0   | 792   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33   | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.97  | 0.00  | 0.97  | 0.92  | 0.00  | 0.92  | 1.00   | 0.00  | 1.00  | 1.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     | 17.3  | 0.0   | 13.5  | 13.6  | 0.0   | 13.3  | 17.5   | 0.0   | 20.9  | 10.1  | 0.0   | 8.9   |
| Incr Delay (d2), s/veh       | 0.2   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.1  | 0.0   | 2.2   | 0.1   | 0.0   | 1.4   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.6   | 0.0   | 1.4   | 1.7   | 0.0   | 0.7   | 0.1  | 0.0   | 4.1   | 1.5   | 0.0   | 3.3   |
| LnGrp Delay(d),s/veh         | 17.4  | 0.0   | 13.5  | 13.7  | 0.0   | 13.4  | 17.6   | 0.0   | 23.1  | 10.3  | 0.0   | 10.2  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   | B  |   | C   | B   |   | B   |
| Approach Vol, veh/h          |   | 234   |   |   | 204   |   |  | 247   |   |   | 458   |   |
| Approach Delay, s/veh        |   | 15.5  |   |   | 13.6  |   |  | 22.9  |   |   | 10.3  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 9.7   | 25.0  |   | 25.3  |   | 34.7  |  | 25.3  |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  | 6.5   | 18.5  |   | 21.5  |   | 29.5  |  | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 5.5   | 10.1  |   | 12.3  |   | 8.9   |  | 5.6   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 1.6   |   | 1.6   |   | 2.3   |  | 2.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 14.7  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

















HCM 2010 Signalized Intersection Summary  
 31: Broadway & 20th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 19  | 230   | 60  | 36  | 161   | 83  | 73   | 331   | 53  | 40  | 399   | 70  |
| Future Volume (veh/h)        | 19  | 230   | 60  | 36  | 161   | 83  | 73   | 331   | 53  | 40  | 399   | 70  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.86  |   | 0.79  | 0.88  |   | 0.79  | 1.00   |   | 0.84  | 0.97  |   | 0.70  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1710  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 19  | 230   | 24  | 36  | 161   | 26  | 73   | 331   | 40  | 40  | 399   | 57  |
| Adj No. of Lanes             | 0   | 2   | 0   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 94  | 871   | 87  | 175   | 689   | 111   | 76   | 753   | 123   | 195   | 1770  | 238   |
| Arrive On Green              | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.18   | 0.18  | 0.18  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 107   | 2615  | 262   | 324   | 2069  | 332   | 8  | 1362  | 222   | 238   | 3204  | 431   |
| Grp Volume(v), veh/h         | 145   | 0   | 128   | 116   | 0   | 107   | 185  | 0   | 259   | 166   | 168   | 162   |
| Grp Sat Flow(s),veh/h/ln     | 1589  | 0   | 1395  | 1364  | 0   | 1361  | 154  | 0   | 1439  | 1257  | 1388  | 1228  |
| Q Serve(g_s), s              | 0.0   | 0.0   | 4.7   | 0.0   | 0.0   | 4.0   | 7.1  | 0.0   | 11.0  | 1.3   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 4.4   | 0.0   | 4.7   | 4.8   | 0.0   | 4.0   | 7.1  | 0.0   | 11.0  | 12.3  | 0.0   | 0.0   |
| Prop In Lane                 | 0.13  |   | 0.19  | 0.31  |   | 0.24  | 0.39   |   | 0.15  | 0.24  |   | 0.35  |
| Lane Grp Cap(c), veh/h       | 587   | 0   | 465   | 522   | 0   | 453   | 0  | 0   | 795   | 758   | 767   | 679   |
| V/C Ratio(X)                 | 0.25  | 0.00  | 0.28  | 0.22  | 0.00  | 0.23  | 0.00   | 0.00  | 0.33  | 0.22  | 0.22  | 0.24  |
| Avail Cap(c_a), veh/h        | 635   | 0   | 508   | 563   | 0   | 496   | 0  | 0   | 795   | 758   | 767   | 679   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33   | 0.33  | 0.33  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.96  | 0.00  | 0.96  | 0.98  | 0.00  | 0.98  | 0.96   | 0.00  | 0.96  | 0.96  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     | 17.0  | 0.0   | 17.2  | 16.7  | 0.0   | 16.9  | 0.0  | 0.0   | 17.3  | 0.4   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.0  | 0.0   | 1.0   | 0.6   | 0.6   | 0.8   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.1   | 0.0   | 1.8   | 1.6   | 0.0   | 1.5   | 0.0  | 0.0   | 4.6   | 0.5   | 0.1   | 0.2   |
| LnGrp Delay(d),s/veh         | 17.1  | 0.0   | 17.3  | 16.8  | 0.0   | 17.0  | 0.0  | 0.0   | 18.3  | 1.0   | 0.6   | 0.8   |
| LnGrp LOS                    | B   |   | B   | B   |   | B   |  |   | B   | A   | A   | A   |
| Approach Vol, veh/h          |   | 273   |   |   | 223   |   |  | 444   |   |   | 496   |   |
| Approach Delay, s/veh        |   | 17.2  |   |   | 16.9  |   |  | 10.7  |   |   | 0.8   |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | B   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.2  |   | 26.8  |   | 43.2  |  | 26.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.0   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 36.0  |   | 25.0  |   | 27.0  |  | 25.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 13.0  |   | 6.7   |   | 14.3  |  | 6.8   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 4.6   |   | 2.1   |   | 3.7   |  | 2.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 9.5   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 32: Brush Street & 18th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |   |  |   |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 140   | 110   | 0   | 0  | 0   | 0   | 0   | 2719  | 198   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 140   | 110   | 0   | 0  | 0   | 0   | 0   | 2719  | 198   |
| Number                       |   |   |   | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 1.00  |  |   |   | 1.00  |   | 0.96  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 0   |  |   |   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 140   | 110   | 0   |  |   |   | 0   | 2719  | 189   |
| Adj No. of Lanes             |   |   |   | 1   | 2   | 0   |  |   |   | 0   | 4   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 0   |  |   |   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 371   | 581   | 0   |  |   |   | 0   | 3537  | 243   |
| Arrive On Green              |   |   |   | 0.18  | 0.18  | 0.00  |  |   |   | 0.00  | 0.64  | 0.62  |
| Sat Flow, veh/h              |   |   |   | 1597  | 3269  | 0   |  |   |   | 0   | 5771  | 381   |
| Grp Volume(v), veh/h         |   |   |   | 140   | 110   | 0   |  |   |   | 0   | 2119  | 789   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1593  | 0   |  |   |   | 0   | 1442  | 1592  |
| Q Serve(g_s), s              |   |   |   | 7.1   | 2.6   | 0.0   |  |   |   | 0.0   | 31.2  | 32.2  |
| Cycle Q Clear(g_c), s        |   |   |   | 7.1   | 2.6   | 0.0   |  |   |   | 0.0   | 31.2  | 32.2  |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.00  |  |   |   | 0.00  |   | 0.24  |
| Lane Grp Cap(c), veh/h       |   |   |   | 371   | 581   | 0   |  |   |   | 0   | 2763  | 1017  |
| V/C Ratio(X)                 |   |   |   | 0.38  | 0.19  | 0.00  |  |   |   | 0.00  | 0.77  | 0.78  |
| Avail Cap(c_a), veh/h        |   |   |   | 515   | 867   | 0   |  |   |   | 0   | 2763  | 1017  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 0.89  | 0.89  | 0.00  |  |   |   | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 33.0  | 31.2  | 0.0   |  |   |   | 0.0   | 11.5  | 11.9  |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.1   | 0.0   |  |   |   | 0.0   | 2.1   | 5.8   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 3.1   | 1.2   | 0.0   |  |   |   | 0.0   | 12.7  | 15.5  |
| LnGrp Delay(d),s/veh         |   |   |   | 33.2  | 31.2  | 0.0   |  |   |   | 0.0   | 13.6  | 17.7  |
| LnGrp LOS                    |   |   |   | C   | C   |   |  |   |   |   | B   | B   |
| Approach Vol, veh/h          |   |   |   |   | 250   |   |  |   |   |   | 2908  |   |
| Approach Delay, s/veh        |   |   |   |   | 32.3  |   |  |   |   |   | 14.7  |   |
| Approach LOS                 |   |   |   |   | C   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   |   |   | 61.5  |  | 20.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   |   |   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   |   |   | 55.5  |  | 24.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   |   |   | 34.2  |  | 9.1   |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   |   |   | 16.5  |  | 0.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 16.1  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 33: Castro Street & 18th Street & I-980 NB On-Ramp

2100 Telegraph  
 Existing Plus Project Conditions AM



| Movement               | WBT   | WBR  | WBR2 | NBL2  | NBL   | NBT   |
|------------------------|-------|------|------|-------|-------|-------|
| Lane Configurations    | ↑↑    | ↔    |      | ↔     | ↔     | ↑↑↑   |
| Traffic Volume (vph)   | 140   | 209  | 21   | 110   | 169   | 835   |
| Future Volume (vph)    | 140   | 209  | 21   | 110   | 169   | 835   |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900  |
| Total Lost time (s)    | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0   |
| Lane Util. Factor      | 0.91  | 0.91 |      | 0.86  | 0.81  | 0.81  |
| Frbp, ped/bikes        | 0.98  | 0.96 |      | 1.00  | 1.00  | 1.00  |
| Flpb, ped/bikes        | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00  |
| Frt                    | 0.93  | 0.85 |      | 1.00  | 1.00  | 1.00  |
| Flt Protected          | 1.00  | 1.00 |      | 0.95  | 0.95  | 1.00  |
| Satd. Flow (prot)      | 2799  | 1248 |      | 1370  | 1290  | 4070  |
| Flt Permitted          | 1.00  | 1.00 |      | 0.95  | 0.95  | 1.00  |
| Satd. Flow (perm)      | 2799  | 1248 |      | 1370  | 1290  | 4070  |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)        | 140   | 209  | 21   | 110   | 169   | 835   |
| RTOR Reduction (vph)   | 0     | 20   | 0    | 0     | 0     | 0     |
| Lane Group Flow (vph)  | 253   | 97   | 0    | 99    | 163   | 852   |
| Confl. Peds. (#/hr)    |       | 8    |      |       |       |       |
| Confl. Bikes (#/hr)    |       | 10   |      |       |       |       |
| Turn Type              | NA    | Perm |      | Split | Split | NA    |
| Protected Phases       | 8     |      |      | 2     | 2     | 2     |
| Permitted Phases       |       | 8    |      |       |       |       |
| Actuated Green, G (s)  | 13.0  | 13.0 |      | 67.5  | 67.5  | 67.5  |
| Effective Green, g (s) | 13.5  | 13.5 |      | 68.5  | 68.5  | 68.5  |
| Actuated g/C Ratio     | 0.15  | 0.15 |      | 0.76  | 0.76  | 0.76  |
| Clearance Time (s)     | 4.5   | 4.5  |      | 5.0   | 5.0   | 5.0   |
| Vehicle Extension (s)  | 2.0   | 2.0  |      | 2.0   | 2.0   | 2.0   |
| Lane Grp Cap (vph)     | 419   | 187  |      | 1042  | 981   | 3097  |
| v/s Ratio Prot         | c0.09 |      |      | 0.07  | 0.13  | c0.21 |
| v/s Ratio Perm         |       | 0.08 |      |       |       |       |
| v/c Ratio              | 0.60  | 0.52 |      | 0.10  | 0.17  | 0.28  |
| Uniform Delay, d1      | 35.8  | 35.2 |      | 2.8   | 2.9   | 3.2   |
| Progression Factor     | 1.00  | 1.00 |      | 0.27  | 0.54  | 0.23  |
| Incremental Delay, d2  | 1.7   | 1.0  |      | 0.1   | 0.4   | 0.2   |
| Delay (s)              | 37.4  | 36.2 |      | 0.9   | 1.9   | 0.9   |
| Level of Service       | D     | D    |      | A     | A     | A     |
| Approach Delay (s)     | 37.1  |      |      |       |       | 1.1   |
| Approach LOS           | D     |      |      |       |       | A     |

Intersection Summary



















|                                   |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 10.0  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.33  |                           |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 37.0% | ICU Level of Service      | A   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group



HCM 2010 Signalized Intersection Summary  
 34: MLK Jr. Way & 18th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 20  | 288   | 3   | 29   | 125   | 0   | 0   | 144   | 78  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 20  | 288   | 3   | 29   | 125   | 0   | 0   | 144   | 78  |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.97  | 0.99   |   | 1.00  | 1.00  |   | 0.97  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 20  | 288   | 1   | 29   | 125   | 0   | 0   | 144   | 48  |
| Adj No. of Lanes             |   |   |   | 1   | 3   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 639   | 1883  | 7   | 282  | 1162  | 0   | 0   | 1123  | 359   |
| Arrive On Green              |   |   |   | 0.40  | 0.40  | 0.41  | 0.48   | 0.48  | 0.00  | 0.00  | 0.48  | 0.49  |
| Sat Flow, veh/h              |   |   |   | 1597  | 4708  | 16  | 433  | 2514  | 0   | 0   | 2439  | 752   |
| Grp Volume(v), veh/h         |   |   |   | 20  | 187   | 102   | 82   | 72  | 0   | 0   | 95  | 97  |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1526  | 1673  | 1421   | 1449  | 0   | 0   | 1593  | 1515  |
| Q Serve(g_s), s              |   |   |   | 0.5   | 2.5   | 2.5   | 0.0  | 1.8   | 0.0   | 0.0   | 2.2   | 2.3   |
| Cycle Q Clear(g_c), s        |   |   |   | 0.5   | 2.5   | 2.5   | 1.7  | 1.8   | 0.0   | 0.0   | 2.2   | 2.3   |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.01  | 0.35   |   | 0.00  | 0.00  |   | 0.50  |
| Lane Grp Cap(c), veh/h       |   |   |   | 639   | 1220  | 669   | 753  | 691   | 0   | 0   | 760   | 723   |
| V/C Ratio(X)                 |   |   |   | 0.03  | 0.15  | 0.15  | 0.11   | 0.10  | 0.00  | 0.00  | 0.13  | 0.13  |
| Avail Cap(c_a), veh/h        |   |   |   | 639   | 1220  | 669   | 753  | 691   | 0   | 0   | 760   | 723   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 11.8  | 12.5  | 12.5  | 9.3  | 9.4   | 0.0   | 0.0   | 9.5   | 9.4   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.3   | 0.5   | 0.3  | 0.3   | 0.0   | 0.0   | 0.3   | 0.4   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.2   | 1.1   | 1.3   | 0.9  | 0.8   | 0.0   | 0.0   | 1.0   | 1.0   |
| LnGrp Delay(d),s/veh         |   |   |   | 11.9  | 12.7  | 12.9  | 9.6  | 9.7   | 0.0   | 0.0   | 9.8   | 9.7   |
| LnGrp LOS                    |   |   |   | B   | B   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 309   |   |  | 154   |   |   | 192   |   |
| Approach Delay, s/veh        |   |   |   |   | 12.7  |   |  | 9.7   |   |   | 9.8   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 35.0  |   |   |   | 35.0  |  | 30.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 3.0   |   |   |   | 3.0   |  | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   |   |   | 32.0  |  | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 3.8   |   |   |   | 4.3   |  | 4.5   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.1   |   |   |   | 2.2   |  | 1.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.1  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 35: Jefferson Street & San Pablo Avenue & 19th Street

2100 Telegraph  
 Existing Plus Project Conditions AM



| Movement               | WBL2 | WBL  | WBT  | WBR  | NBL2 | NBL  | NBT  | SBT   | SBR  | SBR2 | NEL2 | NEL  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↖    | ↑    | ↑↑    |      |      |      | ↗↘   |
| Traffic Volume (vph)   | 44   | 22   | 270  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| Future Volume (vph)    | 44   | 22   | 270  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      | 4.0  |      |      | 4.0  | 4.0  | 4.0   |      |      |      | 4.0  |
| Lane Util. Factor      |      |      | 0.95 |      |      | 1.00 | 1.00 | 0.95  |      |      |      | 0.97 |
| Frbp, ped/bikes        |      |      | 0.99 |      |      | 1.00 | 1.00 | 0.98  |      |      |      | 1.00 |
| Flpb, ped/bikes        |      |      | 1.00 |      |      | 0.97 | 1.00 | 1.00  |      |      |      | 1.00 |
| Frt                    |      |      | 0.98 |      |      | 1.00 | 1.00 | 0.96  |      |      |      | 1.00 |
| Flt Protected          |      |      | 0.99 |      |      | 0.95 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (prot)      |      |      | 3067 |      |      | 1550 | 1676 | 3006  |      |      |      | 3088 |
| Flt Permitted          |      |      | 0.99 |      |      | 0.59 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (perm)      |      |      | 3067 |      |      | 959  | 1676 | 3006  |      |      |      | 3088 |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 44   | 22   | 270  | 54   | 4    | 12   | 77   | 197   | 46   | 23   | 13   | 53   |
| RTOR Reduction (vph)   | 0    | 0    | 18   | 0    | 0    | 0    | 0    | 7     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 372  | 0    | 0    | 16   | 77   | 259   | 0    | 0    | 0    | 68   |
| Confl. Peds. (#/hr)    |      | 17   |      | 30   |      | 24   |      |       | 24   |      |      |      |
| Confl. Bikes (#/hr)    |      |      |      | 4    |      |      |      |       | 48   |      |      |      |
| Turn Type              | Perm | Perm | NA   |      | Perm | Perm | NA   | NA    |      |      | Perm | Prot |
| Protected Phases       |      |      | 4    |      |      |      | 2    | 6     |      |      |      | 3    |
| Permitted Phases       | 4    | 4    |      |      | 2    | 2    |      |       |      |      | 3    |      |
| Actuated Green, G (s)  |      |      | 20.6 |      |      | 37.6 | 37.6 | 37.6  |      |      |      | 5.3  |
| Effective Green, g (s) |      |      | 21.6 |      |      | 40.1 | 40.1 | 40.1  |      |      |      | 6.3  |
| Actuated g/C Ratio     |      |      | 0.27 |      |      | 0.50 | 0.50 | 0.50  |      |      |      | 0.08 |
| Clearance Time (s)     |      |      | 5.0  |      |      | 6.5  | 6.5  | 6.5   |      |      |      | 5.0  |
| Vehicle Extension (s)  |      |      | 2.0  |      |      | 2.0  | 2.0  | 2.0   |      |      |      | 2.0  |
| Lane Grp Cap (vph)     |      |      | 828  |      |      | 480  | 840  | 1506  |      |      |      | 243  |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.05 | c0.09 |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.12 |      |      | 0.02 |      |       |      |      |      | 0.02 |
| v/c Ratio              |      |      | 0.45 |      |      | 0.03 | 0.09 | 0.17  |      |      |      | 0.28 |
| Uniform Delay, d1      |      |      | 24.3 |      |      | 10.1 | 10.4 | 10.9  |      |      |      | 34.7 |
| Progression Factor     |      |      | 1.00 |      |      | 1.00 | 1.00 | 0.47  |      |      |      | 1.00 |
| Incremental Delay, d2  |      |      | 0.1  |      |      | 0.1  | 0.2  | 0.2   |      |      |      | 0.2  |
| Delay (s)              |      |      | 24.4 |      |      | 10.2 | 10.6 | 5.4   |      |      |      | 34.9 |
| Level of Service       |      |      | C    |      |      | B    | B    | A     |      |      |      | C    |
| Approach Delay (s)     |      |      | 24.4 |      |      |      | 10.6 | 5.4   |      |      |      | 34.9 |
| Approach LOS           |      |      | C    |      |      |      | B    | A     |      |      |      | C    |

| Intersection Summary              |       |                             |
|-----------------------------------|-------|-----------------------------|
| HCM 2000 Control Delay            | 17.5  | HCM 2000 Level of Service B |
| HCM 2000 Volume to Capacity ratio | 0.27  |                             |
| Actuated Cycle Length (s)         | 80.0  | Sum of lost time (s) 12.0   |
| Intersection Capacity Utilization | 47.8% | ICU Level of Service A      |
| Analysis Period (min)             | 15    |                             |


















c Critical Lane Group



|                        |      |
|------------------------|------|
| Movement               | NER2 |
| Lane Configurations    |      |
| Traffic Volume (vph)   | 2    |
| Future Volume (vph)    | 2    |
| Ideal Flow (vphpl)     | 1900 |
| Total Lost time (s)    |      |
| Lane Util. Factor      |      |
| Frbp, ped/bikes        |      |
| Flpb, ped/bikes        |      |
| Frt                    |      |
| Flt Protected          |      |
| Satd. Flow (prot)      |      |
| Flt Permitted          |      |
| Satd. Flow (perm)      |      |
| Peak-hour factor, PHF  | 1.00 |
| Adj. Flow (vph)        | 2    |
| RTOR Reduction (vph)   | 0    |
| Lane Group Flow (vph)  | 0    |
| Confl. Peds. (#/hr)    |      |
| Confl. Bikes (#/hr)    |      |
| Turn Type              |      |
| Protected Phases       |      |
| Permitted Phases       |      |
| Actuated Green, G (s)  |      |
| Effective Green, g (s) |      |
| Actuated g/C Ratio     |      |
| Clearance Time (s)     |      |
| Vehicle Extension (s)  |      |
| Lane Grp Cap (vph)     |      |
| v/s Ratio Prot         |      |
| v/s Ratio Perm         |      |
| v/c Ratio              |      |
| Uniform Delay, d1      |      |
| Progression Factor     |      |
| Incremental Delay, d2  |      |
| Delay (s)              |      |
| Level of Service       |      |
| Approach Delay (s)     |      |
| Approach LOS           |      |
| Intersection Summary   |      |
















HCM 2010 Signalized Intersection Summary  
 36: Telegraph Avenue & 19th Street

2100 Telegraph  
 Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 24  | 178   | 114   | 100  | 125   | 0   | 0   | 138   | 96  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 24  | 178   | 114   | 100  | 125   | 0   | 0   | 138   | 96  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.78  | 0.97   |   | 1.00  | 1.00  |   | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 0   | 0   | 1710  | 1676  | 1710  | 1676   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 0   | 0   | 0   | 24  | 178   | 37  | 100  | 125   | 0   | 0   | 138   | 70  |
| Adj No. of Lanes             | 1   | 0   | 0   | 0   | 2   | 0   | 1  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 0   | 0   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   | 0   | 0   | 0   | 107   | 797   | 167   | 536  | 673   | 0   | 0   | 405   | 205   |
| Arrive On Green              | 0.00  | 0.00  | 0.00  | 0.35  | 0.35  | 0.33  | 0.40   | 0.40  | 0.00  | 0.00  | 0.40  | 0.34  |
| Sat Flow, veh/h              |   | 0   |   | 309   | 2302  | 482   | 1016   | 1676  | 0   | 0   | 1010  | 512   |
| Grp Volume(v), veh/h         |   | 0.0   |   | 129   | 0   | 110   | 100  | 125   | 0   | 0   | 0   | 208   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1661  | 0   | 1431  | 1016   | 1676  | 0   | 0   | 0   | 1522  |
| Q Serve(g_s), s              |   |   |   | 1.7   | 0.0   | 1.7   | 2.4  | 1.5   | 0.0   | 0.0   | 0.0   | 3.1   |
| Cycle Q Clear(g_c), s        |   |   |   | 1.7   | 0.0   | 1.7   | 5.5  | 1.5   | 0.0   | 0.0   | 0.0   | 3.1   |
| Prop In Lane                 |   |   |   | 0.19  |   | 0.34  | 1.00   |   | 0.00  | 0.00  |   | 0.34  |
| Lane Grp Cap(c), veh/h       |   |   |   | 575   | 0   | 496   | 536  | 673   | 0   | 0   | 0   | 610   |
| V/C Ratio(X)                 |   |   |   | 0.22  | 0.00  | 0.22  | 0.19   | 0.19  | 0.00  | 0.00  | 0.00  | 0.34  |
| Avail Cap(c_a), veh/h        |   |   |   | 1075  | 0   | 926   | 1315   | 1958  | 0   | 0   | 0   | 1777  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 1.00   | 1.00  | 0.00  | 0.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 7.3   | 0.0   | 7.4   | 8.5  | 6.1   | 0.0   | 0.0   | 0.0   | 6.8   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.0   | 0.1   | 0.1  | 0.0   | 0.0   | 0.0   | 0.0   | 0.1   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.8   | 0.0   | 0.7   | 0.7  | 0.7   | 0.0   | 0.0   | 0.0   | 1.3   |
| LnGrp Delay(d),s/veh         |   |   |   | 7.4   | 0.0   | 7.5   | 8.6  | 6.2   | 0.0   | 0.0   | 0.0   | 7.0   |
| LnGrp LOS                    |   |   |   | A   |   | A   | A  | A   |   |   |   | A   |
| Approach Vol, veh/h          |   |   |   |   | 239   |   |  | 225   |   |   | 208   |   |
| Approach Delay, s/veh        |   |   |   |   | 7.4   |   |  | 7.3   |   |   | 7.0   |   |
| Approach LOS                 |   |   |   |   | A   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 16.7  |   |   |   | 16.7  |  | 15.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   |   |   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |  | 20.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 7.5   |   |   |   | 5.1   |  | 3.7   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.1   |   |   |   | 2.1   |  | 0.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 7.2   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
37: Broadway & 19th Street

2100 Telegraph  
Existing Plus Project Conditions AM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 18  | 168   | 51  | 82   | 402   | 0   | 0   | 431   | 65  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 18  | 168   | 51  | 82   | 402   | 0   | 0   | 431   | 65  |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.80  | 0.97   |   | 1.00  | 1.00  |   | 0.89  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 18  | 168   | 13  | 82   | 402   | 0   | 0   | 431   | 58  |
| Adj No. of Lanes             |   |   |   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 0   | 2   | 0   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 93  | 895   | 71  | 281  | 1295  | 0   | 0   | 2250  | 292   |
| Arrive On Green              |   |   |   | 0.33  | 0.33  | 0.32  | 1.00   | 1.00  | 0.00  | 0.00  | 0.74  | 0.73  |
| Sat Flow, veh/h              |   |   |   | 284   | 2733  | 218   | 379  | 2397  | 0   | 0   | 4183  | 524   |
| Grp Volume(v), veh/h         |   |   |   | 105   | 0   | 94  | 236  | 248   | 0   | 0   | 322   | 167   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1662  | 0   | 1573  | 1250   | 1449  | 0   | 0   | 1526  | 1505  |
| Q Serve(g_s), s              |   |   |   | 3.2   | 0.0   | 3.0   | 0.0  | 0.0   | 0.0   | 0.0   | 2.2   | 2.4   |
| Cycle Q Clear(g_c), s        |   |   |   | 3.2   | 0.0   | 3.0   | 0.0  | 0.0   | 0.0   | 0.0   | 2.2   | 2.4   |
| Prop In Lane                 |   |   |   | 0.17  |   | 0.14  | 0.35   |   | 0.00  | 0.00  |   | 0.35  |
| Lane Grp Cap(c), veh/h       |   |   |   | 545   | 0   | 515   | 767  | 809   | 0   | 0   | 1703  | 840   |
| V/C Ratio(X)                 |   |   |   | 0.19  | 0.00  | 0.18  | 0.31   | 0.31  | 0.00  | 0.00  | 0.19  | 0.20  |
| Avail Cap(c_a), veh/h        |   |   |   | 653   | 0   | 618   | 767  | 809   | 0   | 0   | 1703  | 840   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 1.00  | 1.00  | 1.33  | 1.33  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.94   | 0.94  | 0.00  | 0.00  | 0.98  | 0.98  |
| Uniform Delay (d), s/veh     |   |   |   | 16.9  | 0.0   | 16.9  | 0.0  | 0.0   | 0.0   | 0.0   | 4.3   | 4.3   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.0   | 0.1   | 1.0  | 0.9   | 0.0   | 0.0   | 0.2   | 0.5   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 1.5   | 0.0   | 1.3   | 0.2  | 0.2   | 0.0   | 0.0   | 1.0   | 1.1   |
| LnGrp Delay(d),s/veh         |   |   |   | 17.0  | 0.0   | 16.9  | 1.0  | 0.9   | 0.0   | 0.0   | 4.5   | 4.9   |
| LnGrp LOS                    |   |   |   | B   |   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 199   |   |  | 484   |   |   | 489   |   |
| Approach Delay, s/veh        |   |   |   |   | 16.9  |   |  | 1.0   |   |   | 4.6   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.6  |   |   |   | 43.6  |  | 26.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   |   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 34.0  |   |   |   | 34.0  |  | 27.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   |   |   | 4.4   |  | 5.2   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.1   |   |   |   | 5.0   |  | 0.7   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   |   | 5.2   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   |   | A   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 38: Brush Street & I-980 Westbound On-ramp & 17th Street

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| Movement               | EBT   | EBR  | EBR2 | SBL2  | SBL   | SBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    |      |      | ↵     | ↵     | ↑↑   |
| Traffic Volume (vph)   | 192   | 30   | 64   | 1317  | 513   | 1029 |
| Future Volume (vph)    | 192   | 30   | 64   | 1317  | 513   | 1029 |
| Ideal Flow (vphpl)     | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.95  |      |      | 0.91  | 0.86  | 0.86 |
| Frbp, ped/bikes        | 0.99  |      |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  |      |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.95  |      |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 0.95  | 0.99 |
| Satd. Flow (prot)      | 3009  |      |      | 1449  | 1370  | 2855 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 0.95  | 0.99 |
| Satd. Flow (perm)      | 3009  |      |      | 1449  | 1370  | 2855 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 192   | 30   | 64   | 1317  | 513   | 1029 |
| RTOR Reduction (vph)   | 33    | 0    | 0    | 86    | 68    | 0    |
| Lane Group Flow (vph)  | 253   | 0    | 0    | 638   | 781   | 1286 |
| Confl. Bikes (#/hr)    |       | 5    |      |       |       |      |
| Turn Type              | NA    |      |      | Split | Split | NA   |
| Protected Phases       | 4     |      |      | 6     | 6     | 6    |
| Permitted Phases       |       |      |      |       |       |      |
| Actuated Green, G (s)  | 12.5  |      |      | 68.0  | 68.0  | 68.0 |
| Effective Green, g (s) | 13.0  |      |      | 69.0  | 69.0  | 69.0 |
| Actuated g/C Ratio     | 0.14  |      |      | 0.77  | 0.77  | 0.77 |
| Clearance Time (s)     | 4.5   |      |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   |      |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 434   |      |      | 1110  | 1050  | 2188 |
| v/s Ratio Prot         | c0.08 |      |      | 0.44  | c0.57 | 0.45 |
| v/s Ratio Perm         |       |      |      |       |       |      |
| v/c Ratio              | 0.58  |      |      | 0.58  | 0.74  | 0.59 |
| Uniform Delay, d1      | 36.0  |      |      | 4.4   | 5.7   | 4.5  |
| Progression Factor     | 1.00  |      |      | 0.27  | 0.61  | 0.13 |
| Incremental Delay, d2  | 1.3   |      |      | 1.5   | 3.5   | 0.8  |
| Delay (s)              | 37.3  |      |      | 2.7   | 7.0   | 1.4  |
| Level of Service       | D     |      |      | A     | A     | A    |
| Approach Delay (s)     | 37.3  |      |      |       |       | 3.4  |
| Approach LOS           | D     |      |      |       |       | A    |

Intersection Summary

|                                   |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 6.5   | HCM 2000 Level of Service | A   |
| HCM 2000 Volume to Capacity ratio | 0.72  |                           |     |
| Actuated Cycle Length (s)         | 90.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 61.3% | ICU Level of Service      | B   |
| Analysis Period (min)             | 15    |                           |     |
| c Critical Lane Group             |       |                           |     |

HCM Signalized Intersection Capacity Analysis  
 39: I-980 Eastbound Off-ramp & Castro Street & 17th Street



















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| Movement                          | EBL   | EBT   | NBT   | NBR  | NEL                       | NER  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|
| Lane Configurations               |       |       |       |      |                           |      |
| Traffic Volume (vph)              | 237   | 1272  | 382   | 35   | 495                       | 180  |
| Future Volume (vph)               | 237   | 1272  | 382   | 35   | 495                       | 180  |
| Ideal Flow (vphp)                 | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   | 4.0   |      | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 0.91  | 0.91  |      | 0.97                      |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Frt                               | 1.00  | 1.00  | 0.99  |      | 0.96                      |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (prot)                 | 1593  | 4577  | 4512  |      | 3012                      |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (perm)                 | 1593  | 4577  | 4512  |      | 3012                      |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 237   | 1272  | 382   | 35   | 495                       | 180  |
| RTOR Reduction (vph)              | 78    | 0     | 14    | 0    | 0                         | 0    |
| Lane Group Flow (vph)             | 159   | 1272  | 403   | 0    | 675                       | 0    |
| Confl. Peds. (#/hr)               |       |       |       | 6    |                           |      |
| Confl. Bikes (#/hr)               |       |       |       |      |                           |      |
| Turn Type                         | Split | NA    | NA    |      | Prot                      |      |
| Protected Phases                  | 4     | 4     | 2     |      | 1                         |      |
| Permitted Phases                  |       |       |       |      |                           |      |
| Actuated Green, G (s)             | 41.6  | 41.6  | 13.4  |      | 20.5                      |      |
| Effective Green, g (s)            | 42.1  | 42.1  | 14.4  |      | 21.5                      |      |
| Actuated g/C Ratio                | 0.47  | 0.47  | 0.16  |      | 0.24                      |      |
| Clearance Time (s)                | 4.5   | 4.5   | 5.0   |      | 5.0                       |      |
| Vehicle Extension (s)             | 2.0   | 2.0   | 2.0   |      | 2.0                       |      |
| Lane Grp Cap (vph)                | 745   | 2141  | 721   |      | 719                       |      |
| v/s Ratio Prot                    | 0.10  | c0.28 | c0.09 |      | c0.22                     |      |
| v/s Ratio Perm                    |       |       |       |      |                           |      |
| v/c Ratio                         | 0.21  | 0.59  | 0.56  |      | 0.94                      |      |
| Uniform Delay, d1                 | 14.2  | 17.7  | 34.9  |      | 33.6                      |      |
| Progression Factor                | 0.64  | 0.85  | 1.00  |      | 1.00                      |      |
| Incremental Delay, d2             | 0.5   | 0.9   | 0.5   |      | 19.6                      |      |
| Delay (s)                         | 9.6   | 15.9  | 35.4  |      | 53.2                      |      |
| Level of Service                  | A     | B     | D     |      | D                         |      |
| Approach Delay (s)                |       | 14.9  | 35.4  |      | 53.2                      |      |
| Approach LOS                      |       | B     | D     |      | D                         |      |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |
| HCM 2000 Control Delay            |       |       | 28.1  |      | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.68  |      |                           |      |
| Actuated Cycle Length (s)         |       |       | 90.0  |      | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization |       |       | 69.8% |      | ICU Level of Service      | C    |
| Analysis Period (min)             |       |       | 15    |      |                           |      |
| c Critical Lane Group             |       |       |       |      |                           |      |

HCM 2010 Signalized Intersection Summary  
 1: Northgate Avenue/1-980 SB Off Ramp & 27th Street


















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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |  |  |  |
| Traffic Volume (veh/h)       | 0   | 459   | 38  | 17  | 258   | 0   | 0  | 0   | 0   | 560   | 502   | 261   |
| Future Volume (veh/h)        | 0   | 459   | 38  | 17  | 258   | 0   | 0  | 0   | 0   | 560   | 502   | 261   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.96  | 0.99  |   | 1.00  |  |   |   | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 0   | 1676  | 1710  | 1676  | 1676  | 0   |  |   |   | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 0   | 459   | 30  | 17  | 258   | 0   |  |   |   | 592   | 457   | 132   |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 2   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 2   | 2   | 2   | 0   |  |   |   | 2   | 2   | 2   |
| Cap, veh/h                   | 0   | 1192  | 78  | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| Arrive On Green              | 0.00  | 0.39  | 0.36  | 0.39  | 0.39  | 0.00  |  |   |   | 0.51  | 0.51  | 0.51  |
| Sat Flow, veh/h              | 0   | 3111  | 197   | 808   | 3269  | 0   |  |   |   | 3193  | 1676  | 1425  |
| Grp Volume(v), veh/h         | 0   | 241   | 248   | 17  | 258   | 0   |  |   |   | 592   | 457   | 132   |
| Grp Sat Flow(s),veh/h/ln     | 0   | 1593  | 1632  | 808   | 1593  | 0   |  |   |   | 1597  | 1676  | 1425  |
| Q Serve(g_s), s              | 0.0   | 8.6   | 8.7   | 1.2   | 4.3   | 0.0   |  |   |   | 9.0   | 14.8  | 4.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 8.6   | 8.7   | 10.0  | 4.3   | 0.0   |  |   |   | 9.0   | 14.8  | 4.0   |
| Prop In Lane                 | 0.00  |   | 0.12  | 1.00  |   | 0.00  |  |   |   | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 0   | 627   | 643   | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| V/C Ratio(X)                 | 0.00  | 0.38  | 0.39  | 0.05  | 0.21  | 0.00  |  |   |   | 0.37  | 0.54  | 0.18  |
| Avail Cap(c_a), veh/h        | 0   | 627   | 643   | 320   | 1254  | 0   |  |   |   | 1617  | 849   | 721   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 0.0   | 17.3  | 17.5  | 20.9  | 16.0  | 0.0   |  |   |   | 12.0  | 13.4  | 10.7  |
| Incr Delay (d2), s/veh       | 0.0   | 1.8   | 1.8   | 0.3   | 0.4   | 0.0   |  |   |   | 0.6   | 2.4   | 0.6   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.0   | 4.1   | 4.3   | 0.3   | 1.9   | 0.0   |  |   |   | 4.1   | 7.3   | 1.7   |
| LnGrp Delay(d),s/veh         | 0.0   | 19.1  | 19.2  | 21.2  | 16.4  | 0.0   |  |   |   | 12.6  | 15.9  | 11.3  |
| LnGrp LOS                    |   | B   | B   | C   | B   |   |  |   |   | B   | B   | B   |
| Approach Vol, veh/h          |   | 489   |   |   | 275   |   |  |   |   |   | 1181  |   |
| Approach Delay, s/veh        |   | 19.2  |   |   | 16.7  |   |  |   |   |   | 13.7  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   | 35.5  |   | 44.5  |  | 35.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   | 6.5   |   | 5.5   |  | 6.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   | 29.0  |   | 39.0  |  | 29.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   | 10.7  |   | 16.8  |  | 12.0  |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   | 4.6   |   | 9.0   |  | 4.5   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 15.5  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

























HCM 2010 Signalized Intersection Summary  
 2: Northgate Avenue/I-980 NB On Ramp & 27th Street

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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |  |  |   |   |   |   |
| Traffic Volume (veh/h)       | 175   | 844   | 0   | 0   | 238   | 501   | 37   | 626   | 91  | 0   | 0   | 0   |
| Future Volume (veh/h)        | 175   | 844   | 0   | 0   | 238   | 501   | 37   | 626   | 91  | 0   | 0   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  |   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   |   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.97  | 1.00   |   | 1.00  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 0   | 1676  | 1676  | 1710   | 1676  | 1710  |   |   |   |
| Adj Flow Rate, veh/h         | 175   | 844   | 0   | 0   | 238   | 301   | 37   | 626   | 65  |   |   |   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 2   | 0  | 3   | 0   |   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 0   | 2   | 2   | 0  | 2   | 0   |   |   |   |
| Cap, veh/h                   | 230   | 1823  | 0   | 0   | 1115  | 850   | 82   | 1468  | 156   |   |   |   |
| Arrive On Green              | 0.29  | 1.00  | 0.00  | 0.00  | 0.35  | 0.35  | 0.36   | 0.36  | 0.34  |   |   |   |
| Sat Flow, veh/h              | 1597  | 3353  | 0   | 0   | 3269  | 2428  | 230  | 4120  | 439   |   |   |   |
| Grp Volume(v), veh/h         | 175   | 844   | 0   | 0   | 238   | 301   | 268  | 223   | 237   |   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1676  | 0   | 0   | 1593  | 1214  | 1665   | 1526  | 1599  |   |   |   |
| Q Serve(g_s), s              | 8.0   | 0.0   | 0.0   | 0.0   | 4.2   | 7.4   | 9.9  | 8.8   | 9.0   |   |   |   |
| Cycle Q Clear(g_c), s        | 8.0   | 0.0   | 0.0   | 0.0   | 4.2   | 7.4   | 9.9  | 8.8   | 9.0   |   |   |   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.00  |   | 1.00  | 0.14   |   | 0.27  |   |   |   |
| Lane Grp Cap(c), veh/h       | 230   | 1823  | 0   | 0   | 1115  | 850   | 593  | 543   | 569   |   |   |   |
| V/C Ratio(X)                 | 0.76  | 0.46  | 0.00  | 0.00  | 0.21  | 0.35  | 0.45   | 0.41  | 0.42  |   |   |   |
| Avail Cap(c_a), veh/h        | 230   | 1823  | 0   | 0   | 1115  | 850   | 593  | 543   | 569   |   |   |   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |   |   |   |
| Uniform Delay (d), s/veh     | 27.3  | 0.0   | 0.0   | 0.0   | 18.3  | 19.3  | 19.8   | 19.4  | 19.6  |   |   |   |
| Incr Delay (d2), s/veh       | 21.0  | 0.8   | 0.0   | 0.0   | 0.4   | 1.2   | 2.5  | 2.3   | 2.2   |   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |   |   |   |
| %ile BackOfQ(50%),veh/ln     | 4.8   | 0.2   | 0.0   | 0.0   | 1.9   | 2.6   | 5.0  | 4.1   | 4.3   |   |   |   |
| LnGrp Delay(d),s/veh         | 48.3  | 0.8   | 0.0   | 0.0   | 18.7  | 20.4  | 22.2   | 21.7  | 21.9  |   |   |   |
| LnGrp LOS                    | D   | A   |   |   | B   | C   | C  | C   | C   |   |   |   |
| Approach Vol, veh/h          |   | 1019  |   |   | 539   |   |  | 728   |   |   |   |   |
| Approach Delay, s/veh        |   | 9.0   |   |   | 19.7  |   |  | 22.0  |   |   |   |   |
| Approach LOS                 |   | A   |   |   | B   |   |  | C   |   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   |   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 32.5  |   | 47.5  |   |   | 15.5   | 32.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   |   | 5.5   |   |   | 3.5  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   | 42.0  |   |   | 12.0   | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 11.9  |   | 2.0   |   |   | 10.0   | 9.4   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.8   |   | 2.3   |   |   | 0.0  | 2.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 15.6  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

























HCM 2010 Signalized Intersection Summary  
 3: Telegraph Avenue & 27th Street

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 128   | 529   | 107   | 51  | 348   | 88  | 160  | 362   | 49  | 90  | 353   | 246   |
| Future Volume (veh/h)        | 128   | 529   | 107   | 51  | 348   | 88  | 160  | 362   | 49  | 90  | 353   | 246   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.91  | 1.00  |   | 0.91  | 0.99   |   | 0.92  | 0.99  |   | 0.94  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676   | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 128   | 529   | 107   | 51  | 348   | 88  | 160  | 362   | 24  | 90  | 353   | 121   |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1  | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 165   | 688   | 138   | 75  | 517   | 128   | 432  | 917   | 719   | 458   | 917   | 734   |
| Arrive On Green              | 0.10  | 0.26  | 0.27  | 0.02  | 0.07  | 0.07  | 0.55   | 0.55  | 0.55  | 0.55  | 0.55  | 0.55  |
| Sat Flow, veh/h              | 1597  | 2597  | 522   | 1597  | 2478  | 613   | 816  | 1676  | 1314  | 883   | 1676  | 1342  |
| Grp Volume(v), veh/h         | 128   | 323   | 313   | 51  | 221   | 215   | 160  | 362   | 24  | 90  | 353   | 121   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 1526  | 1597  | 1593  | 1498  | 816  | 1676  | 1314  | 883   | 1676  | 1342  |
| Q Serve(g_s), s              | 6.6   | 15.9  | 16.1  | 2.7   | 11.5  | 11.9  | 11.9   | 10.6  | 0.7   | 5.6   | 10.3  | 3.8   |
| Cycle Q Clear(g_c), s        | 6.6   | 15.9  | 16.1  | 2.7   | 11.5  | 11.9  | 22.2   | 10.6  | 0.7   | 16.2  | 10.3  | 3.8   |
| Prop In Lane                 | 1.00  |   | 0.34  | 1.00  |   | 0.41  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 165   | 422   | 404   | 75  | 332   | 313   | 432  | 917   | 719   | 458   | 917   | 734   |
| V/C Ratio(X)                 | 0.78  | 0.77  | 0.77  | 0.68  | 0.67  | 0.69  | 0.37   | 0.39  | 0.03  | 0.20  | 0.39  | 0.16  |
| Avail Cap(c_a), veh/h        | 207   | 422   | 404   | 207   | 412   | 388   | 432  | 917   | 719   | 458   | 917   | 734   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.13  | 0.13  | 0.13  | 0.94  | 0.94  | 0.94  | 0.95   | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     | 37.1  | 28.8  | 28.8  | 41.2  | 36.7  | 36.8  | 17.4   | 11.1  | 8.9   | 15.8  | 11.1  | 9.6   |
| Incr Delay (d2), s/veh       | 1.5   | 1.1   | 1.2   | 3.7   | 1.5   | 2.1   | 2.3  | 1.2   | 0.1   | 1.0   | 1.2   | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 3.0   | 7.1   | 6.9   | 1.3   | 5.2   | 5.1   | 2.9  | 5.1   | 0.3   | 1.5   | 5.0   | 1.5   |
| LnGrp Delay(d),s/veh         | 38.6  | 29.9  | 30.0  | 44.9  | 38.2  | 38.9  | 19.7   | 12.3  | 9.0   | 16.8  | 12.3  | 10.1  |
| LnGrp LOS                    | D   | C   | C   | D   | D   | D   | B  | B   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 764   |   |   | 487   |   |  | 546   |   |   | 564   |   |
| Approach Delay, s/veh        |   | 31.4  |   |   | 39.2  |   |  | 14.4  |   |   | 12.5  |   |
| Approach LOS                 |   | C   |   |   | D   |   |  | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 50.5  | 8.0   | 26.5  |   | 50.5  | 12.8   | 21.7  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.5   | 4.5   | 3.5   |   | 5.5   | 4.5  | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.5  | 10.5  | 22.5  |   | 38.5  | 10.5   | 22.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 24.2  | 4.7   | 18.1  |   | 18.2  | 8.6  | 13.9  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.1   | 0.0   | 2.0   |   | 5.9   | 0.1  | 2.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 24.6  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |













HCM 2010 Signalized Intersection Summary  
4: Broadway & 27th Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |   |  |  |   |  |   |   |  |  |   |  |
|------------------------------|---|--|---|---|--|---|---|--|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |   | <br> |  |  | <br> |   |  | <br> |   |
| Traffic Volume (veh/h)       | 178   | 315  | 153   | 49  | 236  | 205   | 134   | 661  | 26  | 149   | 590  | 109   |
| Future Volume (veh/h)        | 178   | 315  | 153   | 49  | 236  | 205   | 134   | 661  | 26  | 149   | 590  | 109   |
| Number                       | 7   | 4  | 14  | 3   | 8  | 18  | 5   | 2  | 12  | 1   | 6  | 16  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 0.98  |  | 0.96  | 0.99  |  | 1.00  | 0.99  |  | 0.91  | 0.98  |  | 0.93  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1710  | 1676   | 1676  | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 178   | 315  | 76  | 49  | 236  | 0   | 134   | 661  | 23  | 149   | 590  | 93  |
| Adj No. of Lanes             | 1   | 2  | 0   | 0   | 2  | 1   | 1   | 2  | 0   | 1   | 2  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   | 2   | 2  | 2   |
| Cap, veh/h                   | 355   | 877  | 208   | 167   | 743  | 494   | 363   | 1695   | 59  | 446   | 1479   | 232   |
| Arrive On Green              | 0.11  | 0.11   | 0.11  | 0.35  | 0.35   | 0.00  | 1.00  | 1.00   | 1.00  | 0.54  | 0.54   | 0.53  |
| Sat Flow, veh/h              | 1010  | 2532   | 600   | 314   | 2146   | 1425  | 671   | 3128   | 109   | 667   | 2729   | 429   |
| Grp Volume(v), veh/h         | 178   | 196  | 195   | 129   | 156  | 0   | 134   | 336  | 348   | 149   | 343  | 340   |
| Grp Sat Flow(s),veh/h/ln     | 1010  | 1593   | 1539  | 1010  | 1449   | 1425  | 671   | 1593   | 1644  | 667   | 1593   | 1565  |
| Q Serve(g_s), s              | 14.5  | 9.7  | 10.0  | 2.7   | 6.7  | 0.0   | 6.3   | 0.0  | 0.0   | 11.2  | 10.7   | 10.8  |
| Cycle Q Clear(g_c), s        | 21.2  | 9.7  | 10.0  | 12.6  | 6.7  | 0.0   | 17.2  | 0.0  | 0.0   | 11.2  | 10.7   | 10.8  |
| Prop In Lane                 | 1.00  |  | 0.39  | 0.38  |  | 1.00  | 1.00  |  | 0.07  | 1.00  |  | 0.27  |
| Lane Grp Cap(c), veh/h       | 355   | 552  | 533   | 408   | 502  | 494   | 363   | 863  | 891   | 446   | 863  | 848   |
| V/C Ratio(X)                 | 0.50  | 0.36   | 0.37  | 0.32  | 0.31   | 0.00  | 0.37  | 0.39   | 0.39  | 0.33  | 0.40   | 0.40  |
| Avail Cap(c_a), veh/h        | 403   | 628  | 607   | 468   | 571  | 562   | 363   | 863  | 891   | 446   | 863  | 848   |
| HCM Platoon Ratio            | 0.33  | 0.33   | 0.33  | 1.00  | 1.00   | 1.00  | 2.00  | 2.00   | 2.00  | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.77  | 0.77   | 0.77  | 0.80  | 0.80   | 0.00  | 0.96  | 0.96   | 0.96  | 1.00  | 1.00   | 1.00  |
| Uniform Delay (d), s/veh     | 37.2  | 28.9   | 29.1  | 21.5  | 20.4   | 0.0   | 2.0   | 0.0  | 0.0   | 11.5  | 11.4   | 11.5  |
| Incr Delay (d2), s/veh       | 0.3   | 0.1  | 0.1   | 0.1   | 0.1  | 0.0   | 2.8   | 1.3  | 1.2   | 2.0   | 1.4  | 1.4   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 4.1   | 4.3  | 4.3   | 2.4   | 2.7  | 0.0   | 1.4   | 0.3  | 0.3   | 2.3   | 5.0  | 5.0   |
| LnGrp Delay(d),s/veh         | 37.6  | 29.0   | 29.2  | 21.6  | 20.5   | 0.0   | 4.8   | 1.3  | 1.2   | 13.5  | 12.7   | 12.9  |
| LnGrp LOS                    | D   | C  | C   | C   | C  |   | A   | A  | A   | B   | B  | B   |
| Approach Vol, veh/h          |   | 569  |   |   | 285  |   |   | 818  |   |   | 832  |   |
| Approach Delay, s/veh        |   | 31.7   |   |   | 21.0   |   |   | 1.8  |   |   | 12.9   |   |
| Approach LOS                 |   | C  |   |   | C  |   |   | A  |   |   | B  |   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7   | 8  |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  | 6   |   | 8  |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 51.1   |   | 33.9  |  | 51.1  |   | 33.9   |   |   |  |   |
| Change Period (Y+Rc), s      |   | 6.0  |   | 5.5   |  | 6.0   |   | 5.5  |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 41.0   |   | 32.5  |  | 41.0  |   | 32.5   |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 19.2   |   | 23.2  |  | 13.2  |   | 14.6   |   |   |  |   |
| Green Ext Time (p_c), s      |   | 9.7  |   | 2.8   |  | 10.8  |   | 3.7  |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |   |  |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 14.5  |  |   |   |  |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | B   |  |   |   |  |   |   |  |   |


















HCM 2010 Signalized Intersection Summary  
5: Telegraph Avenue & 26th Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | WBL   | WBR   | NBT   | NBR   | SBL   | SBT   |   |   |
| Lane Configurations          |  |  |  |  |  |  |   |   |
| Traffic Volume (veh/h)       | 12  | 31  | 537   | 26  | 18  | 482   |   |   |
| Future Volume (veh/h)        | 12  | 31  | 537   | 26  | 18  | 482   |   |   |
| Number                       | 7   | 14  | 2   | 12  | 1   | 6   |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  |   | 0.91  | 0.98  |   |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1676  |   |   |
| Adj Flow Rate, veh/h         | 12  | 1   | 537   | 23  | 18  | 482   |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 1   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 34  | 22  | 1512  | 1159  | 761   | 1512  |   |   |
| Arrive On Green              | 0.02  | 0.02  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 1676  | 1293  | 749   | 1676  |   |   |
| Grp Volume(v), veh/h         | 12  | 1   | 537   | 23  | 18  | 482   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 1676  | 1293  | 749   | 1676  |   |   |
| Q Serve(g_s), s              | 0.6   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.6   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  |   | 1.00  | 1.00  |   |   |   |
| Lane Grp Cap(c), veh/h       | 34  | 22  | 1512  | 1159  | 761   | 1512  |   |   |
| V/C Ratio(X)                 | 0.35  | 0.05  | 0.36  | 0.02  | 0.02  | 0.32  |   |   |
| Avail Cap(c_a), veh/h        | 432   | 377   | 1512  | 1159  | 761   | 1512  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 1.33  | 1.33  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.91  | 0.91  | 0.92  | 0.92  |   |   |
| Uniform Delay (d), s/veh     | 41.0  | 41.2  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 2.3   | 0.3   | 0.6   | 0.0   | 0.1   | 0.5   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 0.0   | 0.2   | 0.0   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 43.3  | 41.5  | 0.6   | 0.0   | 0.1   | 0.5   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   | A   | A   |   |   |
| Approach Vol, veh/h          | 13  |   | 560   |   |   | 500   |   |   |
| Approach Delay, s/veh        | 43.1  |   | 0.6   |   |   | 0.5   |   |   |
| Approach LOS                 | D   |   | A   |   |   | A   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.7  |   | 5.3   |   | 79.7  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 55.0  |   | 22.5  |   | 55.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.6   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 2.9   |   | 0.0   |   | 2.9   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.1   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
6: Broadway & 26th Street

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|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |   |   |  |  |   |  |  |   |
| Traffic Volume (veh/h)       | 6   | 10  | 21  | 0   | 0   | 0   | 33  | 811   | 20  | 30  | 747   | 24  |
| Future Volume (veh/h)        | 6   | 10  | 21  | 0   | 0   | 0   | 33  | 811   | 20  | 30  | 747   | 24  |
| Number                       | 7   | 4   | 14  |   |   |   | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.93  |   |   |   | 0.98  |   | 0.89  | 0.98  |   | 0.92  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 6   | 10  | 1   |   |   |   | 33  | 811   | 19  | 30  | 747   | 23  |
| Adj No. of Lanes             | 0   | 1   | 0   |   |   |   | 1   | 2   | 0   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 2   | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 52  | 87  | 9   |   |   |   | 575   | 2528  | 59  | 549   | 2508  | 77  |
| Arrive On Green              | 0.09  | 0.09  | 0.08  |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              | 573   | 955   | 95  |   |   |   | 615   | 3170  | 74  | 583   | 3145  | 97  |
| Grp Volume(v), veh/h         | 17  | 0   | 0   |   |   |   | 33  | 407   | 423   | 30  | 378   | 392   |
| Grp Sat Flow(s),veh/h/ln     | 1623  | 0   | 0   |   |   |   | 615   | 1593  | 1652  | 583   | 1593  | 1649  |
| Q Serve(g_s), s              | 0.8   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.8   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 | 0.35  |   | 0.06  |   |   |   | 1.00  |   | 0.04  | 1.00  |   | 0.06  |
| Lane Grp Cap(c), veh/h       | 147   | 0   | 0   |   |   |   | 575   | 1270  | 1317  | 549   | 1270  | 1315  |
| V/C Ratio(X)                 | 0.12  | 0.00  | 0.00  |   |   |   | 0.06  | 0.32  | 0.32  | 0.05  | 0.30  | 0.30  |
| Avail Cap(c_a), veh/h        | 706   | 0   | 0   |   |   |   | 575   | 1270  | 1317  | 549   | 1270  | 1315  |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 0.00  |   |   |   | 0.94  | 0.94  | 0.94  | 0.92  | 0.92  | 0.92  |
| Uniform Delay (d), s/veh     | 35.5  | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.0   |   |   |   | 0.2   | 0.6   | 0.6   | 0.2   | 0.6   | 0.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.0   | 0.0   |   |   |   | 0.0   | 0.2   | 0.2   | 0.0   | 0.2   | 0.2   |
| LnGrp Delay(d),s/veh         | 35.6  | 0.0   | 0.0   |   |   |   | 0.2   | 0.6   | 0.6   | 0.2   | 0.6   | 0.5   |
| LnGrp LOS                    | D   |   |   |   |   |   | A   | A   | A   | A   | A   | A   |
| Approach Vol, veh/h          |   | 17  |   |   |   |   |   | 863   |   |   | 800   |   |
| Approach Delay, s/veh        |   | 35.6  |   |   |   |   |   | 0.6   |   |   | 0.5   |   |
| Approach LOS                 |   | D   |   |   |   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 72.3  |   | 12.7  |   | 72.3  |   |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |   |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 36.5  |   | 38.0  |   |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.8   |   | 2.0   |   |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.1   |   | 0.0   |   | 5.1   |   |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 0.9   |   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |   |   |   |   |

# HCM Signalized Intersection Capacity Analysis

## 7: 25th Street & Broadway












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| Movement                          | EBL  | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT   | NBR  | SBL   | SBT                       | SBR  |
|-----------------------------------|------|-------|-------|------|------|------|------|-------|------|-------|---------------------------|------|
| Lane Configurations               |      | ↗     |       |      |      | ↖    |      | ↕     | ↗    | ↖     | ↕                         |      |
| Traffic Volume (vph)              | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 700   | 17   | 235   | 523                       | 27   |
| Future Volume (vph)               | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 700   | 17   | 235   | 523                       | 27   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 2.5   |       |      |      | 4.0  |      | 4.5   |      | 1.5   | 4.5                       |      |
| Lane Util. Factor                 |      | 1.00  |       |      |      | 1.00 |      | 0.95  |      | 1.00  | 0.95                      |      |
| Frbp, ped/bikes                   |      | 0.91  |       |      |      | 1.00 |      | 0.99  |      | 1.00  | 0.99                      |      |
| Flpb, ped/bikes                   |      | 1.00  |       |      |      | 1.00 |      | 1.00  |      | 1.00  | 1.00                      |      |
| Frt                               |      | 0.93  |       |      |      | 0.86 |      | 1.00  |      | 1.00  | 0.99                      |      |
| Flt Protected                     |      | 1.00  |       |      |      | 1.00 |      | 1.00  |      | 0.95  | 1.00                      |      |
| Satd. Flow (prot)                 |      | 1416  |       |      |      | 1450 |      | 3145  |      | 1593  | 3127                      |      |
| Flt Permitted                     |      | 1.00  |       |      |      | 1.00 |      | 0.93  |      | 0.95  | 1.00                      |      |
| Satd. Flow (perm)                 |      | 1416  |       |      |      | 1450 |      | 2938  |      | 1593  | 3127                      |      |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 0    | 21    | 21    | 0    | 0    | 151  | 21   | 700   | 17   | 235   | 523                       | 27   |
| RTOR Reduction (vph)              | 0    | 20    | 0     | 0    | 0    | 111  | 0    | 2     | 0    | 0     | 3                         | 0    |
| Lane Group Flow (vph)             | 0    | 22    | 0     | 0    | 0    | 40   | 0    | 736   | 0    | 235   | 547                       | 0    |
| Confl. Peds. (#/hr)               | 1    |       | 34    | 34   |      | 1    | 102  |       | 92   |       |                           | 102  |
| Confl. Bikes (#/hr)               |      |       | 2     |      |      |      |      |       | 81   |       |                           | 20   |
| Turn Type                         |      | NA    |       |      |      | Prot | Perm | NA    |      | Prot  | NA                        |      |
| Protected Phases                  |      | 4     |       |      |      | 8    |      | 2     |      | 3     | 6                         |      |
| Permitted Phases                  |      |       |       |      |      |      | 2    |       |      |       |                           |      |
| Actuated Green, G (s)             |      | 3.7   |       |      |      | 20.3 |      | 55.2  |      | 16.1  | 55.2                      |      |
| Effective Green, g (s)            |      | 4.2   |       |      |      | 20.8 |      | 55.7  |      | 16.6  | 55.7                      |      |
| Actuated g/C Ratio                |      | 0.05  |       |      |      | 0.24 |      | 0.66  |      | 0.20  | 0.66                      |      |
| Clearance Time (s)                |      | 3.0   |       |      |      | 4.5  |      | 5.0   |      | 2.0   | 5.0                       |      |
| Vehicle Extension (s)             |      | 2.0   |       |      |      | 2.0  |      | 2.0   |      | 2.0   | 2.0                       |      |
| Lane Grp Cap (vph)                |      | 69    |       |      |      | 354  |      | 1925  |      | 311   | 2049                      |      |
| v/s Ratio Prot                    |      | c0.02 |       |      |      | 0.03 |      |       |      | c0.15 | 0.17                      |      |
| v/s Ratio Perm                    |      |       |       |      |      |      |      | c0.25 |      |       |                           |      |
| v/c Ratio                         |      | 0.32  |       |      |      | 0.11 |      | 0.38  |      | 0.76  | 0.27                      |      |
| Uniform Delay, d1                 |      | 39.0  |       |      |      | 24.9 |      | 6.7   |      | 32.3  | 6.1                       |      |
| Progression Factor                |      | 1.00  |       |      |      | 1.00 |      | 0.48  |      | 0.98  | 0.64                      |      |
| Incremental Delay, d2             |      | 1.0   |       |      |      | 0.1  |      | 0.5   |      | 8.7   | 0.3                       |      |
| Delay (s)                         |      | 40.0  |       |      |      | 25.0 |      | 3.8   |      | 40.4  | 4.2                       |      |
| Level of Service                  |      | D     |       |      |      | C    |      | A     |      | D     | A                         |      |
| Approach Delay (s)                |      | 40.0  |       |      | 25.0 |      |      | 3.8   |      |       | 15.0                      |      |
| Approach LOS                      |      | D     |       |      | C    |      |      | A     |      |       | B                         |      |
| <b>Intersection Summary</b>       |      |       |       |      |      |      |      |       |      |       |                           |      |
| HCM 2000 Control Delay            |      |       | 11.7  |      |      |      |      |       |      |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |       | 0.45  |      |      |      |      |       |      |       |                           |      |
| Actuated Cycle Length (s)         |      |       | 85.0  |      |      |      |      |       |      |       | Sum of lost time (s)      | 8.5  |
| Intersection Capacity Utilization |      |       | 56.2% |      |      |      |      |       |      |       | ICU Level of Service      | B    |
| Analysis Period (min)             |      |       | 15    |      |      |      |      |       |      |       |                           |      |
| c Critical Lane Group             |      |       |       |      |      |      |      |       |      |       |                           |      |

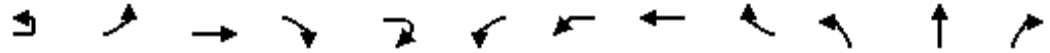
HCM 2010 Signalized Intersection Summary  
 8: Telegraph Avenue & 24th Street

2100 Telegraph  
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|                              |  |  |  |  |  |  |   |   |
|------------------------------|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBR   | NBL   | NBT   | SBT   | SBR   |   |   |
| Lane Configurations          |  |  |  |  |  |   |   |   |
| Traffic Volume (veh/h)       | 16  | 22  | 22  | 541   | 442   | 12  |   |   |
| Future Volume (veh/h)        | 16  | 22  | 22  | 541   | 442   | 12  |   |   |
| Number                       | 7   | 14  | 5   | 2   | 6   | 16  |   |   |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00  | 1.00  | 0.96  |   |   | 0.90  |   |   |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1676  | 1676  | 1676  | 1710  |   |   |
| Adj Flow Rate, veh/h         | 16  | 4   | 22  | 541   | 442   | 11  |   |   |
| Adj No. of Lanes             | 1   | 1   | 1   | 1   | 1   | 0   |   |   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |   |   |
| Cap, veh/h                   | 45  | 32  | 810   | 1501  | 1454  | 36  |   |   |
| Arrive On Green              | 0.03  | 0.02  | 1.00  | 1.00  | 1.00  | 1.00  |   |   |
| Sat Flow, veh/h              | 1597  | 1425  | 810   | 1676  | 1623  | 40  |   |   |
| Grp Volume(v), veh/h         | 16  | 4   | 22  | 541   | 0   | 453   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1425  | 810   | 1676  | 0   | 1664  |   |   |
| Q Serve(g_s), s              | 0.8   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Cycle Q Clear(g_c), s        | 0.8   | 0.2   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Prop In Lane                 | 1.00  | 1.00  | 1.00  |   |   | 0.02  |   |   |
| Lane Grp Cap(c), veh/h       | 45  | 32  | 810   | 1501  | 0   | 1490  |   |   |
| V/C Ratio(X)                 | 0.36  | 0.13  | 0.03  | 0.36  | 0.00  | 0.30  |   |   |
| Avail Cap(c_a), veh/h        | 451   | 394   | 810   | 1501  | 0   | 1490  |   |   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00  |   |   |
| Upstream Filter(I)           | 1.00  | 1.00  | 0.88  | 0.88  | 0.00  | 0.96  |   |   |
| Uniform Delay (d), s/veh     | 40.6  | 40.8  | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Incr Delay (d2), s/veh       | 1.8   | 0.7   | 0.1   | 0.6   | 0.0   | 0.5   |   |   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.1   | 0.0   | 0.2   | 0.0   | 0.2   |   |   |
| LnGrp Delay(d),s/veh         | 42.3  | 41.4  | 0.1   | 0.6   | 0.0   | 0.5   |   |   |
| LnGrp LOS                    | D   | D   | A   | A   |   | A   |   |   |
| Approach Vol, veh/h          | 20  |   |   | 563   | 453   |   |   |   |
| Approach Delay, s/veh        | 42.2  |   |   | 0.6   | 0.5   |   |   |   |
| Approach LOS                 | D   |   |   | A   | A   |   |   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7 | 8 |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 79.1  |   | 5.9   |   | 79.1  |   |   |
| Change Period (Y+Rc), s      |   | 3.5   |   | 4.0   |   | 3.5   |   |   |
| Max Green Setting (Gmax), s  |   | 54.0  |   | 23.5  |   | 54.0  |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 2.8   |   | 2.0   |   |   |
| Green Ext Time (p_c), s      |   | 2.7   |   | 0.0   |   | 2.7   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 1.3   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

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| Movement                          | EBU  | EBL   | EBT   | EBR  | EBR2                      | WBL2 | WBL   | WBT  | WBR  | NBL  | NBT   | NBR  |  |
|-----------------------------------|------|-------|-------|------|---------------------------|------|-------|------|------|------|-------|------|--|
| Lane Configurations               |      | ↔     | ↕     | ↔    |                           |      | ↔     | ↕    | ↔    | ↕    | ↕     | ↕    |  |
| Traffic Volume (vph)              | 13   | 236   | 366   | 87   | 24                        | 58   | 19    | 156  | 183  | 255  | 853   | 103  |  |
| Future Volume (vph)               | 13   | 236   | 366   | 87   | 24                        | 58   | 19    | 156  | 183  | 255  | 853   | 103  |  |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900  | 1900 | 1900                      | 1900 | 1900  | 1900 | 1900 | 1900 | 1900  | 1900 |  |
| Total Lost time (s)               |      | 4.0   | 4.0   | 4.0  |                           |      | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   |      |  |
| Lane Util. Factor                 |      | 1.00  | 0.95  | 1.00 |                           |      | 1.00  | 1.00 | 1.00 | 0.97 | 0.95  |      |  |
| Frbp, ped/bikes                   |      | 1.00  | 1.00  | 0.79 |                           |      | 1.00  | 1.00 | 0.79 | 1.00 | 0.97  |      |  |
| Flpb, ped/bikes                   |      | 1.00  | 1.00  | 1.00 |                           |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  |      |  |
| Frt                               |      | 1.00  | 1.00  | 0.85 |                           |      | 1.00  | 1.00 | 0.85 | 1.00 | 0.98  |      |  |
| Flt Protected                     |      | 0.95  | 1.00  | 1.00 |                           |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  |      |  |
| Satd. Flow (prot)                 |      | 1593  | 3185  | 1121 |                           |      | 1593  | 1676 | 1133 | 3090 | 3027  |      |  |
| Flt Permitted                     |      | 0.95  | 1.00  | 1.00 |                           |      | 0.95  | 1.00 | 1.00 | 0.95 | 1.00  |      |  |
| Satd. Flow (perm)                 |      | 1593  | 3185  | 1121 |                           |      | 1593  | 1676 | 1133 | 3090 | 3027  |      |  |
| Peak-hour factor, PHF             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 |  |
| Adj. Flow (vph)                   | 13   | 236   | 366   | 87   | 24                        | 58   | 19    | 156  | 183  | 255  | 853   | 103  |  |
| RTOR Reduction (vph)              | 0    | 0     | 0     | 94   | 0                         | 0    | 0     | 0    | 140  | 0    | 6     | 0    |  |
| Lane Group Flow (vph)             | 0    | 249   | 366   | 17   | 0                         | 0    | 77    | 156  | 43   | 255  | 950   | 0    |  |
| Confl. Peds. (#/hr)               |      |       |       | 56   |                           |      |       |      | 75   |      |       | 164  |  |
| Confl. Bikes (#/hr)               |      |       |       | 44   |                           |      |       |      | 18   |      |       | 25   |  |
| Turn Type                         | Prot | Prot  | NA    | Perm |                           | Prot | Prot  | NA   | Perm | Prot | NA    |      |  |
| Protected Phases                  | 7    | 7     | 4     |      |                           | 3    | 3     | 8    |      | 5    | 2     |      |  |
| Permitted Phases                  |      |       |       | 4    |                           |      |       |      | 8    |      |       |      |  |
| Actuated Green, G (s)             |      | 23.2  | 20.2  | 20.2 |                           |      | 7.0   | 32.2 | 32.2 | 16.3 | 51.8  |      |  |
| Effective Green, g (s)            |      | 24.2  | 21.2  | 21.2 |                           |      | 8.0   | 33.2 | 33.2 | 17.3 | 52.8  |      |  |
| Actuated g/C Ratio                |      | 0.17  | 0.15  | 0.15 |                           |      | 0.06  | 0.24 | 0.24 | 0.12 | 0.38  |      |  |
| Clearance Time (s)                |      | 5.0   | 5.0   | 5.0  |                           |      | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   |      |  |
| Vehicle Extension (s)             |      | 3.0   | 3.0   | 3.0  |                           |      | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   |      |  |
| Lane Grp Cap (vph)                |      | 275   | 482   | 169  |                           |      | 91    | 397  | 268  | 381  | 1141  |      |  |
| v/s Ratio Prot                    |      | c0.16 | c0.11 |      |                           |      | c0.05 | 0.09 |      | 0.08 | c0.31 |      |  |
| v/s Ratio Perm                    |      |       |       | 0.01 |                           |      |       |      | 0.04 |      |       |      |  |
| v/c Ratio                         |      | 0.91  | 0.76  | 0.10 |                           |      | 0.85  | 0.39 | 0.16 | 0.67 | 0.83  |      |  |
| Uniform Delay, d1                 |      | 56.8  | 57.0  | 51.2 |                           |      | 65.4  | 44.9 | 42.4 | 58.6 | 39.6  |      |  |
| Progression Factor                |      | 1.00  | 1.00  | 1.00 |                           |      | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  |      |  |
| Incremental Delay, d2             |      | 30.6  | 6.8   | 0.3  |                           |      | 47.9  | 0.6  | 0.3  | 4.4  | 7.2   |      |  |
| Delay (s)                         |      | 87.4  | 63.7  | 51.4 |                           |      | 113.2 | 45.6 | 42.6 | 63.0 | 46.7  |      |  |
| Level of Service                  |      | F     | E     | D    |                           |      | F     | D    | D    | E    | D     |      |  |
| Approach Delay (s)                |      |       | 70.0  |      |                           |      |       | 56.8 |      |      | 50.2  |      |  |
| Approach LOS                      |      |       | E     |      |                           |      |       | E    |      |      | D     |      |  |
| <b>Intersection Summary</b>       |      |       |       |      |                           |      |       |      |      |      |       |      |  |
| HCM 2000 Control Delay            |      |       | 55.6  |      | HCM 2000 Level of Service |      |       |      |      | E    |       |      |  |
| HCM 2000 Volume to Capacity ratio |      |       | 0.83  |      |                           |      |       |      |      |      |       |      |  |
| Actuated Cycle Length (s)         |      |       | 140.0 |      | Sum of lost time (s)      |      |       |      |      | 20.0 |       |      |  |
| Intersection Capacity Utilization |      |       | 81.1% |      | ICU Level of Service      |      |       |      |      | D    |       |      |  |
| Analysis Period (min)             |      |       | 15    |      |                           |      |       |      |      |      |       |      |  |
| c Critical Lane Group             |      |       |       |      |                           |      |       |      |      |      |       |      |  |



HCM Signalized Intersection Capacity Analysis  
 9: 24th St & Harrison Street & 27th Street

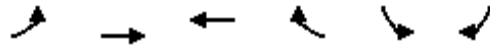
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| Movement                    | SBL   | SBT  | SBR  | SBR2 |
|-----------------------------|-------|------|------|------|
| Lane Configurations         | ↶     | ↷    |      |      |
| Traffic Volume (vph)        | 131   | 352  | 46   | 71   |
| Future Volume (vph)         | 131   | 352  | 46   | 71   |
| Ideal Flow (vphpl)          | 1900  | 1900 | 1900 | 1900 |
| Total Lost time (s)         | 4.0   | 4.0  |      |      |
| Lane Util. Factor           | 1.00  | 0.95 |      |      |
| Frbp, ped/bikes             | 1.00  | 0.94 |      |      |
| Flpb, ped/bikes             | 1.00  | 1.00 |      |      |
| Frt                         | 1.00  | 0.96 |      |      |
| Flt Protected               | 0.95  | 1.00 |      |      |
| Satd. Flow (prot)           | 1593  | 2891 |      |      |
| Flt Permitted               | 0.95  | 1.00 |      |      |
| Satd. Flow (perm)           | 1593  | 2891 |      |      |
| Peak-hour factor, PHF       | 1.00  | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)             | 131   | 352  | 46   | 71   |
| RTOR Reduction (vph)        | 0     | 10   | 0    | 0    |
| Lane Group Flow (vph)       | 131   | 459  | 0    | 0    |
| Confl. Peds. (#/hr)         |       |      |      | 104  |
| Confl. Bikes (#/hr)         |       |      | 44   | 44   |
| Turn Type                   | Prot  | NA   |      |      |
| Protected Phases            | 1     | 6    |      |      |
| Permitted Phases            |       |      |      |      |
| Actuated Green, G (s)       | 12.8  | 48.3 |      |      |
| Effective Green, g (s)      | 13.8  | 49.3 |      |      |
| Actuated g/C Ratio          | 0.10  | 0.35 |      |      |
| Clearance Time (s)          | 5.0   | 5.0  |      |      |
| Vehicle Extension (s)       | 3.0   | 3.0  |      |      |
| Lane Grp Cap (vph)          | 157   | 1018 |      |      |
| v/s Ratio Prot              | c0.08 | 0.16 |      |      |
| v/s Ratio Perm              |       |      |      |      |
| v/c Ratio                   | 0.83  | 0.45 |      |      |
| Uniform Delay, d1           | 62.0  | 34.9 |      |      |
| Progression Factor          | 1.00  | 1.00 |      |      |
| Incremental Delay, d2       | 30.0  | 1.4  |      |      |
| Delay (s)                   | 92.0  | 36.4 |      |      |
| Level of Service            | F     | D    |      |      |
| Approach Delay (s)          |       | 48.5 |      |      |
| Approach LOS                |       | D    |      |      |
| <b>Intersection Summary</b> |       |      |      |      |

HCM 2010 Signalized Intersection Summary  
 10: Grand Avenue & Northgate Avenue























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| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |   |
|------------------------------|------|------|------|------|------|------|---|---|
| Lane Configurations          |      |      |      |      |      |      |   |   |
| Traffic Volume (veh/h)       | 175  | 821  | 635  | 398  | 276  | 95   |   |   |
| Future Volume (veh/h)        | 175  | 821  | 635  | 398  | 276  | 95   |   |   |
| Number                       | 5    | 2    | 6    | 16   | 7    | 14   |   |   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |   |
| Ped-Bike Adj(A_pbT)          | 1.00 |      |      | 0.90 | 1.00 | 1.00 |   |   |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1710 | 1676 | 1676 |   |   |
| Adj Flow Rate, veh/h         | 175  | 821  | 635  | 343  | 276  | 17   |   |   |
| Adj No. of Lanes             | 1    | 2    | 2    | 0    | 2    | 1    |   |   |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |   |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |   |
| Cap, veh/h                   | 517  | 2455 | 766  | 414  | 432  | 193  |   |   |
| Arrive On Green              | 0.65 | 1.00 | 0.80 | 0.79 | 0.14 | 0.14 |   |   |
| Sat Flow, veh/h              | 1597 | 3269 | 1999 | 1035 | 3193 | 1425 |   |   |
| Grp Volume(v), veh/h         | 175  | 821  | 528  | 450  | 276  | 17   |   |   |
| Grp Sat Flow(s),veh/h/ln     | 1597 | 1593 | 1593 | 1357 | 1597 | 1425 |   |   |
| Q Serve(g_s), s              | 4.2  | 0.0  | 16.7 | 17.1 | 7.0  | 0.9  |   |   |
| Cycle Q Clear(g_c), s        | 4.2  | 0.0  | 16.7 | 17.1 | 7.0  | 0.9  |   |   |
| Prop In Lane                 | 1.00 |      |      | 0.76 | 1.00 | 1.00 |   |   |
| Lane Grp Cap(c), veh/h       | 517  | 2455 | 637  | 543  | 432  | 193  |   |   |
| V/C Ratio(X)                 | 0.34 | 0.33 | 0.83 | 0.83 | 0.64 | 0.09 |   |   |
| Avail Cap(c_a), veh/h        | 517  | 2455 | 637  | 543  | 1052 | 469  |   |   |
| HCM Platoon Ratio            | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 |   |   |
| Upstream Filter(I)           | 0.63 | 0.63 | 0.77 | 0.77 | 1.00 | 1.00 |   |   |
| Uniform Delay (d), s/veh     | 10.9 | 0.0  | 6.8  | 7.1  | 34.8 | 32.2 |   |   |
| Incr Delay (d2), s/veh       | 0.1  | 0.2  | 9.4  | 10.9 | 0.6  | 0.1  |   |   |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |   |
| %ile BackOfQ(50%),veh/ln     | 1.8  | 0.1  | 8.3  | 7.6  | 3.1  | 0.7  |   |   |
| LnGrp Delay(d),s/veh         | 11.0 | 0.2  | 16.2 | 18.0 | 35.4 | 32.2 |   |   |
| LnGrp LOS                    | B    | A    | B    | B    | D    | C    |   |   |
| Approach Vol, veh/h          |      | 996  | 978  |      | 293  |      |   |   |
| Approach Delay, s/veh        |      | 2.1  | 17.0 |      | 35.2 |      |   |   |
| Approach LOS                 |      | A    | B    |      | D    |      |   |   |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8 |
| Assigned Phs                 |      | 2    |      | 4    | 5    | 6    |   |   |
| Phs Duration (G+Y+Rc), s     |      | 69.5 |      | 15.5 | 31.5 | 38.0 |   |   |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  | 4.5  | 4.5  |   |   |
| Max Green Setting (Gmax), s  |      | 48.5 |      | 27.5 | 10.5 | 33.5 |   |   |
| Max Q Clear Time (g_c+I1), s |      | 2.0  |      | 9.0  | 6.2  | 19.1 |   |   |
| Green Ext Time (p_c), s      |      | 5.7  |      | 1.3  | 2.0  | 4.4  |   |   |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |   |
| HCM 2010 Ctrl Delay          |      |      | 12.8 |      |      |      |   |   |
| HCM 2010 LOS                 |      |      | B    |      |      |      |   |   |
| <b>Notes</b>                 |      |      |      |      |      |      |   |   |

HCM 2010 Signalized Intersection Summary  
 11: Telegraph Avenue & Grand Avenue





















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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |  |  |  |
| Traffic Volume (veh/h)       | 117   | 818   | 205   | 80  | 510   | 91  | 374  | 379   | 209   | 95  | 299   | 90  |
| Future Volume (veh/h)        | 117   | 818   | 205   | 80  | 510   | 91  | 374  | 379   | 209   | 95  | 299   | 90  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.99  |   | 0.88  | 1.00  |   | 0.88  | 0.95   |   | 0.89  | 0.95  |   | 0.86  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1676   | 1676  | 1676  | 1676  | 1676  | 1676  |
| Adj Flow Rate, veh/h         | 117   | 818   | 205   | 80  | 510   | 91  | 374  | 379   | 188   | 95  | 299   | 67  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 1  | 1   | 1   | 1   | 1   | 1   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 212   | 879   | 220   | 107   | 949   | 168   | 546  | 917   | 692   | 316   | 542   | 396   |
| Arrive On Green              | 0.48  | 0.48  | 0.47  | 0.12  | 0.12  | 0.12  | 0.18   | 0.55  | 0.55  | 0.65  | 0.65  | 0.65  |
| Sat Flow, veh/h              | 724   | 2448  | 613   | 494   | 2645  | 468   | 1597   | 1676  | 1264  | 716   | 1676  | 1223  |
| Grp Volume(v), veh/h         | 117   | 532   | 491   | 80  | 305   | 296   | 374  | 379   | 188   | 95  | 299   | 67  |
| Grp Sat Flow(s),veh/h/ln     | 724   | 1593  | 1469  | 494   | 1593  | 1520  | 1597   | 1676  | 1264  | 716   | 1676  | 1223  |
| Q Serve(g_s), s              | 13.4  | 26.7  | 26.7  | 3.8   | 15.3  | 15.6  | 12.8   | 11.2  | 6.7   | 5.4   | 8.3   | 1.8   |
| Cycle Q Clear(g_c), s        | 29.0  | 26.7  | 26.7  | 30.5  | 15.3  | 15.6  | 12.8   | 11.2  | 6.7   | 5.4   | 8.3   | 1.8   |
| Prop In Lane                 | 1.00  |   | 0.42  | 1.00  |   | 0.31  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Lane Grp Cap(c), veh/h       | 212   | 571   | 527   | 107   | 571   | 546   | 546  | 917   | 692   | 316   | 542   | 396   |
| V/C Ratio(X)                 | 0.55  | 0.93  | 0.93  | 0.75  | 0.53  | 0.54  | 0.68   | 0.41  | 0.27  | 0.30  | 0.55  | 0.17  |
| Avail Cap(c_a), veh/h        | 212   | 571   | 527   | 107   | 571   | 546   | 546  | 917   | 692   | 316   | 542   | 396   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           | 0.92  | 0.92  | 0.92  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 0.94  | 0.94  | 0.94  |
| Uniform Delay (d), s/veh     | 29.4  | 21.2  | 21.4  | 52.2  | 30.8  | 30.9  | 14.7   | 11.3  | 10.2  | 11.1  | 11.6  | 10.5  |
| Incr Delay (d2), s/veh       | 1.7   | 20.5  | 21.8  | 22.9  | 0.5   | 0.6   | 2.9  | 1.4   | 1.0   | 2.3   | 3.8   | 0.9   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.8   | 14.8  | 13.9  | 2.6   | 6.8   | 6.7   | 6.0  | 5.5   | 2.5   | 1.2   | 4.3   | 0.7   |
| LnGrp Delay(d),s/veh         | 31.1  | 41.7  | 43.2  | 75.1  | 31.3  | 31.5  | 17.6   | 12.6  | 11.2  | 13.4  | 15.4  | 11.3  |
| LnGrp LOS                    | C   | D   | D   | E   | C   | C   | B  | B   | B   | B   | B   | B   |
| Approach Vol, veh/h          |   | 1140  |   |   | 681   |   |  | 941   |   |   | 461   |   |
| Approach Delay, s/veh        |   | 41.3  |   |   | 36.5  |   |  | 14.3  |   |   | 14.4  |   |
| Approach LOS                 |   | D   |   |   | D   |   |  | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   | 5   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 50.5  |   | 34.5  | 19.0  | 31.5  |  | 34.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   | 4.5   | 4.5   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 44.5  |   | 30.0  | 14.5  | 25.5  |  | 30.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 13.2  |   | 31.0  | 14.8  | 10.3  |  | 32.5  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.8   |   | 0.0   | 0.0   | 4.7   |  | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 28.6  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | C   |   |   |  |   |   |   |   |   |

| Intersection             |        |       |      |        |       |      |        |       |      |        |      |      |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|------|--------|------|------|
| Int Delay, s/veh         | 2.5    |       |      |        |       |      |        |       |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations      | ↕↕     |       |      | ↕↕     |       |      | ↕↕     |       |      | ↕↕     |      |      |
| Traffic Vol, veh/h       | 39     | 964   | 98   | 25     | 716   | 29   | 10     | 3     | 12   | 15     | 1    | 35   |
| Future Vol, veh/h        | 39     | 964   | 98   | 25     | 716   | 29   | 10     | 3     | 12   | 15     | 1    | 35   |
| Conflicting Peds, #/hr   | 54     | 0     | 57   | 57     | 0     | 54   | 30     | 0     | 30   | 30     | 0    | 30   |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop | Stop   | Stop | Stop |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None | -      | -    | None |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Peak Hour Factor         | 100    | 100   | 100  | 100    | 100   | 100  | 100    | 100   | 100  | 100    | 100  | 100  |
| Heavy Vehicles, %        | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2     | 2    | 2      | 2    | 2    |
| Mvmt Flow                | 39     | 964   | 98   | 25     | 716   | 29   | 10     | 3     | 12   | 15     | 1    | 35   |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |      | Minor2 |      |      |
| Conflicting Flow All     | 799    | 0     | 0    | 1119   | 0     | 0    | 1587   | 1997  | 618  | 1427   | 2032 | 457  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 1148   | 1148  | -    | 835    | 835  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 439    | 849   | -    | 592    | 1197 | -    |
| Critical Hdwy            | 4.14   | -     | -    | 4.14   | -     | -    | 7.54   | 6.54  | 6.94 | 7.54   | 6.54 | 6.94 |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.54   | 5.54  | -    | 6.54   | 5.54 | -    |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.54   | 5.54  | -    | 6.54   | 5.54 | -    |
| Follow-up Hdwy           | 2.22   | -     | -    | 2.22   | -     | -    | 3.52   | 4.02  | 3.32 | 3.52   | 4.02 | 3.32 |
| Pot Cap-1 Maneuver       | 819    | -     | -    | 620    | -     | -    | 73     | 59    | 432  | 96     | 57   | 551  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 211    | 272   | -    | 328    | 381  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 567    | 375   | -    | 460    | 257  | -    |
| Platoon blocked, %       | -      | -     | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Mov Cap-1 Maneuver       | 796    | -     | -    | 602    | -     | -    | 53     | 43    | 397  | 70     | 42   | 508  |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 53     | 43    | -    | 70     | 42   | -    |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 175    | 226   | -    | 273    | 336  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 475    | 330   | -    | 375    | 213  | -    |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |      | SB     |      |      |
| HCM Control Delay, s     | 0.9    |       |      | 0.7    |       |      | 62.3   |       |      | 36     |      |      |
| HCM LOS                  | F      |       |      | F      |       |      | F      |       |      | E      |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |      |        |      |      |
| Capacity (veh/h)         | 87     | 796   | -    | -      | 602   | -    | -      | 166   |      |        |      |      |
| HCM Lane V/C Ratio       | 0.287  | 0.049 | -    | -      | 0.042 | -    | -      | 0.307 |      |        |      |      |
| HCM Control Delay (s)    | 62.3   | 9.8   | 0.6  | -      | 11.2  | 0.4  | -      | 36    |      |        |      |      |
| HCM Lane LOS             | F      | A     | A    | -      | B     | A    | -      | E     |      |        |      |      |
| HCM 95th %tile Q(veh)    | 1.1    | 0.2   | -    | -      | 0.1   | -    | -      | 1.2   |      |        |      |      |

















HCM 2010 Signalized Intersection Summary  
 13: Broadway & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |  |  |  |   |
| Traffic Volume (veh/h)       | 139   | 762   | 99  | 67  | 377   | 53  | 254  | 662   | 215   | 91  | 342   | 145   |
| Future Volume (veh/h)        | 139   | 762   | 99  | 67  | 377   | 53  | 254  | 662   | 215   | 91  | 342   | 145   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.87  | 0.99  |   | 0.87  | 0.94   |   | 0.80  | 0.95  |   | 0.83  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 1676   | 1676  | 1676  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 139   | 762   | 85  | 67  | 377   | 40  | 254  | 662   | 194   | 91  | 342   | 99  |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 1  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 367   | 1141  | 127   | 116   | 712   | 86  | 418  | 1606  | 578   | 363   | 1181  | 331   |
| Arrive On Green              | 0.40  | 0.40  | 0.40  | 0.80  | 0.80  | 0.79  | 1.00   | 1.00  | 1.00  | 0.50  | 0.50  | 0.49  |
| Sat Flow, veh/h              | 824   | 2840  | 317   | 150   | 1773  | 213   | 803  | 3185  | 1147  | 552   | 2344  | 656   |
| Grp Volume(v), veh/h         | 139   | 427   | 420   | 212   | 0   | 272   | 254  | 662   | 194   | 91  | 229   | 212   |
| Grp Sat Flow(s),veh/h/ln     | 824   | 1593  | 1564  | 684   | 0   | 1451  | 803  | 1593  | 1147  | 552   | 1593  | 1407  |
| Q Serve(g_s), s              | 11.3  | 18.6  | 18.7  | 9.8   | 0.0   | 5.1   | 12.7   | 0.0   | 0.0   | 8.3   | 7.1   | 7.6   |
| Cycle Q Clear(g_c), s        | 16.4  | 18.6  | 18.7  | 28.5  | 0.0   | 5.1   | 20.3   | 0.0   | 0.0   | 8.3   | 7.1   | 7.6   |
| Prop In Lane                 | 1.00  |   | 0.20  | 0.32  |   | 0.15  | 1.00   |   | 1.00  | 1.00  |   | 0.47  |
| Lane Grp Cap(c), veh/h       | 367   | 640   | 628   | 331   | 0   | 583   | 418  | 1606  | 578   | 363   | 803   | 709   |
| V/C Ratio(X)                 | 0.38  | 0.67  | 0.67  | 0.64  | 0.00  | 0.47  | 0.61   | 0.41  | 0.34  | 0.25  | 0.28  | 0.30  |
| Avail Cap(c_a), veh/h        | 385   | 675   | 663   | 353   | 0   | 615   | 418  | 1606  | 578   | 363   | 803   | 709   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 1.00  | 1.00  | 0.98  | 0.00  | 0.98  | 0.87   | 0.87  | 0.87  | 0.97  | 0.97  | 0.97  |
| Uniform Delay (d), s/veh     | 22.1  | 20.8  | 20.8  | 9.4   | 0.0   | 5.5   | 1.8  | 0.0   | 0.0   | 12.5  | 12.2  | 12.5  |
| Incr Delay (d2), s/veh       | 0.2   | 1.8   | 1.9   | 2.4   | 0.0   | 0.2   | 5.6  | 0.7   | 1.4   | 1.6   | 0.9   | 1.1   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.6   | 8.5   | 8.4   | 2.8   | 0.0   | 1.9   | 3.1  | 0.2   | 0.2   | 1.4   | 3.3   | 3.1   |
| LnGrp Delay(d),s/veh         | 22.4  | 22.6  | 22.7  | 11.8  | 0.0   | 5.8   | 7.4  | 0.7   | 1.4   | 14.1  | 13.1  | 13.5  |
| LnGrp LOS                    | C   | C   | C   | B   |   | A   | A  | A   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 986   |   |   | 484   |   |  | 1110  |   |   | 532   |   |
| Approach Delay, s/veh        |   | 22.6  |   |   | 8.4   |   |  | 2.3   |   |   | 13.4  |   |
| Approach LOS                 |   | C   |   |   | A   |   |  | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 46.9  |   | 38.1  |   | 46.9  |  | 38.1  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 40.0  |   | 35.5  |   | 40.0  |  | 35.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 22.3  |   | 20.7  |   | 10.3  |  | 30.5  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 9.5   |   | 6.8   |   | 12.2  |  | 3.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.6  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |



















HCM 2010 Signalized Intersection Summary  
 14: Webster Street & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |  |  |   |  |   |   |   |  |   |
| Traffic Volume (veh/h)       | 35  | 822   | 192   | 113   | 413   | 31  | 0  | 0   | 0   | 73  | 203   | 80  |
| Future Volume (veh/h)        | 35  | 822   | 192   | 113   | 413   | 31  | 0  | 0   | 0   | 73  | 203   | 80  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  |  |   |   | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.94  |   | 0.86  | 1.00  |   | 0.88  |  |   |   | 1.00  |   | 0.73  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1676  | 1676  | 1710  |  |   |   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 35  | 822   | 171   | 113   | 413   | 24  |  |   |   | 73  | 203   | 67  |
| Adj No. of Lanes             | 0   | 2   | 0   | 1   | 2   | 0   |  |   |   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   |  |   |   | 0   | 2   | 0   |
| Cap, veh/h                   | 73  | 1152  | 236   | 149   | 1881  | 109   |  |   |   | 90  | 251   | 83  |
| Arrive On Green              | 0.96  | 0.96  | 0.92  | 0.09  | 0.62  | 0.60  |  |   |   | 0.29  | 0.29  | 0.29  |
| Sat Flow, veh/h              | 59  | 2403  | 492   | 1597  | 3034  | 175   |  |   |   | 316   | 878   | 290   |
| Grp Volume(v), veh/h         | 562   | 0   | 466   | 113   | 216   | 221   |  |   |   | 343   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1612  | 0   | 1343  | 1597  | 1593  | 1617  |  |   |   | 1483  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 5.1   | 5.9   | 5.1   | 5.1   |  |   |   | 18.3  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 3.5   | 0.0   | 5.1   | 5.9   | 5.1   | 5.1   |  |   |   | 18.3  | 0.0   | 0.0   |
| Prop In Lane                 | 0.06  |   | 0.37  | 1.00  |   | 0.11  |  |   |   | 0.21  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 818   | 0   | 644   | 149   | 987   | 1003  |  |   |   | 424   | 0   | 0   |
| V/C Ratio(X)                 | 0.69  | 0.00  | 0.72  | 0.76  | 0.22  | 0.22  |  |   |   | 0.81  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 818   | 0   | 644   | 225   | 987   | 1003  |  |   |   | 454   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.71  | 0.00  | 0.71  | 0.97  | 0.97  | 0.97  |  |   |   | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 1.0   | 0.0   | 1.3   | 37.6  | 7.1   | 7.2   |  |   |   | 28.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 3.3   | 0.0   | 5.0   | 2.9   | 0.5   | 0.5   |  |   |   | 9.0   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.5   | 0.0   | 2.2   | 2.7   | 2.4   | 2.4   |  |   |   | 8.5   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 4.3   | 0.0   | 6.3   | 40.5  | 7.6   | 7.6   |  |   |   | 37.1  | 0.0   | 0.0   |
| LnGrp LOS                    | A   |   | A   | D   | A   | A   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 1028  |   |   | 550   |   |  |   |   |   | 343   |   |
| Approach Delay, s/veh        |   | 5.2   |   |   | 14.4  |   |  |   |   |   | 37.1  |   |
| Approach LOS                 |   | A   |   |   | B   |   |  |   |   |   | D   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 11.9  | 44.8  |   | 28.3  |   | 56.7  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 5.5   |   | 3.5   |   | 5.5   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 11.5  | 33.5  |   | 26.5  |   | 49.5  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 7.9   | 7.1   |   | 20.3  |   | 7.1   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 4.3   |   | 0.5   |   | 4.4   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 13.5  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |





















HCM 2010 Signalized Intersection Summary  
 15: Grand Avenue & Valdez Street

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 33  | 883   | 5   | 5   | 483   | 23  | 3  | 2   | 4   | 78  | 0   | 59  |
| Future Volume (veh/h)        | 33  | 883   | 5   | 5   | 483   | 23  | 3  | 2   | 4   | 78  | 0   | 59  |
| Number                       | 5   | 2   | 12  | 1   | 6   | 16  | 3  | 8   | 18  | 7   | 4   | 14  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.96  |   | 0.84  | 0.98  |   | 0.86  | 0.90   |   | 0.87  | 0.89  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 33  | 883   | 5   | 5   | 483   | 20  | 3  | 2   | 1   | 78  | 0   | 20  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 472   | 1885  | 11  | 350   | 1798  | 74  | 262  | 163   | 72  | 367   | 8   | 77  |
| Arrive On Green              | 0.77  | 0.77  | 0.77  | 0.58  | 0.58  | 0.58  | 0.32   | 0.32  | 0.32  | 0.32  | 0.00  | 0.32  |
| Sat Flow, veh/h              | 769   | 3243  | 18  | 548   | 3094  | 128   | 611  | 503   | 223   | 897   | 23  | 236   |
| Grp Volume(v), veh/h         | 33  | 434   | 454   | 5   | 248   | 255   | 6  | 0   | 0   | 98  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 769   | 1593  | 1669  | 548   | 1593  | 1629  | 1338   | 0   | 0   | 1156  | 0   | 0   |
| Q Serve(g_s), s              | 1.3   | 8.2   | 8.2   | 0.4   | 6.6   | 6.6   | 0.0  | 0.0   | 0.0   | 4.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 7.9   | 8.2   | 8.2   | 8.6   | 6.6   | 6.6   | 0.2  | 0.0   | 0.0   | 5.2   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.01  | 1.00  |   | 0.08  | 0.50   |   | 0.17  | 0.80  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 472   | 926   | 970   | 350   | 926   | 947   | 498  | 0   | 0   | 451   | 0   | 0   |
| V/C Ratio(X)                 | 0.07  | 0.47  | 0.47  | 0.01  | 0.27  | 0.27  | 0.01   | 0.00  | 0.00  | 0.22  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 472   | 926   | 970   | 350   | 926   | 947   | 625  | 0   | 0   | 565   | 0   | 0   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.53  | 0.53  | 0.53  | 0.93  | 0.93  | 0.93  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 6.1   | 5.0   | 5.0   | 11.4  | 8.8   | 8.9   | 19.5   | 0.0   | 0.0   | 21.1  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 0.9   | 0.9   | 0.1   | 0.7   | 0.6   | 0.0  | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 3.7   | 3.9   | 0.1   | 3.0   | 3.1   | 0.1  | 0.0   | 0.0   | 1.7   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 6.2   | 5.9   | 5.8   | 11.5  | 9.5   | 9.5   | 19.5   | 0.0   | 0.0   | 21.2  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | B   | A   | A   | B  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 921   |   |   | 508   |   |  | 6   |   |   |   | 98  |
| Approach Delay, s/veh        |   | 5.9   |   |   | 9.5   |   |  | 19.5  |   |   |   | 21.2  |
| Approach LOS                 |   | A   |   |   | A   |   |  | B   |   |   |   | C   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 53.4  |   | 31.6  |   | 53.4  |  | 31.6  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 40.5  |   | 35.5  |   | 40.5  |  | 35.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 10.2  |   | 7.2   |   | 10.6  |  | 2.2   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 7.6   |   | 0.4   |   | 7.6   |  | 0.5   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 8.1   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 16: Harrison Street & Grand Avenue

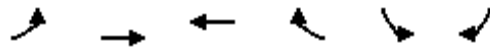
2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |  |   |  |  |
| Traffic Volume (veh/h)       | 149   | 679   | 139   | 232   | 368   | 22  | 14   | 1052  | 713   | 2   | 394   | 113   |
| Future Volume (veh/h)        | 149   | 679   | 139   | 232   | 368   | 22  | 14   | 1052  | 713   | 2   | 394   | 113   |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.76  | 1.00  |   | 0.80  | 0.96   |   | 0.91  | 0.99  |   | 0.88  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1676  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 149   | 679   | 124   | 232   | 368   | 18  | 14   | 1052  | 685   | 2   | 394   | 74  |
| Adj No. of Lanes             | 2   | 2   | 0   | 2   | 2   | 0   | 0  | 3   | 1   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 208   | 741   | 135   | 293   | 1016  | 49  | 46   | 2160  | 710   | 35  | 1812  | 321   |
| Arrive On Green              | 0.07  | 0.29  | 0.28  | 0.09  | 0.33  | 0.32  | 0.98   | 0.98  | 0.95  | 0.49  | 0.49  | 0.48  |
| Sat Flow, veh/h              | 3097  | 2548  | 464   | 3097  | 3052  | 148   | 25   | 4401  | 1290  | 3   | 3691  | 653   |
| Grp Volume(v), veh/h         | 149   | 424   | 379   | 232   | 191   | 195   | 398  | 668   | 685   | 176   | 147   | 147   |
| Grp Sat Flow(s),veh/h/ln     | 1549  | 1593  | 1420  | 1549  | 1593  | 1608  | 1649   | 1388  | 1290  | 1658  | 1388  | 1301  |
| Q Serve(g_s), s              | 5.2   | 28.3  | 28.5  | 8.1   | 10.0  | 10.2  | 0.0  | 0.9   | 52.4  | 0.0   | 6.6   | 7.2   |
| Cycle Q Clear(g_c), s        | 5.2   | 28.3  | 28.5  | 8.1   | 10.0  | 10.2  | 0.9  | 0.9   | 52.4  | 6.6   | 6.6   | 7.2   |
| Prop In Lane                 | 1.00  |   | 0.33  | 1.00  |   | 0.09  | 0.04   |   | 1.00  | 0.01  |   | 0.50  |
| Lane Grp Cap(c), veh/h       | 208   | 463   | 413   | 293   | 530   | 535   | 843  | 1363  | 710   | 847   | 682   | 638   |
| V/C Ratio(X)                 | 0.72  | 0.91  | 0.92  | 0.79  | 0.36  | 0.36  | 0.47   | 0.49  | 0.96  | 0.21  | 0.22  | 0.23  |
| Avail Cap(c_a), veh/h        | 310   | 463   | 413   | 338   | 530   | 535   | 843  | 1363  | 710   | 847   | 682   | 638   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.89  | 0.89  | 0.89  | 0.98  | 0.98  | 0.98  | 0.91   | 0.91  | 0.91  | 0.90  | 0.90  | 0.90  |
| Uniform Delay (d), s/veh     | 50.3  | 37.7  | 38.0  | 48.7  | 27.8  | 27.9  | 0.5  | 0.5   | 4.9   | 15.9  | 15.9  | 16.3  |
| Incr Delay (d2), s/veh       | 4.1   | 23.0  | 25.7  | 10.5  | 1.9   | 1.9   | 0.4  | 0.2   | 23.7  | 0.1   | 0.1   | 0.2   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 2.3   | 15.3  | 14.1  | 3.9   | 4.7   | 4.8   | 0.3  | 0.2   | 25.6  | 3.1   | 2.6   | 2.6   |
| LnGrp Delay(d),s/veh         | 54.4  | 60.7  | 63.7  | 59.3  | 29.7  | 29.8  | 0.9  | 0.8   | 28.6  | 16.0  | 16.1  | 16.5  |
| LnGrp LOS                    | D   | E   | E   | E   | C   | C   | A  | A   | C   | B   | B   | B   |
| Approach Vol, veh/h          |   | 952   |   |   | 618   |   |  | 1751  |   |   | 470   |   |
| Approach Delay, s/veh        |   | 60.9  |   |   | 40.8  |   |  | 11.7  |   |   | 16.2  |   |
| Approach LOS                 |   | E   |   |   | D   |   |  | B   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   | 7  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 58.0  | 11.4  | 40.6  |   | 58.0  | 16.0   | 36.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.6   | 4.0   | 5.6   |   | 5.6   | 5.6  | * 5.6   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 52.4  | 11.0  | 31.4  |   | 52.4  | 12.0   | * 30  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 54.4  | 7.2   | 12.2  |   | 9.2   | 10.1   | 30.5  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 0.3   | 3.9   |   | 27.0  | 0.3  | 0.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 29.4  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |



HCM 2010 Signalized Intersection Summary  
 17: Grand Avenue & Bay Place





















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| Movement                     | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Lane Configurations          |      |      |      |      |      |      |   |      |
| Traffic Volume (veh/h)       | 162  | 1321 | 488  | 229  | 294  | 85   |   |      |
| Future Volume (veh/h)        | 162  | 1321 | 488  | 229  | 294  | 85   |   |      |
| Number                       | 7    | 4    | 8    | 18   | 5    | 12   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          | 0.98 |      |      | 0.90 | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1676 | 1676 | 1676 | 1676 | 1710 |   |      |
| Adj Flow Rate, veh/h         | 162  | 1321 | 488  | 155  | 343  | 0    |   |      |
| Adj No. of Lanes             | 1    | 2    | 2    | 1    | 2    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 0    |   |      |
| Cap, veh/h                   | 578  | 2441 | 2441 | 985  | 462  | 202  |   |      |
| Arrive On Green              | 0.77 | 0.77 | 0.77 | 0.77 | 0.14 | 0.00 |   |      |
| Sat Flow, veh/h              | 688  | 3269 | 3269 | 1286 | 3193 | 1454 |   |      |
| Grp Volume(v), veh/h         | 162  | 1321 | 488  | 155  | 343  | 0    |   |      |
| Grp Sat Flow(s),veh/h/ln     | 688  | 1593 | 1593 | 1286 | 1597 | 1454 |   |      |
| Q Serve(g_s), s              | 7.6  | 14.9 | 3.8  | 2.9  | 9.3  | 0.0  |   |      |
| Cycle Q Clear(g_c), s        | 11.4 | 14.9 | 3.8  | 2.9  | 9.3  | 0.0  |   |      |
| Prop In Lane                 | 1.00 |      |      | 1.00 | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 578  | 2441 | 2441 | 985  | 462  | 202  |   |      |
| V/C Ratio(X)                 | 0.28 | 0.54 | 0.20 | 0.16 | 0.74 | 0.00 |   |      |
| Avail Cap(c_a), veh/h        | 578  | 2441 | 2441 | 985  | 834  | 371  |   |      |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.27 | 0.27 | 0.96 | 0.96 | 1.00 | 0.00 |   |      |
| Uniform Delay (d), s/veh     | 4.5  | 4.2  | 2.9  | 2.8  | 36.9 | 0.0  |   |      |
| Incr Delay (d2), s/veh       | 0.3  | 0.2  | 0.2  | 0.3  | 0.9  | 0.0  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 1.5  | 6.5  | 1.7  | 1.1  | 4.2  | 0.0  |   |      |
| LnGrp Delay(d),s/veh         | 4.8  | 4.4  | 3.1  | 3.1  | 37.8 | 0.0  |   |      |
| LnGrp LOS                    | A    | A    | A    | A    | D    |      |   |      |
| Approach Vol, veh/h          |      | 1483 | 643  |      | 343  |      |   |      |
| Approach Delay, s/veh        |      | 4.5  | 3.1  |      | 37.8 |      |   |      |
| Approach LOS                 |      | A    | A    |      | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 |      | 2    |      | 4    |      |      |   | 8    |
| Phs Duration (G+Y+Rc), s     |      | 17.0 |      | 73.0 |      |      |   | 73.0 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      |      |   | 4.5  |
| Max Green Setting (Gmax), s  |      | 23.0 |      | 58.0 |      |      |   | 58.0 |
| Max Q Clear Time (g_c+I1), s |      | 11.3 |      | 16.9 |      |      |   | 5.8  |
| Green Ext Time (p_c), s      |      | 1.3  |      | 18.6 |      |      |   | 20.3 |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 8.7  |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | A    |      |      |      |   |      |
| <b>Notes</b>                 |      |      |      |      |      |      |   |      |



















HCM 2010 Signalized Intersection Summary  
 18: Bellevue Avenue/Park View Terrace & Grand Avenue

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|                              |  |   |  |  |   |  |  |  |  |  |   |  |
|------------------------------|---|--|---|---|--|---|--|---|---|---|--|---|
| Movement                     | EBL   | EBT  | EBR   | WBL   | WBT  | WBR   | NBL  | NBT   | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations          |  | <br> |   |  | <br> |   |  |   |   |   | <br> |   |
| Traffic Volume (veh/h)       | 49  | 1499   | 52  | 23  | 681  | 20  | 0  | 0   | 0   | 29  | 0  | 29  |
| Future Volume (veh/h)        | 49  | 1499   | 52  | 23  | 681  | 20  | 0  | 0   | 0   | 29  | 0  | 29  |
| Number                       | 3   | 8  | 18  | 7   | 4  | 14  |  |   |   | 5   | 2  | 12  |
| Initial Q (Qb), veh          | 0   | 0  | 0   | 0   | 0  | 0   |  |   |   | 0   | 0  | 0   |
| Ped-Bike Adj(A_pbT)          | 0.97  |  | 0.85  | 1.00  |  | 0.79  |  |   |   | 1.00  |  | 0.90  |
| Parking Bus, Adj             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |  |   |   | 1.00  | 1.00   | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676   | 1710  | 1676  | 1676   | 1710  |  |   |   | 1710  | 1676   | 1710  |
| Adj Flow Rate, veh/h         | 49  | 1499   | 50  | 23  | 681  | 18  |  |   |   | 29  | 0  | 6   |
| Adj No. of Lanes             | 1   | 2  | 0   | 1   | 2  | 0   |  |   |   | 0   | 1  | 0   |
| Peak Hour Factor             | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  |  |   |   | 1.00  | 1.00   | 1.00  |
| Percent Heavy Veh, %         | 2   | 2  | 2   | 2   | 2  | 2   |  |   |   | 0   | 2  | 0   |
| Cap, veh/h                   | 431   | 2313   | 77  | 214   | 2328   | 61  |  |   |   | 238   | 0  | 49  |
| Arrive On Green              | 0.74  | 0.74   | 0.74  | 0.24  | 0.24   | 0.24  |  |   |   | 0.19  | 0.00   | 0.18  |
| Sat Flow, veh/h              | 648   | 3125   | 104   | 298   | 3145   | 83  |  |   |   | 1270  | 0  | 263   |
| Grp Volume(v), veh/h         | 49  | 761  | 788   | 23  | 345  | 354   |  |   |   | 35  | 0  | 0   |
| Grp Sat Flow(s),veh/h/ln     | 648   | 1593   | 1636  | 298   | 1593   | 1636  |  |   |   | 1533  | 0  | 0   |
| Q Serve(g_s), s              | 3.9   | 26.1   | 26.6  | 7.3   | 19.4   | 19.4  |  |   |   | 2.1   | 0.0  | 0.0   |
| Cycle Q Clear(g_c), s        | 23.3  | 26.1   | 26.6  | 33.9  | 19.4   | 19.4  |  |   |   | 2.1   | 0.0  | 0.0   |
| Prop In Lane                 | 1.00  |  | 0.06  | 1.00  |  | 0.05  |  |   |   | 0.83  |  | 0.17  |
| Lane Grp Cap(c), veh/h       | 431   | 1179   | 1211  | 214   | 1179   | 1211  |  |   |   | 287   | 0  | 0   |
| V/C Ratio(X)                 | 0.11  | 0.65   | 0.65  | 0.11  | 0.29   | 0.29  |  |   |   | 0.12  | 0.00   | 0.00  |
| Avail Cap(c_a), veh/h        | 431   | 1179   | 1211  | 214   | 1179   | 1211  |  |   |   | 404   | 0  | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00   | 1.00  | 0.33  | 0.33   | 0.33  |  |   |   | 1.00  | 1.00   | 1.00  |
| Upstream Filter(I)           | 0.78  | 0.78   | 0.78  | 0.96  | 0.96   | 0.96  |  |   |   | 1.00  | 0.00   | 0.00  |
| Uniform Delay (d), s/veh     | 11.3  | 7.1  | 7.2   | 35.0  | 18.1   | 18.1  |  |   |   | 37.3  | 0.0  | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 2.1  | 2.1   | 1.0   | 0.6  | 0.6   |  |   |   | 0.1   | 0.0  | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0  | 0.0   | 0.0   | 0.0  | 0.0   |  |   |   | 0.0   | 0.0  | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.7   | 11.9   | 12.5  | 0.7   | 8.7  | 9.0   |  |   |   | 0.9   | 0.0  | 0.0   |
| LnGrp Delay(d),s/veh         | 11.7  | 9.2  | 9.3   | 36.0  | 18.7   | 18.7  |  |   |   | 37.3  | 0.0  | 0.0   |
| LnGrp LOS                    | B   | A  | A   | D   | B  | B   |  |   |   | D   |  |   |
| Approach Vol, veh/h          |   | 1598   |   |   | 722  |   |  |   |   |   |  | 35  |
| Approach Delay, s/veh        |   | 9.3  |   |   | 19.3   |   |  |   |   |   |  | 37.3  |
| Approach LOS                 |   | A  |   |   | B  |   |  |   |   |   |  | D   |
| Timer                        | 1   | 2  | 3   | 4   | 5  | 6   | 7  | 8   |   |   |  |   |
| Assigned Phs                 |   | 2  |   | 4   |  |   |  | 8   |   |   |  |   |
| Phs Duration (G+Y+Rc), s     |   | 24.6   |   | 85.4  |  |   |  | 85.4  |   |   |  |   |
| Change Period (Y+Rc), s      |   | 5.0  |   | 4.5   |  |   |  | 4.5   |   |   |  |   |
| Max Green Setting (Gmax), s  |   | 28.0   |   | 72.5  |  |   |  | 72.5  |   |   |  |   |
| Max Q Clear Time (g_c+I1), s |   | 4.1  |   | 35.9  |  |   |  | 28.6  |   |   |  |   |
| Green Ext Time (p_c), s      |   | 0.0  |   | 4.3   |  |   |  | 4.3   |   |   |  |   |
| <b>Intersection Summary</b>  |   |  |   |   |  |   |  |   |   |   |  |   |
| HCM 2010 Ctrl Delay          |   |  |   | 12.8  |  |   |  |   |   |   |  |   |
| HCM 2010 LOS                 |   |  |   | B   |  |   |  |   |   |   |  |   |



















HCM 2010 Signalized Intersection Summary  
 19: Perkins Street & Grand Avenue

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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 75  | 1345  | 33  | 34  | 596   | 56  | 37   | 5   | 36  | 94  | 13  | 67  |
| Future Volume (veh/h)        | 75  | 1345  | 33  | 34  | 596   | 56  | 37   | 5   | 36  | 94  | 13  | 67  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.80  | 1.00  |   | 0.84  | 0.94   |   | 0.90  | 0.92  |   | 0.91  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 75  | 1345  | 32  | 34  | 596   | 51  | 37   | 5   | 18  | 94  | 13  | 45  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 514   | 2134  | 51  | 189   | 1972  | 168   | 233  | 37  | 93  | 240   | 38  | 95  |
| Arrive On Green              | 0.45  | 0.45  | 0.45  | 1.00  | 1.00  | 1.00  | 0.25   | 0.25  | 0.25  | 0.25  | 0.25  | 0.25  |
| Sat Flow, veh/h              | 664   | 3159  | 75  | 353   | 2919  | 249   | 717  | 145   | 369   | 744   | 151   | 376   |
| Grp Volume(v), veh/h         | 75  | 677   | 700   | 34  | 324   | 323   | 60   | 0   | 0   | 152   | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 664   | 1593  | 1641  | 353   | 1593  | 1575  | 1231   | 0   | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 7.4   | 35.8  | 36.0  | 6.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 6.6   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 7.4   | 35.8  | 36.0  | 41.9  | 0.0   | 0.0   | 3.9  | 0.0   | 0.0   | 10.5  | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.05  | 1.00  |   | 0.16  | 0.62   |   | 0.30  | 0.62  |   | 0.30  |
| Lane Grp Cap(c), veh/h       | 514   | 1076  | 1109  | 189   | 1076  | 1064  | 363  | 0   | 0   | 373   | 0   | 0   |
| V/C Ratio(X)                 | 0.15  | 0.63  | 0.63  | 0.18  | 0.30  | 0.30  | 0.17   | 0.00  | 0.00  | 0.41  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 514   | 1076  | 1109  | 189   | 1076  | 1064  | 410  | 0   | 0   | 421   | 0   | 0   |
| HCM Platoon Ratio            | 0.67  | 0.67  | 0.67  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.68  | 0.68  | 0.68  | 0.93  | 0.93  | 0.93  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 11.8  | 19.5  | 19.6  | 10.1  | 0.0   | 0.0   | 32.3   | 0.0   | 0.0   | 34.6  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.4   | 1.9   | 1.9   | 2.0   | 0.7   | 0.7   | 0.1  | 0.0   | 0.0   | 0.3   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.4   | 16.3  | 16.9  | 0.7   | 0.2   | 0.2   | 1.4  | 0.0   | 0.0   | 3.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 12.2  | 21.5  | 21.5  | 12.1  | 0.7   | 0.7   | 32.3   | 0.0   | 0.0   | 34.8  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | C   | C   | B   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 1452  |   |   | 681   |   |  | 60  |   |   | 152   |   |
| Approach Delay, s/veh        |   | 21.0  |   |   | 1.2   |   |  | 32.3  |   |   | 34.8  |   |
| Approach LOS                 |   | C   |   |   | A   |   |  | C   |   |   | C   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 31.7  |   | 78.3  |   | 31.7  |  | 78.3  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 31.5  |   | 69.5  |   | 31.5  |  | 69.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 12.5  |   | 43.9  |   | 5.9   |  | 38.0  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.3   |   | 3.9   |   | 0.3   |  | 4.0   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 16.4  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |


















HCM 2010 Signalized Intersection Summary  
 20: Staten Avenue & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |  |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 36  | 1372  | 11  | 26  | 645   | 49  | 24   | 4   | 36  | 24  | 7   | 33  |
| Future Volume (veh/h)        | 36  | 1372  | 11  | 26  | 645   | 49  | 24   | 4   | 36  | 24  | 7   | 33  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.80  | 1.00  |   | 0.83  | 0.95   |   | 0.95  | 0.96  |   | 0.95  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1676  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 36  | 1372  | 11  | 26  | 645   | 44  | 24   | 4   | 21  | 24  | 7   | 10  |
| Adj No. of Lanes             | 1   | 2   | 0   | 1   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 455   | 1968  | 16  | 214   | 1816  | 124   | 238  | 48  | 178   | 284   | 83  | 102   |
| Arrive On Green              | 0.81  | 0.81  | 0.80  | 1.00  | 1.00  | 1.00  | 0.32   | 0.32  | 0.31  | 0.32  | 0.32  | 0.31  |
| Sat Flow, veh/h              | 640   | 3231  | 26  | 351   | 2982  | 203   | 594  | 151   | 559   | 730   | 262   | 320   |
| Grp Volume(v), veh/h         | 36  | 676   | 707   | 26  | 344   | 345   | 49   | 0   | 0   | 41  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 640   | 1593  | 1664  | 351   | 1593  | 1592  | 1304   | 0   | 0   | 1312  | 0   | 0   |
| Q Serve(g_s), s              | 1.3   | 20.4  | 20.4  | 2.8   | 0.0   | 0.0   | 0.5  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 1.3   | 20.4  | 20.4  | 23.2  | 0.0   | 0.0   | 2.6  | 0.0   | 0.0   | 2.0   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.02  | 1.00  |   | 0.13  | 0.49   |   | 0.43  | 0.59  |   | 0.24  |
| Lane Grp Cap(c), veh/h       | 455   | 970   | 1014  | 214   | 970   | 970   | 464  | 0   | 0   | 469   | 0   | 0   |
| V/C Ratio(X)                 | 0.08  | 0.70  | 0.70  | 0.12  | 0.35  | 0.36  | 0.11   | 0.00  | 0.00  | 0.09  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 455   | 970   | 1014  | 214   | 970   | 970   | 464  | 0   | 0   | 469   | 0   | 0   |
| HCM Platoon Ratio            | 1.33  | 1.33  | 1.33  | 2.00  | 2.00  | 2.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.73  | 0.73  | 0.73  | 0.89  | 0.89  | 0.89  | 1.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 4.2   | 6.0   | 6.0   | 3.5   | 0.0   | 0.0   | 26.5   | 0.0   | 0.0   | 26.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 3.1   | 2.9   | 1.0   | 0.9   | 0.9   | 0.5  | 0.0   | 0.0   | 0.4   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.3   | 9.5   | 9.9   | 0.3   | 0.2   | 0.2   | 1.1  | 0.0   | 0.0   | 0.9   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 4.5   | 9.1   | 9.0   | 4.6   | 0.9   | 0.9   | 27.0   | 0.0   | 0.0   | 26.7  | 0.0   | 0.0   |
| LnGrp LOS                    | A   | A   | A   | A   | A   | A   | C  |   |   | C   |   |   |
| Approach Vol, veh/h          |   | 1419  |   |   | 715   |   |  | 49  |   |   |   | 41  |
| Approach Delay, s/veh        |   | 8.9   |   |   | 1.0   |   |  | 27.0  |   |   |   | 26.7  |
| Approach LOS                 |   | A   |   |   | A   |   |  | C   |   |   |   | C   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 39.0  |   | 71.0  |   | 39.0  |  | 71.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 34.5  |   | 66.5  |   | 34.5  |  | 66.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 4.0   |   | 25.2  |   | 4.6   |  | 22.4  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.5   |   | 25.0  |   | 0.5   |  | 26.0  |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 7.1   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
 21: Grand Avenue & Euclid Avenue

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |   |  |
| Traffic Volume (veh/h)       | 32  | 1458  | 0   | 3   | 706   | 141   | 0  | 0   | 0   | 83  | 0   | 36  |
| Future Volume (veh/h)        | 32  | 1458  | 0   | 3   | 706   | 141   | 0  | 0   | 0   | 83  | 0   | 36  |
| Number                       | 3   | 8   | 18  | 7   | 4   | 14  | 1  | 6   | 16  | 5   | 2   | 12  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 0.98  |   | 0.85  | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 0   | 1710  | 1676  | 1710  | 0  | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 32  | 1458  | 0   | 3   | 706   | 129   | 0  | 0   | 0   | 83  | 0   | 0   |
| Adj No. of Lanes             | 1   | 2   | 0   | 0   | 2   | 0   | 0  | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 0   | 2   | 2   | 2   | 0  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   | 529   | 2370  | 0   | 34  | 1367  | 249   | 0  | 307   | 0   | 298   | 0   | 0   |
| Arrive On Green              | 0.33  | 1.00  | 0.00  | 0.53  | 0.54  | 0.53  | 0.00   | 0.00  | 0.00  | 0.18  | 0.00  | 0.00  |
| Sat Flow, veh/h              | 1597  | 3269  | 0   | 2   | 2549  | 464   | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Grp Volume(v), veh/h         | 32  | 1458  | 0   | 463   | 0   | 375   | 0  | 0   | 0   | 83  | 0   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1597  | 1593  | 0   | 1668  | 0   | 1346  | 0  | 1676  | 0   | 1271  | 0   | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 19.7  | 0.0  | 0.0   | 0.0   | 6.3   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 0.0   | 0.0   | 0.0   | 19.5  | 0.0   | 19.7  | 0.0  | 0.0   | 0.0   | 6.3   | 0.0   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.00  | 0.01  |   | 0.34  | 0.00   |   | 0.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 529   | 2370  | 0   | 920   | 0   | 722   | 0  | 307   | 0   | 298   | 0   | 0   |
| V/C Ratio(X)                 | 0.06  | 0.62  | 0.00  | 0.50  | 0.00  | 0.52  | 0.00   | 0.00  | 0.00  | 0.28  | 0.00  | 0.00  |
| Avail Cap(c_a), veh/h        | 529   | 2370  | 0   | 920   | 0   | 722   | 0  | 457   | 0   | 412   | 0   | 0   |
| HCM Platoon Ratio            | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.63  | 0.63  | 0.00  | 0.93  | 0.00  | 0.93  | 0.00   | 0.00  | 0.00  | 1.00  | 0.00  | 0.00  |
| Uniform Delay (d), s/veh     | 11.4  | 0.0   | 0.0   | 16.4  | 0.0   | 16.4  | 0.0  | 0.0   | 0.0   | 39.3  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 0.0   | 0.8   | 0.0   | 1.8   | 0.0   | 2.5   | 0.0  | 0.0   | 0.0   | 0.2   | 0.0   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 0.4   | 0.2   | 0.0   | 9.5   | 0.0   | 7.8   | 0.0  | 0.0   | 0.0   | 2.2   | 0.0   | 0.0   |
| LnGrp Delay(d),s/veh         | 11.4  | 0.8   | 0.0   | 18.2  | 0.0   | 18.9  | 0.0  | 0.0   | 0.0   | 39.4  | 0.0   | 0.0   |
| LnGrp LOS                    | B   | A   |   | B   |   | B   |  |   |   | D   |   |   |
| Approach Vol, veh/h          |   | 1490  |   |   | 838   |   |  | 0   |   |   |   | 83  |
| Approach Delay, s/veh        |   | 1.0   |   |   | 18.5  |   |  | 0.0   |   |   |   | 39.4  |
| Approach LOS                 |   | A   |   |   | B   |   |  |   |   |   |   | D   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   | 3   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 24.2  | 22.8  | 63.0  |   | 24.2  |  | 85.8  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 4.5   | 4.5   | * 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 29.5  | 9.0   | * 59  |   | 29.5  |  | 71.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 8.3   | 2.0   | 21.7  |   | 0.0   |  | 2.0   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 0.0   | 2.2   | 1.2   |   | 0.0   |  | 3.1   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 8.4   |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | A   |   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |













HCM 2010 Signalized Intersection Summary  
 22: El Embarcadero & Grand Avenue

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              | →    | ↘    | ↙    | ←    | ↖    | ↗    |   |      |
|------------------------------|------|------|------|------|------|------|---|------|
| Movement                     | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |   |      |
| Lane Configurations          | ↑↑   |      | ↖    | ↑↑   | ↖    | ↗    |   |      |
| Traffic Volume (veh/h)       | 1029 | 510  | 179  | 626  | 225  | 92   |   |      |
| Future Volume (veh/h)        | 1029 | 510  | 179  | 626  | 225  | 92   |   |      |
| Number                       | 2    | 12   | 1    | 6    | 3    | 18   |   |      |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |   |      |
| Ped-Bike Adj(A_pbT)          |      | 0.87 | 1.00 |      | 1.00 | 1.00 |   |      |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Adj Sat Flow, veh/h/ln       | 1676 | 1710 | 1676 | 1676 | 1676 | 1676 |   |      |
| Adj Flow Rate, veh/h         | 1029 | 467  | 179  | 626  | 225  | 20   |   |      |
| Adj No. of Lanes             | 2    | 0    | 1    | 2    | 1    | 1    |   |      |
| Peak Hour Factor             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |   |      |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 2    | 2    | 2    |   |      |
| Cap, veh/h                   | 1204 | 524  | 213  | 2406 | 270  | 241  |   |      |
| Arrive On Green              | 0.58 | 0.57 | 0.27 | 1.00 | 0.17 | 0.17 |   |      |
| Sat Flow, veh/h              | 2144 | 896  | 1597 | 3269 | 1597 | 1425 |   |      |
| Grp Volume(v), veh/h         | 785  | 711  | 179  | 626  | 225  | 20   |   |      |
| Grp Sat Flow(s),veh/h/ln     | 1593 | 1364 | 1597 | 1593 | 1597 | 1425 |   |      |
| Q Serve(g_s), s              | 42.8 | 48.2 | 11.2 | 0.0  | 14.4 | 1.3  |   |      |
| Cycle Q Clear(g_c), s        | 42.8 | 48.2 | 11.2 | 0.0  | 14.4 | 1.3  |   |      |
| Prop In Lane                 |      | 0.66 | 1.00 |      | 1.00 | 1.00 |   |      |
| Lane Grp Cap(c), veh/h       | 931  | 797  | 213  | 2406 | 270  | 241  |   |      |
| V/C Ratio(X)                 | 0.84 | 0.89 | 0.84 | 0.26 | 0.83 | 0.08 |   |      |
| Avail Cap(c_a), veh/h        | 931  | 797  | 301  | 2406 | 603  | 538  |   |      |
| HCM Platoon Ratio            | 1.00 | 1.00 | 2.00 | 2.00 | 1.00 | 1.00 |   |      |
| Upstream Filter(I)           | 0.75 | 0.75 | 0.95 | 0.95 | 1.00 | 1.00 |   |      |
| Uniform Delay (d), s/veh     | 18.1 | 19.6 | 37.8 | 0.0  | 42.6 | 37.1 |   |      |
| Incr Delay (d2), s/veh       | 7.1  | 11.3 | 13.1 | 0.2  | 2.6  | 0.1  |   |      |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |   |      |
| %ile BackOfQ(50%),veh/ln     | 20.6 | 20.5 | 5.6  | 0.1  | 6.6  | 0.5  |   |      |
| LnGrp Delay(d),s/veh         | 25.2 | 30.9 | 50.9 | 0.2  | 45.2 | 37.2 |   |      |
| LnGrp LOS                    | C    | C    | D    | A    | D    | D    |   |      |
| Approach Vol, veh/h          | 1496 |      |      | 805  | 245  |      |   |      |
| Approach Delay, s/veh        | 27.9 |      |      | 11.5 | 44.5 |      |   |      |
| Approach LOS                 | C    |      |      | B    | D    |      |   |      |
| Timer                        | 1    | 2    | 3    | 4    | 5    | 6    | 7 | 8    |
| Assigned Phs                 | 1    | 2    |      |      |      | 6    |   | 8    |
| Phs Duration (G+Y+Rc), s     | 18.1 | 65.9 |      |      |      | 84.1 |   | 21.9 |
| Change Period (Y+Rc), s      | 4.5  | 5.5  |      |      |      | 5.5  |   | 4.5  |
| Max Green Setting (Gmax), s  | 19.5 | 32.5 |      |      |      | 56.5 |   | 39.5 |
| Max Q Clear Time (g_c+I1), s | 13.2 | 50.2 |      |      |      | 2.0  |   | 16.4 |
| Green Ext Time (p_c), s      | 0.5  | 0.0  |      |      |      | 22.3 |   | 1.0  |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |   |      |
| HCM 2010 Ctrl Delay          |      |      | 24.3 |      |      |      |   |      |
| HCM 2010 LOS                 |      |      | C    |      |      |      |   |      |

HCM 2010 Signalized Intersection Summary  
 23: Grand Avenue & MacArthur Boulevard

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   | ↑↑↑   |   |   |   |   |  | ↑↑  | ↑   | ↑   | ↑↑  |   |
| Traffic Volume (veh/h)       | 284   | 763   | 163   | 0   | 0   | 0   | 0  | 481   | 623   | 253   | 633   | 0   |
| Future Volume (veh/h)        | 284   | 763   | 163   | 0   | 0   | 0   | 0  | 481   | 623   | 253   | 633   | 0   |
| Number                       | 7   | 4   | 14  |   |   |   | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   |   |   |   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 0.80  |   |   |   | 1.00   |   | 1.00  | 1.00  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  |   |   |   | 0  | 1676  | 1676  | 1676  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 284   | 763   | 143   |   |   |   | 0  | 481   | 0   | 253   | 633   | 0   |
| Adj No. of Lanes             | 0   | 3   | 0   |   |   |   | 0  | 2   | 1   | 1   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 0   | 2   | 0   |   |   |   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 327   | 945   | 180   |   |   |   | 0  | 1262  | 565   | 275   | 1932  | 0   |
| Arrive On Green              | 0.32  | 0.32  | 0.31  |   |   |   | 0.00   | 0.40  | 0.00  | 0.35  | 1.00  | 0.00  |
| Sat Flow, veh/h              | 1027  | 2970  | 566   |   |   |   | 0  | 3269  | 1425  | 1597  | 3269  | 0   |
| Grp Volume(v), veh/h         | 449   | 384   | 357   |   |   |   | 0  | 481   | 0   | 253   | 633   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1625  | 1526  | 1412  |   |   |   | 0  | 1593  | 1425  | 1597  | 1593  | 0   |
| Q Serve(g_s), s              | 27.6  | 24.3  | 24.5  |   |   |   | 0.0  | 11.4  | 0.0   | 16.1  | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        | 27.6  | 24.3  | 24.5  |   |   |   | 0.0  | 11.4  | 0.0   | 16.1  | 0.0   | 0.0   |
| Prop In Lane                 | 0.63  |   | 0.40  |   |   |   | 0.00   |   | 1.00  | 1.00  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 517   | 485   | 449   |   |   |   | 0  | 1262  | 565   | 275   | 1932  | 0   |
| V/C Ratio(X)                 | 0.87  | 0.79  | 0.79  |   |   |   | 0.00   | 0.38  | 0.00  | 0.92  | 0.33  | 0.00  |
| Avail Cap(c_a), veh/h        | 567   | 533   | 493   |   |   |   | 0  | 1262  | 565   | 407   | 1932  | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  |   |   |   | 1.00   | 1.00  | 1.00  | 2.00  | 2.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 1.00  | 1.00  |   |   |   | 0.00   | 0.09  | 0.00  | 0.60  | 0.60  | 0.00  |
| Uniform Delay (d), s/veh     | 34.1  | 32.9  | 33.2  |   |   |   | 0.0  | 22.8  | 0.0   | 34.0  | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       | 11.9  | 6.4   | 7.1   |   |   |   | 0.0  | 0.1   | 0.0   | 10.5  | 0.3   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   |   |   |   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 14.1  | 11.1  | 10.4  |   |   |   | 0.0  | 5.0   | 0.0   | 7.8   | 0.1   | 0.0   |
| LnGrp Delay(d),s/veh         | 46.0  | 39.3  | 40.3  |   |   |   | 0.0  | 22.8  | 0.0   | 44.5  | 0.3   | 0.0   |
| LnGrp LOS                    | D   | D   | D   |   |   |   |  | C   |   | D   | A   |   |
| Approach Vol, veh/h          |   | 1190  |   |   |   |   |  | 481   |   |   | 886   |   |
| Approach Delay, s/veh        |   | 42.1  |   |   |   |   |  | 22.8  |   |   | 12.9  |   |
| Approach LOS                 |   | D   |   |   |   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 22.3  | 46.0  |   | 37.7  |   | 68.3  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      | 3.5   | 4.0   |   | 5.0   |   | 4.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  | 27.5  | 30.0  |   | 36.0  |   | 61.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 18.1  | 13.4  |   | 29.6  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.7   | 5.3   |   | 3.1   |   | 6.6   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 28.4  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | C   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 8.1

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      | ↔    | ↔    | ↔    | ↔    |      |      | ↔    |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 78   | 10   | 366  | 32   | 550  | 0    | 0    | 517  | 39   |
| Future Vol, veh/h        | 0    | 0    | 0    | 78   | 10   | 366  | 32   | 550  | 0    | 0    | 517  | 39   |
| Conflicting Peds, #/hr   | 0    | 0    | 32   | 32   | 0    | 0    | 99   | 0    | 130  | 130  | 0    | 99   |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | 100  | -    | 0    | 50   | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 0    | 78   | 10   | 366  | 32   | 550  | 0    | 0    | 517  | 39   |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 1183   | 1269   | 550    |
| Stage 1              | 614    | 614    | -      |
| Stage 2              | 569    | 655    | -      |
| Critical Hdwy        | 6.42   | 6.52   | 6.22   |
| Critical Hdwy Stg 1  | 5.42   | 5.52   | -      |
| Critical Hdwy Stg 2  | 5.42   | 5.52   | -      |
| Follow-up Hdwy       | 3.518  | 4.018  | 3.318  |
| Pot Cap-1 Maneuver   | 209    | 168    | 535    |
| Stage 1              | 540    | 483    | -      |
| Stage 2              | 566    | 463    | -      |
| Platoon blocked, %   |        |        |        |
| Mov Cap-1 Maneuver   | 195    | 0      | 535    |
| Mov Cap-2 Maneuver   | 195    | 0      | -      |
| Stage 1              | 521    | 0      | -      |
| Stage 2              | 549    | 0      | -      |

| Approach             | WB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 27.6 | 0.5 | 0  |
| HCM LOS              | D    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBTWBLn1 | WBLn2 | SBT   | SBR |
|-----------------------|-------|----------|-------|-------|-----|
| Capacity (veh/h)      | 904   | -        | 195   | 535   | -   |
| HCM Lane V/C Ratio    | 0.035 | -        | 0.451 | 0.684 | -   |
| HCM Control Delay (s) | 9.1   | -        | 37.8  | 25.1  | -   |
| HCM Lane LOS          | A     | -        | E     | D     | -   |
| HCM 95th %tile Q(veh) | 0.1   | -        | 2.1   | 5.2   | -   |



**Intersection**

Int Delay, s/veh 3.6

| Movement                 | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      | ↕    |      |      | ↗    |
| Traffic Vol, veh/h       | 0    | 0    | 209  | 19   | 0    | 118  |
| Future Vol, veh/h        | 0    | 0    | 209  | 19   | 0    | 118  |
| Conflicting Peds, #/hr   | 32   | 0    | 0    | 32   | 22   | 3    |
| Sign Control             | Free | Free | Free | Free | Stop | Stop |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | 0    |
| Veh in Median Storage, # | -    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 0    | 0    | 209  | 19   | 0    | 118  |

**Major/Minor**

|                      | Major2 | Minor2 |
|----------------------|--------|--------|
| Conflicting Flow All | -      | 0      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Critical Hdwy        | -      | -      |
| Critical Hdwy Stg 1  | -      | -      |
| Critical Hdwy Stg 2  | -      | -      |
| Follow-up Hdwy       | -      | -      |
| Pot Cap-1 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |
| Platoon blocked, %   | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      |
| Stage 1              | -      | -      |
| Stage 2              | -      | -      |

**Approach**


















|                      | WB | SB   |
|----------------------|----|------|
| HCM Control Delay, s | 0  | 10.6 |
| HCM LOS              |    | B    |

**Minor Lane/Major Mvmt**

|                       | WBT | WBR | SBLn1 |
|-----------------------|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | 761   |
| HCM Lane V/C Ratio    | -   | -   | 0.155 |
| HCM Control Delay (s) | -   | -   | 10.6  |
| HCM Lane LOS          | -   | -   | B     |
| HCM 95th %tile Q(veh) | -   | -   | 0.5   |

HCM 2010 Signalized Intersection Summary  
26: Broadway & 22nd Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 19  | 139   | 452   | 53   | 688   | 0   | 0   | 476   | 42  |
| Future Volume (veh/h)        | 0   | 0   | 0   | 19  | 139   | 452   | 53   | 688   | 0   | 0   | 476   | 42  |
| Number                       |   |   |   | 7   | 4   | 14  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.86  | 0.93   |   | 1.00  | 1.00  |   | 0.83  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1676  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 19  | 139   | 308   | 53   | 688   | 0   | 0   | 476   | 38  |
| Adj No. of Lanes             |   |   |   | 0   | 1   | 2   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 46  | 334   | 493   | 156  | 1875  | 0   | 0   | 1992  | 158   |
| Arrive On Green              |   |   |   | 0.23  | 0.23  | 0.23  | 0.68   | 0.68  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 200   | 1466  | 2163  | 158  | 2842  | 0   | 0   | 3022  | 233   |
| Grp Volume(v), veh/h         |   |   |   | 158   | 0   | 308   | 376  | 365   | 0   | 0   | 256   | 258   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1666  | 0   | 1081  | 1475   | 1449  | 0   | 0   | 1593  | 1579  |
| Q Serve(g_s), s              |   |   |   | 6.9   | 0.0   | 10.9  | 0.0  | 9.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 6.9   | 0.0   | 10.9  | 7.9  | 9.2   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.12  |   | 1.00  | 0.14   |   | 0.00  | 0.00  |   | 0.15  |
| Lane Grp Cap(c), veh/h       |   |   |   | 380   | 0   | 493   | 1048   | 983   | 0   | 0   | 1080  | 1070  |
| V/C Ratio(X)                 |   |   |   | 0.42  | 0.00  | 0.63  | 0.36   | 0.37  | 0.00  | 0.00  | 0.24  | 0.24  |
| Avail Cap(c_a), veh/h        |   |   |   | 549   | 0   | 712   | 1048   | 983   | 0   | 0   | 1080  | 1070  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.96   | 0.96  | 0.00  | 0.00  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     |   |   |   | 28.0  | 0.0   | 29.5  | 5.7  | 5.9   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.3   | 0.0   | 0.5   | 0.9  | 1.0   | 0.0   | 0.0   | 0.5   | 0.5   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 3.2   | 0.0   | 3.3   | 3.9  | 3.9   | 0.0   | 0.0   | 0.1   | 0.2   |
| LnGrp Delay(d),s/veh         |   |   |   | 28.3  | 0.0   | 30.0  | 6.6  | 6.9   | 0.0   | 0.0   | 0.5   | 0.5   |
| LnGrp LOS                    |   |   |   | C   |   | C   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 466   |   |  | 741   |   |   | 514   |   |
| Approach Delay, s/veh        |   |   |   |   | 29.4  |   |  | 6.8   |   |   | 0.5   |   |
| Approach LOS                 |   |   |   |   | C   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  |   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 61.6  |   | 23.4  |   | 61.6  |  |   |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.5   |   | 5.0   |  |   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 48.0  |   | 27.5  |   | 48.0  |  |   |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 11.2  |   | 12.9  |   | 2.0   |  |   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 6.7   |   | 2.2   |   | 6.8   |  |   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.0  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

**Intersection**

Int Delay, s/veh 3.1

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | 4TB  |      |      |      |      |      | TB   |      | TB   | TB   |      |
| Traffic Vol, veh/h       | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 444  | 75   | 126  | 473  | 0    |
| Future Vol, veh/h        | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 444  | 75   | 126  | 473  | 0    |
| Conflicting Peds, #/hr   | 23   | 0    | 33   | 33   | 0    | 23   | 101  | 0    | 182  | 182  | 0    | 101  |
| Sign Control             | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | 120  | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | -    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 48   | 14   | 36   | 0    | 0    | 0    | 0    | 444  | 75   | 126  | 473  | 0    |


















| Major/Minor          | Minor2 |       |       | Major1 |   |   | Major2 |   |   |
|----------------------|--------|-------|-------|--------|---|---|--------|---|---|
| Conflicting Flow All | 1230   | 1426  | 506   | -      | 0 | 0 | 701    | 0 | 0 |
| Stage 1              | 725    | 725   | -     | -      | - | - | -      | - | - |
| Stage 2              | 505    | 701   | -     | -      | - | - | -      | - | - |
| Critical Hdwy        | 6.42   | 6.52  | 6.22  | -      | - | - | 4.12   | - | - |
| Critical Hdwy Stg 1  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Critical Hdwy Stg 2  | 5.42   | 5.52  | -     | -      | - | - | -      | - | - |
| Follow-up Hdwy       | 3.518  | 4.018 | 3.318 | -      | - | - | 2.218  | - | - |
| Pot Cap-1 Maneuver   | 196    | 135   | 566   | 0      | - | - | 896    | - | 0 |
| Stage 1              | 479    | 430   | -     | 0      | - | - | -      | - | 0 |
| Stage 2              | 606    | 441   | -     | 0      | - | - | -      | - | 0 |
| Platoon blocked, %   |        |       |       |        |   |   |        |   |   |
| Mov Cap-1 Maneuver   | 168    | 0     | 548   | -      | - | - | 876    | - | - |
| Mov Cap-2 Maneuver   | 168    | 0     | -     | -      | - | - | -      | - | - |
| Stage 1              | 410    | 0     | -     | -      | - | - | -      | - | - |
| Stage 2              | 606    | 0     | -     | -      | - | - | -      | - | - |

| Approach             | EB   | NB | SB  |
|----------------------|------|----|-----|
| HCM Control Delay, s | 25.8 | 0  | 2.1 |
| HCM LOS              | D    |    |     |

| Minor Lane/Major Mvmt | NBT | NBR | EBLn1 | EBLn2 | SBL   | SBT |
|-----------------------|-----|-----|-------|-------|-------|-----|
| Capacity (veh/h)      | -   | -   | 168   | 548   | 876   | -   |
| HCM Lane V/C Ratio    | -   | -   | 0.327 | 0.078 | 0.144 | -   |
| HCM Control Delay (s) | -   | -   | 36.5  | 12.1  | 9.8   | -   |
| HCM Lane LOS          | -   | -   | E     | B     | A     | -   |
| HCM 95th %tile Q(veh) | -   | -   | 1.3   | 0.3   | 0.5   | -   |

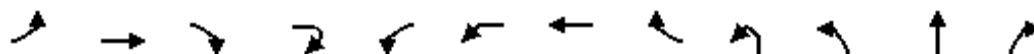
HCM 2010 Signalized Intersection Summary  
28: Broadway & 21st Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 124   | 99  | 266   | 30  | 0   | 90  | 0  | 508   | 28  | 42  | 456   | 0   |
| Future Volume (veh/h)        | 124   | 99  | 266   | 30  | 0   | 90  | 0  | 508   | 28  | 42  | 456   | 0   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.95  |   | 0.87  | 0.96  |   | 0.87  | 1.00   |   | 0.76  | 0.91  |   | 1.00  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1710  | 0  | 1676  | 1710  | 1710  | 1676  | 0   |
| Adj Flow Rate, veh/h         | 124   | 99  | 240   | 30  | 0   | 29  | 0  | 508   | 22  | 42  | 456   | 0   |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 0  | 2   | 2   | 2   | 2   | 0   |
| Cap, veh/h                   | 396   | 125   | 304   | 124   | 20  | 65  | 0  | 1733  | 75  | 156   | 1542  | 0   |
| Arrive On Green              | 0.32  | 0.32  | 0.30  | 0.32  | 0.00  | 0.30  | 0.00   | 1.00  | 1.00  | 0.57  | 0.57  | 0.00  |
| Sat Flow, veh/h              | 1177  | 391   | 949   | 146   | 63  | 202   | 0  | 3147  | 132   | 170   | 2801  | 0   |
| Grp Volume(v), veh/h         | 124   | 0   | 339   | 59  | 0   | 0   | 0  | 263   | 267   | 254   | 244   | 0   |
| Grp Sat Flow(s),veh/h/ln     | 1177  | 0   | 1340  | 410   | 0   | 0   | 0  | 1593  | 1603  | 1446  | 1449  | 0   |
| Q Serve(g_s), s              | 0.0   | 0.0   | 16.2  | 1.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 6.1   | 0.0   |
| Cycle Q Clear(g_c), s        | 8.3   | 0.0   | 16.2  | 17.3  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 5.4   | 6.1   | 0.0   |
| Prop In Lane                 | 1.00  |   | 0.71  | 0.51  |   | 0.49  | 0.00   |   | 0.08  | 0.17  |   | 0.00  |
| Lane Grp Cap(c), veh/h       | 396   | 0   | 429   | 209   | 0   | 0   | 0  | 901   | 907   | 878   | 820   | 0   |
| V/C Ratio(X)                 | 0.31  | 0.00  | 0.79  | 0.28  | 0.00  | 0.00  | 0.00   | 0.29  | 0.29  | 0.29  | 0.30  | 0.00  |
| Avail Cap(c_a), veh/h        | 406   | 0   | 440   | 218   | 0   | 0   | 0  | 901   | 907   | 878   | 820   | 0   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 2.00  | 2.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 1.00  | 0.00  | 1.00  | 0.91  | 0.00  | 0.00  | 0.00   | 0.93  | 0.93  | 0.97  | 0.97  | 0.00  |
| Uniform Delay (d), s/veh     | 19.0  | 0.0   | 22.2  | 19.4  | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 7.8   | 7.9   | 0.0   |
| Incr Delay (d2), s/veh       | 0.2   | 0.0   | 8.4   | 0.2   | 0.0   | 0.0   | 0.0  | 0.8   | 0.8   | 0.8   | 0.9   | 0.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.9   | 0.0   | 7.0   | 1.1   | 0.0   | 0.0   | 0.0  | 0.2   | 0.2   | 2.7   | 2.6   | 0.0   |
| LnGrp Delay(d),s/veh         | 19.2  | 0.0   | 30.6  | 19.6  | 0.0   | 0.0   | 0.0  | 0.8   | 0.8   | 8.6   | 8.8   | 0.0   |
| LnGrp LOS                    | B   |   | C   | B   |   |   |  | A   | A   | A   | A   |   |
| Approach Vol, veh/h          |   | 463   |   |   | 59  |   |  | 530   |   |   | 498   |   |
| Approach Delay, s/veh        |   | 27.5  |   |   | 19.6  |   |  | 0.8   |   |   | 8.7   |   |
| Approach LOS                 |   | C   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.6  |   | 26.4  |   | 43.6  |  | 26.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 5.5   |   | 5.0   |  | 5.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 38.0  |   | 21.5  |   | 38.0  |  | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   | 18.2  |   | 8.1   |  | 19.3  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 5.1   |   | 0.9   |   | 5.0   |  | 0.6   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 12.0  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street

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| Movement               | EBL  | EBT  | EBR  | EBR2 | WBL2 | WBL  | WBT   | WBR  | NBL2 | NBL  | NBT  | NBR  |
|------------------------|------|------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations    |      | ↕    |      |      | ↙    |      | ↕     |      |      | ↘    | ↕    |      |
| Traffic Volume (vph)   | 36   | 29   | 13   | 42   | 41   | 152  | 4     | 163  | 2    | 5    | 377  | 59   |
| Future Volume (vph)    | 36   | 29   | 13   | 42   | 41   | 152  | 4     | 163  | 2    | 5    | 377  | 59   |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      | 4.0  |      |      | 4.0  |      | 4.0   |      |      | 4.0  | 4.0  |      |
| Lane Util. Factor      |      | 1.00 |      |      | 0.95 |      | 0.95  |      |      | 1.00 | 0.95 |      |
| Frbp, ped/bikes        |      | 0.99 |      |      | 1.00 |      | 1.00  |      |      | 1.00 | 0.99 |      |
| Flpb, ped/bikes        |      | 1.00 |      |      | 0.99 |      | 0.99  |      |      | 0.99 | 1.00 |      |
| Frt                    |      | 0.94 |      |      | 1.00 |      | 0.92  |      |      | 1.00 | 0.98 |      |
| Flt Protected          |      | 0.99 |      |      | 0.95 |      | 0.98  |      |      | 0.95 | 1.00 |      |
| Satd. Flow (prot)      |      | 1522 |      |      | 1492 |      | 1428  |      |      | 1572 | 3087 |      |
| Flt Permitted          |      | 0.73 |      |      | 0.67 |      | 0.78  |      |      | 0.57 | 1.00 |      |
| Satd. Flow (perm)      |      | 1122 |      |      | 1055 |      | 1147  |      |      | 942  | 3087 |      |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 36   | 29   | 13   | 42   | 41   | 152  | 4     | 163  | 2    | 5    | 377  | 59   |
| RTOR Reduction (vph)   | 0    | 25   | 0    | 0    | 0    | 0    | 48    | 0    | 0    | 0    | 13   | 0    |
| Lane Group Flow (vph)  | 0    | 95   | 0    | 0    | 37   | 0    | 275   | 0    | 0    | 7    | 423  | 0    |
| Confl. Peds. (#/hr)    | 23   |      |      | 19   | 19   |      |       |      |      | 10   |      | 32   |
| Confl. Bikes (#/hr)    |      |      |      | 2    |      |      |       |      |      |      |      |      |
| Turn Type              | Perm | NA   |      |      | Perm | Perm | NA    |      | Perm | Perm | NA   |      |
| Protected Phases       |      | 3    |      |      |      |      | 3     |      |      |      | 2    |      |
| Permitted Phases       | 3    |      |      |      | 3    | 3    |       |      | 2    | 2    |      |      |
| Actuated Green, G (s)  |      | 23.2 |      |      | 23.2 |      | 23.2  |      |      | 37.1 | 37.1 |      |
| Effective Green, g (s) |      | 24.2 |      |      | 24.2 |      | 24.2  |      |      | 39.1 | 39.1 |      |
| Actuated g/C Ratio     |      | 0.28 |      |      | 0.28 |      | 0.28  |      |      | 0.46 | 0.46 |      |
| Clearance Time (s)     |      | 5.0  |      |      | 5.0  |      | 5.0   |      |      | 6.0  | 6.0  |      |
| Vehicle Extension (s)  |      | 2.0  |      |      | 2.0  |      | 2.0   |      |      | 2.0  | 2.0  |      |
| Lane Grp Cap (vph)     |      | 319  |      |      | 300  |      | 326   |      |      | 433  | 1420 |      |
| v/s Ratio Prot         |      |      |      |      |      |      |       |      |      |      | 0.14 |      |
| v/s Ratio Perm         |      | 0.08 |      |      | 0.04 |      | c0.24 |      |      | 0.01 |      |      |
| v/c Ratio              |      | 0.30 |      |      | 0.12 |      | 0.84  |      |      | 0.02 | 0.30 |      |
| Uniform Delay, d1      |      | 23.8 |      |      | 22.5 |      | 28.6  |      |      | 12.5 | 14.4 |      |
| Progression Factor     |      | 1.00 |      |      | 1.00 |      | 1.00  |      |      | 1.19 | 1.00 |      |
| Incremental Delay, d2  |      | 0.2  |      |      | 0.1  |      | 17.1  |      |      | 0.1  | 0.5  |      |
| Delay (s)              |      | 23.9 |      |      | 22.6 |      | 45.7  |      |      | 14.9 | 14.8 |      |
| Level of Service       |      | C    |      |      | C    |      | D     |      |      | B    | B    |      |
| Approach Delay (s)     |      | 23.9 |      |      |      |      | 43.3  |      |      |      | 14.8 |      |
| Approach LOS           |      | C    |      |      |      |      | D     |      |      |      | B    |      |

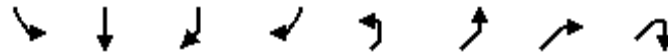
Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 23.5  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.51  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 73.8% | ICU Level of Service      | D    |
| Analysis Period (min)             | 15    |                           |      |

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis  
 29: MLK Jr. Way & San Pablo Avenue & 20th Street





















2100 Telegraph  
 Existing Plus Project Conditions PM



| Movement                    | SBL   | SBT  | SBR   | SBR2 | NEL2 | NEL   | NER  | NER2 |
|-----------------------------|-------|------|-------|------|------|-------|------|------|
| Lane Configurations         | ↩     | ↑↑   | ↪     |      |      | ↩     |      |      |
| Traffic Volume (vph)        | 106   | 292  | 120   | 8    | 1    | 99    | 67   | 2    |
| Future Volume (vph)         | 106   | 292  | 120   | 8    | 1    | 99    | 67   | 2    |
| Ideal Flow (vphpl)          | 1900  | 1900 | 1900  | 1900 | 1900 | 1900  | 1900 | 1900 |
| Total Lost time (s)         | 4.0   | 4.0  | 4.0   |      |      | 4.0   |      |      |
| Lane Util. Factor           | 1.00  | 0.95 | 1.00  |      |      | 0.97  |      |      |
| Frbp, ped/bikes             | 1.00  | 1.00 | 0.97  |      |      | 1.00  |      |      |
| Flpb, ped/bikes             | 0.97  | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Frt                         | 1.00  | 1.00 | 0.85  |      |      | 0.94  |      |      |
| Flt Protected               | 0.95  | 1.00 | 1.00  |      |      | 0.97  |      |      |
| Satd. Flow (prot)           | 1542  | 3185 | 1377  |      |      | 2965  |      |      |
| Flt Permitted               | 0.46  | 1.00 | 1.00  |      |      | 0.95  |      |      |
| Satd. Flow (perm)           | 754   | 3185 | 1377  |      |      | 2910  |      |      |
| Peak-hour factor, PHF       | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Adj. Flow (vph)             | 106   | 292  | 120   | 8    | 1    | 99    | 67   | 2    |
| RTOR Reduction (vph)        | 0     | 0    | 11    | 0    | 0    | 0     | 0    | 0    |
| Lane Group Flow (vph)       | 106   | 292  | 117   | 0    | 0    | 169   | 0    | 0    |
| Confl. Peds. (#/hr)         | 32    |      |       | 10   |      |       |      |      |
| Confl. Bikes (#/hr)         |       |      |       | 5    |      |       |      |      |
| Turn Type                   | Perm  | NA   | pm+ov |      | D.Pm | Prot  |      |      |
| Protected Phases            |       | 6    | 4     |      |      | 4     |      |      |
| Permitted Phases            | 6     |      | 6     |      | 4    |       |      |      |
| Actuated Green, G (s)       | 37.1  | 37.1 | 45.8  |      |      | 8.7   |      |      |
| Effective Green, g (s)      | 39.1  | 39.1 | 47.8  |      |      | 9.7   |      |      |
| Actuated g/C Ratio          | 0.46  | 0.46 | 0.56  |      |      | 0.11  |      |      |
| Clearance Time (s)          | 6.0   | 6.0  | 5.0   |      |      | 5.0   |      |      |
| Vehicle Extension (s)       | 2.0   | 2.0  | 2.0   |      |      | 2.0   |      |      |
| Lane Grp Cap (vph)          | 346   | 1465 | 839   |      |      | 332   |      |      |
| v/s Ratio Prot              |       | 0.09 | 0.02  |      |      |       |      |      |
| v/s Ratio Perm              | c0.14 |      | 0.07  |      |      | c0.06 |      |      |
| v/c Ratio                   | 0.31  | 0.20 | 0.14  |      |      | 0.51  |      |      |
| Uniform Delay, d1           | 14.4  | 13.6 | 8.8   |      |      | 35.4  |      |      |
| Progression Factor          | 1.00  | 1.00 | 1.00  |      |      | 1.00  |      |      |
| Incremental Delay, d2       | 2.3   | 0.3  | 0.0   |      |      | 0.4   |      |      |
| Delay (s)                   | 16.7  | 13.9 | 8.9   |      |      | 35.9  |      |      |
| Level of Service            | B     | B    | A     |      |      | D     |      |      |
| Approach Delay (s)          |       | 13.3 |       |      |      | 35.9  |      |      |
| Approach LOS                |       | B    |       |      |      | D     |      |      |
| <b>Intersection Summary</b> |       |      |       |      |      |       |      |      |

















HCM 2010 Signalized Intersection Summary  
30: Telegraph Avenue & 20th Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |  |   |   |  |  |   |   |   |  |  |   |
| Traffic Volume (veh/h)       | 99  | 132   | 26  | 20  | 213   | 220   | 11   | 253   | 40  | 105   | 300   | 87  |
| Future Volume (veh/h)        | 99  | 132   | 26  | 20  | 213   | 220   | 11   | 253   | 40  | 105   | 300   | 87  |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.88  |   | 0.77  | 0.85  |   | 0.76  | 0.88   |   | 0.83  | 0.97  |   | 0.81  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 1676  | 1710  | 1710  | 1676  | 1676  | 1676   | 1676  | 1710  | 1676  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 99  | 132   | 12  | 20  | 213   | 70  | 11   | 253   | 32  | 105   | 300   | 73  |
| Adj No. of Lanes             | 1   | 1   | 0   | 0   | 1   | 1   | 1  | 1   | 0   | 1   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 333   | 516   | 47  | 86  | 551   | 383   | 407  | 529   | 67  | 439   | 639   | 156   |
| Arrive On Green              | 0.35  | 0.35  | 0.34  | 0.35  | 0.35  | 0.35  | 0.12   | 0.12  | 0.12  | 0.08  | 0.52  | 0.51  |
| Sat Flow, veh/h              | 866   | 1471  | 134   | 60  | 1571  | 1090  | 795  | 1422  | 180   | 1597  | 1240  | 302   |
| Grp Volume(v), veh/h         | 99  | 0   | 144   | 233   | 0   | 70  | 11   | 0   | 285   | 105   | 0   | 373   |
| Grp Sat Flow(s),veh/h/ln     | 866   | 0   | 1605  | 1630  | 0   | 1090  | 795  | 0   | 1601  | 1597  | 0   | 1542  |
| Q Serve(g_s), s              | 5.8   | 0.0   | 3.8   | 0.0   | 0.0   | 2.7   | 0.7  | 0.0   | 10.0  | 2.2   | 0.0   | 9.3   |
| Cycle Q Clear(g_c), s        | 12.1  | 0.0   | 3.8   | 6.3   | 0.0   | 2.7   | 1.4  | 0.0   | 10.0  | 2.2   | 0.0   | 9.3   |
| Prop In Lane                 | 1.00  |   | 0.08  | 0.09  |   | 1.00  | 1.00   |   | 0.11  | 1.00  |   | 0.20  |
| Lane Grp Cap(c), veh/h       | 333   | 0   | 563   | 637   | 0   | 383   | 407  | 0   | 595   | 439   | 0   | 795   |
| V/C Ratio(X)                 | 0.30  | 0.00  | 0.26  | 0.37  | 0.00  | 0.18  | 0.03   | 0.00  | 0.48  | 0.24  | 0.00  | 0.47  |
| Avail Cap(c_a), veh/h        | 347   | 0   | 589   | 662   | 0   | 400   | 407  | 0   | 595   | 502   | 0   | 795   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 0.33   | 0.33  | 0.33  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           | 0.95  | 0.00  | 0.95  | 0.87  | 0.00  | 0.87  | 0.99   | 0.00  | 0.99  | 1.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     | 19.2  | 0.0   | 13.9  | 14.7  | 0.0   | 13.5  | 17.4   | 0.0   | 20.9  | 9.9   | 0.0   | 9.3   |
| Incr Delay (d2), s/veh       | 0.2   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.1  | 0.0   | 2.7   | 0.1   | 0.0   | 2.0   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.4   | 0.0   | 1.7   | 2.9   | 0.0   | 0.8   | 0.2  | 0.0   | 4.9   | 0.9   | 0.0   | 4.4   |
| LnGrp Delay(d),s/veh         | 19.4  | 0.0   | 14.0  | 14.8  | 0.0   | 13.6  | 17.6   | 0.0   | 23.6  | 10.0  | 0.0   | 11.3  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   | B  |   | C   | B   |   | B   |
| Approach Vol, veh/h          |   | 243   |   |   | 303   |   |  | 296   |   |   | 478   |   |
| Approach Delay, s/veh        |   | 16.2  |   |   | 14.5  |   |  | 23.4  |   |   | 11.0  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | C   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 | 1   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     | 8.6   | 26.3  |   | 25.1  |   | 34.9  |  | 25.1  |   |   |   |   |
| Change Period (Y+Rc), s      | 4.5   | 4.5   |   | 4.5   |   | 4.5   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  | 6.5   | 18.5  |   | 21.5  |   | 29.5  |  | 21.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s | 4.2   | 12.0  |   | 14.1  |   | 11.3  |  | 8.3   |   |   |   |   |
| Green Ext Time (p_c), s      | 0.1   | 1.8   |   | 1.7   |   | 3.0   |  | 2.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   | 15.6  |   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   | B   |   |   |   |  |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
31: Broadway & 20th Street

















2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |  |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 29  | 197   | 94  | 54  | 202   | 58  | 78   | 430   | 63  | 61  | 592   | 126   |
| Future Volume (veh/h)        | 29  | 197   | 94  | 54  | 202   | 58  | 78   | 430   | 63  | 61  | 592   | 126   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 0.85  |   | 0.75  | 0.84  |   | 0.75  | 1.00   |   | 0.84  | 0.93  |   | 0.70  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1710  | 1676  | 1710  | 1710  | 1676  | 1710  | 1710   | 1676  | 1710  | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 29  | 197   | 23  | 54  | 202   | 26  | 78   | 430   | 52  | 61  | 592   | 113   |
| Adj No. of Lanes             | 0   | 2   | 0   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 2   | 2   | 2   | 2   | 2   | 2  | 2   | 2   | 2   | 2   | 2   |
| Cap, veh/h                   | 134   | 774   | 88  | 194   | 652   | 85  | 72   | 777   | 131   | 197   | 1738  | 316   |
| Arrive On Green              | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 1.00  | 0.37  | 0.37  | 0.36  |
| Sat Flow, veh/h              | 219   | 2363  | 268   | 378   | 1992  | 260   | 7  | 1392  | 234   | 240   | 3113  | 566   |
| Grp Volume(v), veh/h         | 131   | 0   | 118   | 144   | 0   | 138   | 242  | 0   | 318   | 276   | 261   | 228   |
| Grp Sat Flow(s),veh/h/ln     | 1477  | 0   | 1374  | 1253  | 0   | 1377  | 202  | 0   | 1432  | 1389  | 1388  | 1142  |
| Q Serve(g_s), s              | 0.0   | 0.0   | 4.4   | 1.7   | 0.0   | 5.2   | 10.0   | 0.0   | 0.0   | 1.5   | 9.4   | 10.2  |
| Cycle Q Clear(g_c), s        | 4.0   | 0.0   | 4.4   | 6.1   | 0.0   | 5.2   | 10.0   | 0.0   | 0.0   | 8.5   | 9.4   | 10.2  |
| Prop In Lane                 | 0.22  |   | 0.20  | 0.37  |   | 0.19  | 0.32   |   | 0.16  | 0.22  |   | 0.50  |
| Lane Grp Cap(c), veh/h       | 546   | 0   | 450   | 481   | 0   | 451   | 0  | 0   | 799   | 838   | 775   | 638   |
| V/C Ratio(X)                 | 0.24  | 0.00  | 0.26  | 0.30  | 0.00  | 0.31  | 0.00   | 0.00  | 0.40  | 0.33  | 0.34  | 0.36  |
| Avail Cap(c_a), veh/h        | 568   | 0   | 471   | 500   | 0   | 472   | 0  | 0   | 799   | 838   | 775   | 638   |
| HCM Platoon Ratio            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 2.00  | 0.67  | 0.67  | 0.67  |
| Upstream Filter(I)           | 0.97  | 0.00  | 0.97  | 0.97  | 0.00  | 0.97  | 0.90   | 0.00  | 0.90  | 0.96  | 0.96  | 0.96  |
| Uniform Delay (d), s/veh     | 17.2  | 0.0   | 17.3  | 17.6  | 0.0   | 17.6  | 0.0  | 0.0   | 0.0   | 12.2  | 12.6  | 13.0  |
| Incr Delay (d2), s/veh       | 0.1   | 0.0   | 0.1   | 0.1   | 0.0   | 0.1   | 0.0  | 0.0   | 1.3   | 1.0   | 1.1   | 1.5   |
| Initial Q Delay(d3),s/veh    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     | 1.9   | 0.0   | 1.7   | 2.1   | 0.0   | 2.0   | 0.0  | 0.0   | 0.3   | 4.0   | 3.9   | 3.5   |
| LnGrp Delay(d),s/veh         | 17.3  | 0.0   | 17.4  | 17.7  | 0.0   | 17.7  | 0.0  | 0.0   | 1.3   | 13.2  | 13.8  | 14.5  |
| LnGrp LOS                    | B   |   | B   | B   |   | B   |  |   | A   | B   | B   | B   |
| Approach Vol, veh/h          |   | 249   |   |   | 282   |   |  | 560   |   |   | 766   |   |
| Approach Delay, s/veh        |   | 17.3  |   |   | 17.7  |   |  | 0.8   |   |   | 13.8  |   |
| Approach LOS                 |   | B   |   |   | B   |   |  | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   | 4   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 43.1  |   | 26.9  |   | 43.1  |  | 26.9  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   | 4.0   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 37.0  |   | 24.0  |   | 28.0  |  | 24.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 12.0  |   | 6.4   |   | 12.2  |  | 8.1   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 7.4   |   | 2.3   |   | 6.2   |  | 2.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 10.9  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |



HCM 2010 Signalized Intersection Summary  
 32: Brush Street & 18th Street

2100 Telegraph  
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|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |   |  |   |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 245   | 151   | 0   | 0  | 0   | 0   | 0   | 1215  | 146   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 245   | 151   | 0   | 0  | 0   | 0   | 0   | 1215  | 146   |
| Number                       |   |   |   | 3   | 8   | 18  |  |   |   | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   |  |   |   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 1.00  |  |   |   | 1.00  |   | 0.99  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 0   |  |   |   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 245   | 151   | 0   |  |   |   | 0   | 1215  | 131   |
| Adj No. of Lanes             |   |   |   | 1   | 2   | 0   |  |   |   | 0   | 4   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 0   |  |   |   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 453   | 734   | 0   |  |   |   | 0   | 3126  | 335   |
| Arrive On Green              |   |   |   | 0.08  | 0.08  | 0.00  |  |   |   | 0.00  | 0.59  | 0.56  |
| Sat Flow, veh/h              |   |   |   | 1597  | 3269  | 0   |  |   |   | 0   | 5559  | 571   |
| Grp Volume(v), veh/h         |   |   |   | 245   | 151   | 0   |  |   |   | 0   | 986   | 360   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1593  | 0   |  |   |   | 0   | 1442  | 1570  |
| Q Serve(g_s), s              |   |   |   | 12.7  | 3.8   | 0.0   |  |   |   | 0.0   | 10.4  | 10.6  |
| Cycle Q Clear(g_c), s        |   |   |   | 12.7  | 3.8   | 0.0   |  |   |   | 0.0   | 10.4  | 10.6  |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.00  |  |   |   | 0.00  |   | 0.36  |
| Lane Grp Cap(c), veh/h       |   |   |   | 453   | 734   | 0   |  |   |   | 0   | 2539  | 922   |
| V/C Ratio(X)                 |   |   |   | 0.54  | 0.21  | 0.00  |  |   |   | 0.00  | 0.39  | 0.39  |
| Avail Cap(c_a), veh/h        |   |   |   | 594   | 1016  | 0   |  |   |   | 0   | 2539  | 922   |
| HCM Platoon Ratio            |   |   |   | 0.33  | 0.33  | 1.00  |  |   |   | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 0.71  | 0.71  | 0.00  |  |   |   | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 36.1  | 32.0  | 0.0   |  |   |   | 0.0   | 9.4   | 9.6   |
| Incr Delay (d2), s/veh       |   |   |   | 0.3   | 0.0   | 0.0   |  |   |   | 0.0   | 0.4   | 1.2   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   |  |   |   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 5.7   | 1.7   | 0.0   |  |   |   | 0.0   | 4.2   | 4.9   |
| LnGrp Delay(d),s/veh         |   |   |   | 36.3  | 32.0  | 0.0   |  |   |   | 0.0   | 9.8   | 10.9  |
| LnGrp LOS                    |   |   |   | D   | C   |   |  |   |   |   | A   | B   |
| Approach Vol, veh/h          |   |   |   |   | 396   |   |  |   |   |   | 1346  |   |
| Approach Delay, s/veh        |   |   |   |   | 34.7  |   |  |   |   |   | 10.1  |   |
| Approach LOS                 |   |   |   |   | C   |   |  |   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   |   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   |   |   |   |   | 53.9  |  | 23.6  |   |   |   |   |
| Change Period (Y+Rc), s      |   |   |   |   |   | 6.0   |  | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   |   |   |   |   | 47.9  |  | 26.6  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   |   |   |   |   | 12.6  |  | 14.7  |   |   |   |   |
| Green Ext Time (p_c), s      |   |   |   |   |   | 7.7   |  | 1.3   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 15.7  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 33: Castro Street & 18th Street & I-980 NB On-Ramp

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
















| Movement               | WBT   | WBR  | WBR2 | NBL2  | NBL   | NBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    | ↔    |      | ↔     | ↔     | ↑↑↑  |
| Traffic Volume (vph)   | 290   | 323  | 85   | 106   | 1029  | 363  |
| Future Volume (vph)    | 290   | 323  | 85   | 106   | 1029  | 363  |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   | 4.0  |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.91  | 0.91 |      | 0.86  | 0.81  | 0.81 |
| Frbp, ped/bikes        | 0.99  | 0.95 |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.94  | 0.85 |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  | 1.00 |      | 0.95  | 0.95  | 0.97 |
| Satd. Flow (prot)      | 2833  | 1229 |      | 1370  | 1290  | 3957 |
| Flt Permitted          | 1.00  | 1.00 |      | 0.95  | 0.95  | 0.97 |
| Satd. Flow (perm)      | 2833  | 1229 |      | 1370  | 1290  | 3957 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 290   | 323  | 85   | 106   | 1029  | 363  |
| RTOR Reduction (vph)   | 0     | 29   | 0    | 0     | 0     | 0    |
| Lane Group Flow (vph)  | 481   | 188  | 0    | 95    | 515   | 888  |
| Confl. Peds. (#/hr)    |       | 8    | 8    |       |       |      |
| Confl. Bikes (#/hr)    |       | 10   | 10   |       |       |      |
| Turn Type              | NA    | Perm |      | Split | Split | NA   |
| Protected Phases       | 8     |      |      | 2     | 2     | 2    |
| Permitted Phases       |       | 8    |      |       |       |      |
| Actuated Green, G (s)  | 18.4  | 18.4 |      | 57.1  | 57.1  | 57.1 |
| Effective Green, g (s) | 18.9  | 18.9 |      | 58.1  | 58.1  | 58.1 |
| Actuated g/C Ratio     | 0.22  | 0.22 |      | 0.68  | 0.68  | 0.68 |
| Clearance Time (s)     | 4.5   | 4.5  |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   | 2.0  |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 629   | 273  |      | 936   | 881   | 2704 |
| v/s Ratio Prot         | c0.17 |      |      | 0.07  | c0.40 | 0.22 |
| v/s Ratio Perm         |       | 0.15 |      |       |       |      |
| v/c Ratio              | 0.76  | 0.69 |      | 0.10  | 0.58  | 0.33 |
| Uniform Delay, d1      | 31.0  | 30.4 |      | 4.6   | 7.1   | 5.5  |
| Progression Factor     | 1.00  | 1.00 |      | 1.00  | 1.00  | 1.00 |
| Incremental Delay, d2  | 5.0   | 5.7  |      | 0.2   | 2.8   | 0.3  |
| Delay (s)              | 35.9  | 36.0 |      | 4.8   | 9.9   | 5.8  |
| Level of Service       | D     | D    |      | A     | A     | A    |
| Approach Delay (s)     | 36.0  |      |      |       |       | 7.2  |
| Approach LOS           | D     |      |      |       |       | A    |

| Intersection Summary              |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 16.3  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.63  |                           |     |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 57.9% | ICU Level of Service      | B   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group

HCM 2010 Signalized Intersection Summary  
 34: MLK Jr. Way & 18th Street

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |  |  |  |  |  |   |   |  |  |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 22  | 425   | 9   | 40   | 160   | 0   | 0   | 150   | 171   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 22  | 425   | 9   | 40   | 160   | 0   | 0   | 150   | 171   |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.97  | 0.99   |   | 1.00  | 1.00  |   | 0.97  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1676  | 1676  | 1710  | 1710   | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 22  | 425   | 4   | 40   | 160   | 0   | 0   | 150   | 114   |
| Adj No. of Lanes             |   |   |   | 1   | 3   | 0   | 0  | 2   | 0   | 0   | 2   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 2   | 2   | 2   | 2  | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 639   | 1870  | 18  | 291  | 1124  | 0   | 0   | 842   | 593   |
| Arrive On Green              |   |   |   | 0.40  | 0.40  | 0.41  | 0.48   | 0.48  | 0.00  | 0.00  | 0.48  | 0.49  |
| Sat Flow, veh/h              |   |   |   | 1597  | 4674  | 44  | 451  | 2433  | 0   | 0   | 1850  | 1243  |
| Grp Volume(v), veh/h         |   |   |   | 22  | 277   | 152   | 105  | 95  | 0   | 0   | 134   | 130   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1597  | 1526  | 1667  | 1358   | 1449  | 0   | 0   | 1593  | 1416  |
| Q Serve(g_s), s              |   |   |   | 0.5   | 3.9   | 3.9   | 0.0  | 2.4   | 0.0   | 0.0   | 3.1   | 3.4   |
| Cycle Q Clear(g_c), s        |   |   |   | 0.5   | 3.9   | 3.9   | 3.4  | 2.4   | 0.0   | 0.0   | 3.1   | 3.4   |
| Prop In Lane                 |   |   |   | 1.00  |   | 0.03  | 0.38   |   | 0.00  | 0.00  |   | 0.88  |
| Lane Grp Cap(c), veh/h       |   |   |   | 639   | 1220  | 667   | 724  | 691   | 0   | 0   | 760   | 675   |
| V/C Ratio(X)                 |   |   |   | 0.03  | 0.23  | 0.23  | 0.14   | 0.14  | 0.00  | 0.00  | 0.18  | 0.19  |
| Avail Cap(c_a), veh/h        |   |   |   | 639   | 1220  | 667   | 724  | 691   | 0   | 0   | 760   | 675   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 11.9  | 12.9  | 12.9  | 9.5  | 9.5   | 0.0   | 0.0   | 9.7   | 9.5   |
| Incr Delay (d2), s/veh       |   |   |   | 0.1   | 0.4   | 0.8   | 0.4  | 0.4   | 0.0   | 0.0   | 0.5   | 0.6   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 0.3   | 1.7   | 1.9   | 1.1  | 1.0   | 0.0   | 0.0   | 1.5   | 1.4   |
| LnGrp Delay(d),s/veh         |   |   |   | 12.0  | 13.3  | 13.7  | 9.9  | 9.9   | 0.0   | 0.0   | 10.2  | 10.2  |
| LnGrp LOS                    |   |   |   | B   | B   | B   | A  | A   |   |   | B   | B   |
| Approach Vol, veh/h          |   |   |   |   | 451   |   |  | 200   |   |   | 264   |   |
| Approach Delay, s/veh        |   |   |   |   | 13.4  |   |  | 9.9   |   |   | 10.2  |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | B   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 35.0  |   |   |   | 35.0  |  | 30.0  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 3.0   |   |   |   | 3.0   |  | 3.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 27.0  |   |   |   | 32.0  |  | 26.5  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 5.4   |   |   |   | 5.4   |  | 5.9   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.9   |   |   |   | 3.1   |  | 2.9   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 11.7  |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | B   |   |   |  |   |   |   |   |   |
| <b>Notes</b>                 |   |   |   |   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 35: Jefferson Street & San Pablo Avenue & 19th Street

2100 Telegraph  
 Existing Plus Project Conditions PM



| Movement               | WBL2 | WBL  | WBT  | WBR  | NBL2 | NBL  | NBT  | SBT   | SBR  | SBR2 | NEL2 | NEL  |
|------------------------|------|------|------|------|------|------|------|-------|------|------|------|------|
| Lane Configurations    |      |      | ↑↑   |      |      | ↖    | ↑    | ↑↑    |      |      |      | ↗↘   |
| Traffic Volume (vph)   | 56   | 37   | 383  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| Future Volume (vph)    | 56   | 37   | 383  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| Ideal Flow (vphpl)     | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s)    |      |      | 4.0  |      |      | 4.0  | 4.0  | 4.0   |      |      |      | 4.0  |
| Lane Util. Factor      |      |      | 0.95 |      |      | 1.00 | 1.00 | 0.95  |      |      |      | 0.97 |
| Frbp, ped/bikes        |      |      | 0.99 |      |      | 1.00 | 1.00 | 0.98  |      |      |      | 1.00 |
| Flpb, ped/bikes        |      |      | 0.99 |      |      | 0.94 | 1.00 | 1.00  |      |      |      | 1.00 |
| Frt                    |      |      | 0.97 |      |      | 1.00 | 1.00 | 0.96  |      |      |      | 1.00 |
| Flt Protected          |      |      | 0.99 |      |      | 0.95 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (prot)      |      |      | 2992 |      |      | 1499 | 1676 | 3023  |      |      |      | 3087 |
| Flt Permitted          |      |      | 0.99 |      |      | 0.53 | 1.00 | 1.00  |      |      |      | 0.95 |
| Satd. Flow (perm)      |      |      | 2992 |      |      | 837  | 1676 | 3023  |      |      |      | 3087 |
| Peak-hour factor, PHF  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Adj. Flow (vph)        | 56   | 37   | 383  | 141  | 11   | 30   | 187  | 265   | 56   | 27   | 16   | 101  |
| RTOR Reduction (vph)   | 0    | 0    | 36   | 0    | 0    | 0    | 0    | 6     | 0    | 0    | 0    | 0    |
| Lane Group Flow (vph)  | 0    | 0    | 581  | 0    | 0    | 41   | 187  | 342   | 0    | 0    | 0    | 121  |
| Confl. Peds. (#/hr)    | 20   | 20   |      | 54   | 29   | 29   |      |       | 29   |      |      |      |
| Confl. Bikes (#/hr)    |      |      |      | 1    |      |      |      |       | 12   |      |      |      |
| Turn Type              | Perm | Perm | NA   |      | Perm | Perm | NA   | NA    |      |      | Perm | Prot |
| Protected Phases       |      |      | 4    |      |      |      | 2    | 6     |      |      |      | 3    |
| Permitted Phases       | 4    | 4    |      |      | 2    | 2    |      |       |      |      | 3    |      |
| Actuated Green, G (s)  |      |      | 23.2 |      |      | 38.6 | 38.6 | 38.6  |      |      |      | 6.7  |
| Effective Green, g (s) |      |      | 24.2 |      |      | 41.1 | 41.1 | 41.1  |      |      |      | 7.7  |
| Actuated g/C Ratio     |      |      | 0.28 |      |      | 0.48 | 0.48 | 0.48  |      |      |      | 0.09 |
| Clearance Time (s)     |      |      | 5.0  |      |      | 6.5  | 6.5  | 6.5   |      |      |      | 5.0  |
| Vehicle Extension (s)  |      |      | 2.0  |      |      | 2.0  | 2.0  | 2.0   |      |      |      | 2.0  |
| Lane Grp Cap (vph)     |      |      | 851  |      |      | 404  | 810  | 1461  |      |      |      | 279  |
| v/s Ratio Prot         |      |      |      |      |      |      | 0.11 | c0.11 |      |      |      |      |
| v/s Ratio Perm         |      |      | 0.19 |      |      | 0.05 |      |       |      |      |      | 0.04 |
| v/c Ratio              |      |      | 0.68 |      |      | 0.10 | 0.23 | 0.23  |      |      |      | 0.43 |
| Uniform Delay, d1      |      |      | 27.0 |      |      | 11.9 | 12.8 | 12.8  |      |      |      | 36.6 |
| Progression Factor     |      |      | 1.00 |      |      | 1.00 | 1.00 | 0.50  |      |      |      | 1.00 |
| Incremental Delay, d2  |      |      | 1.8  |      |      | 0.5  | 0.7  | 0.4   |      |      |      | 0.4  |
| Delay (s)              |      |      | 28.8 |      |      | 12.4 | 13.4 | 6.8   |      |      |      | 37.0 |
| Level of Service       |      |      | C    |      |      | B    | B    | A     |      |      |      | D    |
| Approach Delay (s)     |      |      | 28.8 |      |      |      | 13.2 | 6.8   |      |      |      | 37.0 |
| Approach LOS           |      |      | C    |      |      |      | B    | A     |      |      |      | D    |

Intersection Summary

|                                   |       |                           |      |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay            | 21.0  | HCM 2000 Level of Service | C    |
| HCM 2000 Volume to Capacity ratio | 0.40  |                           |      |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization | 58.2% | ICU Level of Service      | B    |
| Analysis Period (min)             | 15    |                           |      |


















c Critical Lane Group



|                        |      |
|------------------------|------|
| Movement               | NER2 |
| Lane Configurations    |      |
| Traffic Volume (vph)   | 4    |
| Future Volume (vph)    | 4    |
| Ideal Flow (vphpl)     | 1900 |
| Total Lost time (s)    |      |
| Lane Util. Factor      |      |
| Frbp, ped/bikes        |      |
| Flpb, ped/bikes        |      |
| Frt                    |      |
| Flt Protected          |      |
| Satd. Flow (prot)      |      |
| Flt Permitted          |      |
| Satd. Flow (perm)      |      |
| Peak-hour factor, PHF  | 1.00 |
| Adj. Flow (vph)        | 4    |
| RTOR Reduction (vph)   | 0    |
| Lane Group Flow (vph)  | 0    |
| Confl. Peds. (#/hr)    |      |
| Confl. Bikes (#/hr)    |      |
| Turn Type              |      |
| Protected Phases       |      |
| Permitted Phases       |      |
| Actuated Green, G (s)  |      |
| Effective Green, g (s) |      |
| Actuated g/C Ratio     |      |
| Clearance Time (s)     |      |
| Vehicle Extension (s)  |      |
| Lane Grp Cap (vph)     |      |
| v/s Ratio Prot         |      |
| v/s Ratio Perm         |      |
| v/c Ratio              |      |
| Uniform Delay, d1      |      |
| Progression Factor     |      |
| Incremental Delay, d2  |      |
| Delay (s)              |      |
| Level of Service       |      |
| Approach Delay (s)     |      |
| Approach LOS           |      |
| Intersection Summary   |      |
















HCM 2010 Signalized Intersection Summary  
 36: Telegraph Avenue & 19th Street

2100 Telegraph  
 Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |   |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |  |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 38  | 431   | 177   | 84  | 127   | 0   | 0   | 200   | 130   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 38  | 431   | 177   | 84  | 127   | 0   | 0   | 200   | 130   |
| Number                       | 7   | 4   | 14  | 3   | 8   | 18  | 5   | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          | 1.00  |   | 1.00  | 1.00  |   | 0.80  | 0.96  |   | 1.00  | 1.00  |   | 0.87  |
| Parking Bus, Adj             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       | 1676  | 0   | 0   | 1710  | 1676  | 1710  | 1676  | 1676  | 0   | 0   | 1676  | 1710  |
| Adj Flow Rate, veh/h         | 0   | 0   | 0   | 38  | 431   | 110   | 84  | 127   | 0   | 0   | 200   | 102   |
| Adj No. of Lanes             | 1   | 0   | 0   | 0   | 2   | 0   | 1   | 1   | 0   | 0   | 1   | 0   |
| Peak Hour Factor             | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         | 2   | 0   | 0   | 2   | 2   | 2   | 2   | 2   | 0   | 0   | 2   | 2   |
| Cap, veh/h                   | 0   | 0   | 0   | 75  | 870   | 232   | 421   | 674   | 0   | 0   | 399   | 203   |
| Arrive On Green              | 0.00  | 0.00  | 0.00  | 0.39  | 0.39  | 0.37  | 0.40  | 0.40  | 0.00  | 0.00  | 0.40  | 0.35  |
| Sat Flow, veh/h              |   | 0   |   | 195   | 2258  | 602   | 926   | 1676  | 0   | 0   | 992   | 506   |
| Grp Volume(v), veh/h         |   | 0.0   |   | 325   | 0   | 254   | 84  | 127   | 0   | 0   | 0   | 302   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1667  | 0   | 1388  | 926   | 1676  | 0   | 0   | 0   | 1499  |
| Q Serve(g_s), s              |   |   |   | 5.6   | 0.0   | 5.2   | 2.8   | 1.8   | 0.0   | 0.0   | 0.0   | 5.8   |
| Cycle Q Clear(g_c), s        |   |   |   | 5.6   | 0.0   | 5.2   | 8.6   | 1.8   | 0.0   | 0.0   | 0.0   | 5.8   |
| Prop In Lane                 |   |   |   | 0.12  |   | 0.43  | 1.00  |   | 0.00  | 0.00  |   | 0.34  |
| Lane Grp Cap(c), veh/h       |   |   |   | 642   | 0   | 535   | 421   | 674   | 0   | 0   | 0   | 602   |
| V/C Ratio(X)                 |   |   |   | 0.51  | 0.00  | 0.47  | 0.20  | 0.19  | 0.00  | 0.00  | 0.00  | 0.50  |
| Avail Cap(c_a), veh/h        |   |   |   | 909   | 0   | 757   | 960   | 1650  | 0   | 0   | 0   | 1474  |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 1.00  | 1.00  | 0.00  | 0.00  | 0.00  | 1.00  |
| Uniform Delay (d), s/veh     |   |   |   | 8.8   | 0.0   | 8.8   | 11.7  | 7.3   | 0.0   | 0.0   | 0.0   | 8.7   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.2   | 0.1   | 0.0   | 0.0   | 0.0   | 0.0   | 0.2   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 2.6   | 0.0   | 2.0   | 0.7   | 0.9   | 0.0   | 0.0   | 0.0   | 2.4   |
| LnGrp Delay(d),s/veh         |   |   |   | 9.1   | 0.0   | 9.0   | 11.8  | 7.3   | 0.0   | 0.0   | 0.0   | 8.9   |
| LnGrp LOS                    |   |   |   | A   |   | A   | B   | A   |   |   |   | A   |
| Approach Vol, veh/h          |   |   |   |   | 579   |   |   | 211   |   |   | 302   |   |
| Approach Delay, s/veh        |   |   |   |   | 9.0   |   |   | 9.1   |   |   | 8.9   |   |
| Approach LOS                 |   |   |   |   | A   |   |   | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |   | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 19.1  |   |   |   | 19.1  |   | 18.5  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 6.0   |   |   |   | 6.0   |   | 4.5   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |   | 20.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 10.6  |   |   |   | 7.8   |   | 7.6   |   |   |   |   |
| Green Ext Time (p_c), s      |   | 2.5   |   |   |   | 2.6   |   | 2.2   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |   |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 9.0   |   |   |   |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |   |   |   |   |   |   |

HCM 2010 Signalized Intersection Summary  
37: Broadway & 19th Street

2100 Telegraph  
Existing Plus Project Conditions PM

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement                     | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations          |   |   |   |   |  |   |  |  |   |   |  |   |
| Traffic Volume (veh/h)       | 0   | 0   | 0   | 61  | 353   | 89  | 110  | 476   | 0   | 0   | 571   | 181   |
| Future Volume (veh/h)        | 0   | 0   | 0   | 61  | 353   | 89  | 110  | 476   | 0   | 0   | 571   | 181   |
| Number                       |   |   |   | 3   | 8   | 18  | 5  | 2   | 12  | 1   | 6   | 16  |
| Initial Q (Qb), veh          |   |   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Ped-Bike Adj(A_pbT)          |   |   |   | 1.00  |   | 0.80  | 0.95   |   | 1.00  | 1.00  |   | 0.85  |
| Parking Bus, Adj             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj Sat Flow, veh/h/ln       |   |   |   | 1710  | 1676  | 1710  | 1710   | 1676  | 0   | 1710  | 1676  | 1710  |
| Adj Flow Rate, veh/h         |   |   |   | 61  | 353   | 60  | 110  | 476   | 0   | 0   | 571   | 166   |
| Adj No. of Lanes             |   |   |   | 0   | 2   | 0   | 0  | 2   | 0   | 0   | 3   | 0   |
| Peak Hour Factor             |   |   |   | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Percent Heavy Veh, %         |   |   |   | 0   | 2   | 0   | 2  | 2   | 0   | 2   | 2   | 2   |
| Cap, veh/h                   |   |   |   | 131   | 780   | 138   | 285  | 1147  | 0   | 0   | 1883  | 521   |
| Arrive On Green              |   |   |   | 0.33  | 0.33  | 0.33  | 1.00   | 1.00  | 0.00  | 0.00  | 1.00  | 1.00  |
| Sat Flow, veh/h              |   |   |   | 392   | 2335  | 412   | 384  | 2156  | 0   | 0   | 3564  | 944   |
| Grp Volume(v), veh/h         |   |   |   | 258   | 0   | 216   | 257  | 329   | 0   | 0   | 507   | 230   |
| Grp Sat Flow(s),veh/h/ln     |   |   |   | 1657  | 0   | 1482  | 1014   | 1449  | 0   | 0   | 1526  | 1307  |
| Q Serve(g_s), s              |   |   |   | 8.6   | 0.0   | 8.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Cycle Q Clear(g_c), s        |   |   |   | 8.6   | 0.0   | 8.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Prop In Lane                 |   |   |   | 0.24  |   | 0.28  | 0.43   |   | 0.00  | 0.00  |   | 0.72  |
| Lane Grp Cap(c), veh/h       |   |   |   | 554   | 0   | 495   | 633  | 799   | 0   | 0   | 1683  | 721   |
| V/C Ratio(X)                 |   |   |   | 0.47  | 0.00  | 0.44  | 0.41   | 0.41  | 0.00  | 0.00  | 0.30  | 0.32  |
| Avail Cap(c_a), veh/h        |   |   |   | 615   | 0   | 550   | 633  | 799   | 0   | 0   | 1683  | 721   |
| HCM Platoon Ratio            |   |   |   | 1.00  | 1.00  | 1.00  | 2.00   | 2.00  | 1.00  | 2.00  | 2.00  | 2.00  |
| Upstream Filter(I)           |   |   |   | 1.00  | 0.00  | 1.00  | 0.95   | 0.95  | 0.00  | 0.00  | 0.94  | 0.94  |
| Uniform Delay (d), s/veh     |   |   |   | 18.4  | 0.0   | 18.2  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Incr Delay (d2), s/veh       |   |   |   | 0.2   | 0.0   | 0.2   | 1.8  | 1.5   | 0.0   | 0.0   | 0.4   | 1.1   |
| Initial Q Delay(d3),s/veh    |   |   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| %ile BackOfQ(50%),veh/ln     |   |   |   | 4.0   | 0.0   | 3.3   | 0.3  | 0.3   | 0.0   | 0.0   | 0.1   | 0.2   |
| LnGrp Delay(d),s/veh         |   |   |   | 18.6  | 0.0   | 18.4  | 1.8  | 1.5   | 0.0   | 0.0   | 0.4   | 1.1   |
| LnGrp LOS                    |   |   |   | B   |   | B   | A  | A   |   |   | A   | A   |
| Approach Vol, veh/h          |   |   |   |   | 474   |   |  | 586   |   |   | 737   |   |
| Approach Delay, s/veh        |   |   |   |   | 18.5  |   |  | 1.6   |   |   | 0.6   |   |
| Approach LOS                 |   |   |   |   | B   |   |  | A   |   |   | A   |   |
| Timer                        | 1   | 2   | 3   | 4   | 5   | 6   | 7  | 8   |   |   |   |   |
| Assigned Phs                 |   | 2   |   |   |   | 6   |  | 8   |   |   |   |   |
| Phs Duration (G+Y+Rc), s     |   | 42.6  |   |   |   | 42.6  |  | 27.4  |   |   |   |   |
| Change Period (Y+Rc), s      |   | 5.0   |   |   |   | 5.0   |  | 4.0   |   |   |   |   |
| Max Green Setting (Gmax), s  |   | 35.0  |   |   |   | 35.0  |  | 26.0  |   |   |   |   |
| Max Q Clear Time (g_c+I1), s |   | 2.0   |   |   |   | 2.0   |  | 10.6  |   |   |   |   |
| Green Ext Time (p_c), s      |   | 8.2   |   |   |   | 8.2   |  | 1.8   |   |   |   |   |
| <b>Intersection Summary</b>  |   |   |   |   |   |   |  |   |   |   |   |   |
| HCM 2010 Ctrl Delay          |   |   |   | 5.7   |   |   |  |   |   |   |   |   |
| HCM 2010 LOS                 |   |   |   | A   |   |   |  |   |   |   |   |   |

HCM Signalized Intersection Capacity Analysis  
 38: Brush Street & I-980 Westbound On-ramp & 17th Street

2100 Telegraph  
 Existing Plus Project Conditions PM



| Movement               | EBT   | EBR  | EBR2 | SBL2  | SBL   | SBT  |
|------------------------|-------|------|------|-------|-------|------|
| Lane Configurations    | ↑↑    |      |      | ↵     | ↵     | ↑↑   |
| Traffic Volume (vph)   | 205   | 88   | 31   | 461   | 771   | 228  |
| Future Volume (vph)    | 205   | 88   | 31   | 461   | 771   | 228  |
| Ideal Flow (vphp)      | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 |
| Total Lost time (s)    | 4.0   |      |      | 4.0   | 4.0   | 4.0  |
| Lane Util. Factor      | 0.95  |      |      | 0.91  | 0.86  | 0.86 |
| Frbp, ped/bikes        | 0.99  |      |      | 1.00  | 1.00  | 1.00 |
| Flpb, ped/bikes        | 1.00  |      |      | 1.00  | 1.00  | 1.00 |
| Frt                    | 0.94  |      |      | 1.00  | 1.00  | 1.00 |
| Flt Protected          | 1.00  |      |      | 0.95  | 0.95  | 0.98 |
| Satd. Flow (prot)      | 2989  |      |      | 1449  | 1370  | 2828 |
| Flt Permitted          | 1.00  |      |      | 0.95  | 0.95  | 0.98 |
| Satd. Flow (perm)      | 2989  |      |      | 1449  | 1370  | 2828 |
| Peak-hour factor, PHF  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 |
| Adj. Flow (vph)        | 205   | 88   | 31   | 461   | 771   | 228  |
| RTOR Reduction (vph)   | 10    | 0    | 0    | 66    | 11    | 0    |
| Lane Group Flow (vph)  | 314   | 0    | 0    | 188   | 821   | 374  |
| Confl. Peds. (#/hr)    |       |      |      |       |       |      |
| Confl. Bikes (#/hr)    |       | 5    |      |       |       |      |
| Turn Type              | NA    |      |      | Split | Split | NA   |
| Protected Phases       | 4     |      |      | 6     | 6     | 6    |
| Permitted Phases       |       |      |      |       |       |      |
| Actuated Green, G (s)  | 13.5  |      |      | 62.0  | 62.0  | 62.0 |
| Effective Green, g (s) | 14.0  |      |      | 63.0  | 63.0  | 63.0 |
| Actuated g/C Ratio     | 0.16  |      |      | 0.74  | 0.74  | 0.74 |
| Clearance Time (s)     | 4.5   |      |      | 5.0   | 5.0   | 5.0  |
| Vehicle Extension (s)  | 2.0   |      |      | 2.0   | 2.0   | 2.0  |
| Lane Grp Cap (vph)     | 492   |      |      | 1073  | 1015  | 2096 |
| v/s Ratio Prot         | c0.11 |      |      | 0.13  | c0.60 | 0.13 |
| v/s Ratio Perm         |       |      |      |       |       |      |
| v/c Ratio              | 0.64  |      |      | 0.18  | 0.81  | 0.18 |
| Uniform Delay, d1      | 33.1  |      |      | 3.3   | 7.1   | 3.3  |
| Progression Factor     | 1.00  |      |      | 0.00  | 1.15  | 0.26 |
| Incremental Delay, d2  | 2.0   |      |      | 0.3   | 6.6   | 0.2  |
| Delay (s)              | 35.1  |      |      | 0.3   | 14.8  | 1.0  |
| Level of Service       | D     |      |      | A     | B     | A    |
| Approach Delay (s)     | 35.1  |      |      |       |       | 8.7  |
| Approach LOS           | D     |      |      |       |       | A    |

| Intersection Summary              |       |                           |     |
|-----------------------------------|-------|---------------------------|-----|
| HCM 2000 Control Delay            | 13.5  | HCM 2000 Level of Service | B   |
| HCM 2000 Volume to Capacity ratio | 0.78  |                           |     |
| Actuated Cycle Length (s)         | 85.0  | Sum of lost time (s)      | 8.0 |
| Intersection Capacity Utilization | 53.9% | ICU Level of Service      | A   |
| Analysis Period (min)             | 15    |                           |     |

c Critical Lane Group



HCM Signalized Intersection Capacity Analysis  
 39: I-980 Eastbound Off-ramp & Castro Street & 17th Street

2100 Telegraph  
 Existing Plus Project Conditions PM



| Movement                          | EBL   | EBT   | NBT   | NBR  | NEL                       | NER  |
|-----------------------------------|-------|-------|-------|------|---------------------------|------|
| Lane Configurations               |       |       |       |      |                           |      |
| Traffic Volume (vph)              | 194   | 472   | 919   | 66   | 385                       | 66   |
| Future Volume (vph)               | 194   | 472   | 919   | 66   | 385                       | 66   |
| Ideal Flow (vphp)                 | 1900  | 1900  | 1900  | 1900 | 1900                      | 1900 |
| Total Lost time (s)               | 4.0   | 4.0   | 4.0   |      | 4.0                       |      |
| Lane Util. Factor                 | 1.00  | 0.91  | 0.91  |      | 0.97                      |      |
| Frbp, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Flpb, ped/bikes                   | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Frt                               | 1.00  | 1.00  | 0.99  |      | 0.98                      |      |
| Flt Protected                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (prot)                 | 1593  | 4577  | 4525  |      | 3051                      |      |
| Flt Permitted                     | 0.95  | 1.00  | 1.00  |      | 0.96                      |      |
| Satd. Flow (perm)                 | 1593  | 4577  | 4525  |      | 3051                      |      |
| Peak-hour factor, PHF             | 1.00  | 1.00  | 1.00  | 1.00 | 1.00                      | 1.00 |
| Adj. Flow (vph)                   | 194   | 472   | 919   | 66   | 385                       | 66   |
| RTOR Reduction (vph)              | 64    | 0     | 12    | 0    | 0                         | 0    |
| Lane Group Flow (vph)             | 130   | 472   | 973   | 0    | 451                       | 0    |
| Confl. Peds. (#/hr)               |       |       |       | 6    |                           |      |
| Confl. Bikes (#/hr)               |       |       |       |      |                           |      |
| Turn Type                         | Split | NA    | NA    |      | Prot                      |      |
| Protected Phases                  | 4     | 4     | 2     |      | 1                         |      |
| Permitted Phases                  |       |       |       |      |                           |      |
| Actuated Green, G (s)             | 28.5  | 28.5  | 19.5  |      | 7.5                       |      |
| Effective Green, g (s)            | 29.0  | 29.0  | 20.5  |      | 8.5                       |      |
| Actuated g/C Ratio                | 0.41  | 0.41  | 0.29  |      | 0.12                      |      |
| Clearance Time (s)                | 4.5   | 4.5   | 5.0   |      | 5.0                       |      |
| Vehicle Extension (s)             | 2.0   | 2.0   | 2.0   |      | 2.0                       |      |
| Lane Grp Cap (vph)                | 659   | 1896  | 1325  |      | 370                       |      |
| v/s Ratio Prot                    | 0.08  | c0.10 | c0.22 |      | c0.15                     |      |
| v/s Ratio Perm                    |       |       |       |      |                           |      |
| v/c Ratio                         | 0.20  | 0.25  | 0.73  |      | 1.22                      |      |
| Uniform Delay, d1                 | 13.1  | 13.4  | 22.3  |      | 30.8                      |      |
| Progression Factor                | 1.00  | 1.00  | 1.00  |      | 1.00                      |      |
| Incremental Delay, d2             | 0.7   | 0.3   | 1.8   |      | 120.6                     |      |
| Delay (s)                         | 13.7  | 13.7  | 24.1  |      | 151.4                     |      |
| Level of Service                  | B     | B     | C     |      | F                         |      |
| Approach Delay (s)                |       | 13.7  | 24.1  |      | 151.4                     |      |
| Approach LOS                      |       | B     | C     |      | F                         |      |
| <b>Intersection Summary</b>       |       |       |       |      |                           |      |
| HCM 2000 Control Delay            |       |       | 48.1  |      | HCM 2000 Level of Service | D    |
| HCM 2000 Volume to Capacity ratio |       |       | 0.56  |      |                           |      |
| Actuated Cycle Length (s)         |       |       | 70.0  |      | Sum of lost time (s)      | 12.0 |
| Intersection Capacity Utilization |       |       | 57.9% |      | ICU Level of Service      | B    |
| Analysis Period (min)             |       |       | 15    |      |                           |      |
| c Critical Lane Group             |       |       |       |      |                           |      |

## **Attachment C**

### TCQSM Model Inputs and Data Sources

**2100 Telegraph Development Project EIR  
Existing and Existing Plus Project TCQSM Data Inputs and Sources**

| Inputs   | Data Sources       |                       |
|--|--------------------|-----------------------|
|  | Existing           | Existing Plus Project |
| <b><i>Step 1 - Dwell Time</i></b>                |                    |                       |
| Average boarding volume per bus                  | APC, 2016          | Estimated             |
| Average alighting volume per bus                 | APC, 2016          | Estimated             |
| Boarding door(s)                                 | AC Transit         | Same as Existing      |
| Fare payment method                              | AC Transit         | Same as Existing      |
| Boarding height                                  | AC Transit         | Same as Existing      |
| Standees present?                                | AC Transit         | Same as Existing      |
| Number of doors                                  | AC Transit         | Same as Existing      |
| Available door channels                          | AC Transit         | Same as Existing      |
| Percent of boarders using farebox                | AC Transit         | Same as Existing      |
| Door opening and closing time                    | Default Value      | Default Value         |
| Number of loading areas                          | Field Observations | Field Observations    |
| <b><i>Step 2 - Capacity</i></b>                  |                    |                       |
| Coefficient of variation of dwell times          | APC, 2016          | Assumption            |
| Failure rate                                     | Default Value      | Default Value         |
| Average Dwell Time                               | Calculated         | Calculated            |
| Green time ratio                                 | Synchro Network    | Synchro Network       |
| Traffic signal cycle length (s)                  | Synchro Network    | Synchro Network       |
| Stop type (on-line/off-line)                     | Field Observations | Same as Existing      |
| Stop location                                    | Field Observations | Same as Existing      |
| Bus stop distance to upstream signal             | Field Observations | Same as Existing      |
| Curb lane traffic volume                         | Synchro Network    | Synchro Network       |
| Right-turning traffic volume                     | Synchro Network    | Synchro Network       |
| Conflicting pedestrian volume                    | Synchro Network    | Synchro Network       |
| Arrival type (random/typical/platooned)          | Assumption         | Assumption            |
| Loading area design                              | Field Observations | Same as Existing      |
| Bus lane type                                    | Field Observations | Same as Existing      |
| <b><i>Step 3 - Speed Calculation</i></b>         |                    |                       |
| Scheduled buses per hour                         | AC Transit         | Same as Existing      |
| Average stop spacing                             | Field Observations | Same as Existing      |
| Running way type                                 | Field Observations | Same as Existing      |
| Traffic signal pattern                           | Assumption         | Assumption            |
| Bus running speed on facility                    | Assumption         | Assumption            |
| Average bus acceleration rate to running speed   | Default Value      | Default Value         |
| Average bus deceleration rate from running speed | Default Value      | Default Value         |

## **Attachment D**

CMP Volumes, V/C Ratios, and LOS

**2100 Telegraph Development Project EIR  
Alameda CTC CMP/MTS System Analysis Summary - 2020 PM Peak Hour**

| Link Location                        | Segment Limits   | # Lanes          | Model Volume | Model Volume | No Project Volume | With Project Volume | V/C Ratio - No Project | V/C Ratio - With Project | V/C Ratio Difference | No Project LOS | With Project LOS | Change from LOS E or better to LOS F | LOS F and Change in V/C >=0.03 |    |
|--------------------------------------|------------------|------------------|--------------|--------------|-------------------|---------------------|------------------------|--------------------------|----------------------|----------------|------------------|--------------------------------------|--------------------------------|----|
| <b>Freeway Segments</b>              |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| <b>I-580 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | San Pablo Avenue | SR-24            | 5            | 8,805        | 8,756             | 8,805               | 8,854                  | 0.880                    | 0.885                | 0.005          | D                | D                                    | No                             | -  |
| Between                              | SR-24            | Harrison Street  | 5            | 8,053        | 8,014             | 8,053               | 8,092                  | 0.805                    | 0.809                | 0.004          | D                | D                                    | No                             | -  |
| Between                              | Lakeshore Avenue | Park Boulevard   | 4            | 8,679        | 8,610             | 8,679               | 8,748                  | 1.085                    | 1.094                | 0.009          | F                | F                                    | -                              | No |
| <b>I-580 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Park Boulevard   | Lakeshore Avenue | 4            | 5,358        | 5,327             | 5,358               | 5,389                  | 0.670                    | 0.674                | 0.004          | C                | C                                    | No                             | -  |
| Between                              | Harrison Street  | SR-24            | 5            | 5,341        | 5,318             | 5,341               | 5,364                  | 0.534                    | 0.536                | 0.002          | B                | B                                    | No                             | -  |
| Between                              | SR-24            | San Pablo Avenue | 5            | 7,321        | 7,238             | 7,321               | 7,404                  | 0.732                    | 0.740                | 0.008          | C                | C                                    | No                             | -  |
| <b>SR-24 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | I-580            | Telegraph Avenue | 4            | 6,742        | 6,703             | 6,742               | 6,781                  | 0.843                    | 0.848                | 0.005          | D                | D                                    | No                             | -  |
| <b>SR-24 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Telegraph Avenue | I-580            | 4            | 3,948        | 3,925             | 3,948               | 3,971                  | 0.493                    | 0.496                | 0.003          | B                | B                                    | No                             | -  |
| <b>I-980 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | I-880            | 12th Street      | 2            | 2,739        | 2,692             | 2,739               | 2,786                  | 0.685                    | 0.696                | 0.011          | C                | C                                    | No                             | -  |
| <b>I-980 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 12th Street      | I-880            | 3            | 2,414        | 2,302             | 2,414               | 2,526                  | 0.402                    | 0.421                | 0.019          | B                | B                                    | No                             | -  |
| <b>I-880 Northbound</b>              |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 5th Avenue       | Oak Street       | 4            | 6,986        | 6,939             | 6,986               | 7,033                  | 0.873                    | 0.879                | 0.006          | D                | D                                    | No                             | -  |
| <b>I-880 Southbound</b>              |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Oak Street       | 5th Avenue       | 5            | 7,755        | 7,643             | 7,755               | 7,867                  | 0.775                    | 0.787                | 0.012          | D                | D                                    | No                             | -  |
| <b>Arterials</b>                     |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| <b>Telegraph Avenue - Northbound</b> |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 17th Street      | 19th Street      | 2            | 283          | 269               | 283                 | 297                    | 0.177                    | 0.186                | 0.009          | A                | A                                    | No                             | -  |
| Between                              | 20th Street      | Grand Avenue     | 2            | 406          | 189               | 406                 | 623                    | 0.254                    | 0.389                | 0.135          | A                | B                                    | No                             | -  |
| Between                              | Grand Avenue     | 27th Street      | 2            | 972          | 900               | 972                 | 1,044                  | 0.607                    | 0.652                | 0.045          | C                | C                                    | No                             | -  |
| Between                              | 27th Street      | 34th Street      | 2            | 312          | 293               | 312                 | 331                    | 0.195                    | 0.207                | 0.012          | A                | A                                    | No                             | -  |
| <b>Telegraph Avenue - Southbound</b> |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 34th Street      | 27th Street      | 2            | 733          | 725               | 733                 | 741                    | 0.458                    | 0.463                | 0.005          | B                | B                                    | No                             | -  |
| Between                              | 27th Street      | Grand Avenue     | 2            | 281          | 265               | 281                 | 297                    | 0.176                    | 0.186                | 0.010          | A                | A                                    | No                             | -  |
| Between                              | Grand Avenue     | 20th Street      | 2            | 288          | 160               | 288                 | 416                    | 0.180                    | 0.260                | 0.080          | A                | A                                    | No                             | -  |
| Between                              | 19th Street      | 17th Street      | 2            | 260          | 249               | 260                 | 271                    | 0.162                    | 0.169                | 0.007          | A                | A                                    | No                             | -  |
| <b>Broadway - Northbound</b>         |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 17th Street      | 19th Street      | 3            | 432          | 411               | 432                 | 453                    | 0.180                    | 0.189                | 0.009          | A                | A                                    | No                             | -  |
| Between                              | 20th Street      | Grand Avenue     | 3            | 1,359        | 1,244             | 1,359               | 1,474                  | 0.566                    | 0.614                | 0.048          | B                | C                                    | No                             | -  |
| Between                              | Grand Avenue     | 27th Street      | 3            | 411          | 386               | 411                 | 436                    | 0.171                    | 0.182                | 0.011          | A                | A                                    | No                             | -  |
| Between                              | 27th Street      | 34th Street      | 3            | 503          | 478               | 503                 | 528                    | 0.210                    | 0.220                | 0.010          | A                | A                                    | No                             | -  |
| <b>Broadway - Southbound</b>         |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 34th Street      | 27th Street      | 3            | 557          | 547               | 557                 | 567                    | 0.232                    | 0.236                | 0.004          | A                | A                                    | No                             | -  |
| Between                              | 27th Street      | Grand Avenue     | 3            | 378          | 368               | 378                 | 388                    | 0.158                    | 0.162                | 0.004          | A                | A                                    | No                             | -  |
| Between                              | Grand Avenue     | 20th Street      | 3            | 326          | 95                | 326                 | 557                    | 0.136                    | 0.232                | 0.096          | A                | A                                    | No                             | -  |
| Between                              | 19th Street      | 17th Street      | 3            | 569          | 543               | 569                 | 595                    | 0.237                    | 0.248                | 0.011          | A                | A                                    | No                             | -  |
| <b>Harrison Street - Northbound</b>  |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 17th Street      | 19th Street      | 2            | 554          | 547               | 554                 | 561                    | 0.347                    | 0.351                | 0.004          | A                | B                                    | No                             | -  |
| Between                              | 20th Street      | Grand Avenue     | 2            | 750          | 717               | 750                 | 783                    | 0.469                    | 0.490                | 0.021          | B                | B                                    | No                             | -  |
| Between                              | Grand Avenue     | 27th Street      | 3            | 1,320        | 1,283             | 1,320               | 1,357                  | 0.550                    | 0.566                | 0.016          | B                | B                                    | No                             | -  |
| Between                              | 27th Street      | 34th Street      | 2            | 569          | 532               | 569                 | 606                    | 0.355                    | 0.378                | 0.023          | B                | B                                    | No                             | -  |
| <b>Harrison Street - Southbound</b>  |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 34th Street      | 27th Street      | 2            | 223          | 207               | 223                 | 239                    | 0.140                    | 0.150                | 0.010          | A                | A                                    | No                             | -  |
| Between                              | 27th Street      | Grand Avenue     | 3            | 573          | 557               | 573                 | 589                    | 0.239                    | 0.246                | 0.007          | A                | A                                    | No                             | -  |
| Between                              | Grand Avenue     | 20th Street      | 2            | 163          | 146               | 163                 | 180                    | 0.102                    | 0.112                | 0.010          | A                | A                                    | No                             | -  |
| Between                              | 19th Street      | 17th Street      | 2            | 232          | 225               | 232                 | 239                    | 0.145                    | 0.149                | 0.004          | A                | A                                    | No                             | -  |
| <b>Northgate Avenue - Northbound</b> |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Grand Avenue     | 27th Street      | 3            | 181          | 99                | 181                 | 263                    | 0.075                    | 0.109                | 0.034          | A                | A                                    | No                             | -  |
| <b>Northgate Avenue - Southbound</b> |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | 27th Street      | Grand Avenue     | 3            | 168          | 96                | 168                 | 240                    | 0.070                    | 0.100                | 0.030          | A                | A                                    | No                             | -  |
| <b>Grand Avenue - Eastbound</b>      |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Market Street    | San Pablo Avenue | 3            | 892          | 879               | 892                 | 905                    | 0.372                    | 0.377                | 0.005          | B                | B                                    | No                             | -  |
| Between                              | MLK Way          | Northgate Avenue | 3            | 607          | 579               | 607                 | 635                    | 0.253                    | 0.264                | 0.011          | A                | A                                    | No                             | -  |
| Between                              | Northgate Avenue | Telegraph Avenue | 3            | 598          | 498               | 598                 | 698                    | 0.249                    | 0.291                | 0.042          | A                | A                                    | No                             | -  |
| Between                              | Telegraph Avenue | Broadway         | 3            | 515          | 362               | 515                 | 668                    | 0.215                    | 0.278                | 0.063          | A                | A                                    | No                             | -  |
| Between                              | Broadway         | Harrison Street  | 3            | 1,052        | 976               | 1,052               | 1,128                  | 0.438                    | 0.470                | 0.032          | B                | B                                    | No                             | -  |
| Between                              | Perkins Street   | Euclid Street    | 3            | 1,187        | 1,125             | 1,187               | 1,249                  | 0.494                    | 0.520                | 0.026          | B                | B                                    | No                             | -  |
| <b>Grand Avenue - Eastbound</b>      |                  |                  |              |              |                   |                     |                        |                          |                      |                |                  |                                      |                                |    |
| Between                              | Euclid Street    | Perkins Street   | 3            | 495          | 470               | 495                 | 520                    | 0.206                    | 0.217                | 0.011          | A                | A                                    | No                             | -  |
| Between                              | Harrison Street  | Broadway         | 3            | 730          | 689               | 730                 | 771                    | 0.304                    | 0.321                | 0.017          | A                | A                                    | No                             | -  |
| Between                              | Broadway         | Telegraph Avenue | 3            | 1,109        | 1,012             | 1,109               | 1,206                  | 0.462                    | 0.502                | 0.040          | B                | B                                    | No                             | -  |
| Between                              | Telegraph Avenue | Northgate Avenue | 3            | 619          | 502               | 619                 | 736                    | 0.258                    | 0.307                | 0.049          | A                | A                                    | No                             | -  |
| Between                              | Northgate Avenue | MLK Way          | 3            | 692          | 657               | 692                 | 727                    | 0.288                    | 0.303                | 0.015          | A                | A                                    | No                             | -  |
| Between                              | San Pablo Avenue | Market Street    | 3            | 528          | 497               | 528                 | 559                    | 0.220                    | 0.233                | 0.013          | A                | A                                    | No                             | -  |

Fehr & Peers, 2017.

**2100 Telegraph Development Project EIR  
Alameda CTC CMP/MTS System Analysis Summary - 2040 PM Peak Hour**

| Link Location                        | Segment Limits   | # Lanes          | Model Volume | Model Volume | No Project Volume | With Project Volume | V/C Ratio - No Project | V/C Ratio - With Project | V/C Ratio - Difference | No Project LOS | With Project LOS | Change from LOS E or better to LOS F | LOS F and Change in V/C >= 0.03 |    |
|--------------------------------------|------------------|------------------|--------------|--------------|-------------------|---------------------|------------------------|--------------------------|------------------------|----------------|------------------|--------------------------------------|---------------------------------|----|
| <b>Freeway Segments</b>              |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| <b>I-580 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | San Pablo Avenue | SR-24            | 5            | 8,736        | 8,687             | 8,736               | 8,785                  | 0.874                    | 0.879                  | 0.005          | D                | D                                    | No                              | -  |
| Between                              | SR-24            | Harrison Street  | 5            | 8,083        | 8,044             | 8,083               | 8,122                  | 0.808                    | 0.812                  | 0.004          | D                | D                                    | No                              | -  |
| Between                              | Lakeshore Avenue | Park Boulevard   | 4            | 8,903        | 8,834             | 8,903               | 8,972                  | 1.113                    | 1.121                  | 0.008          | F                | F                                    | -                               | No |
| <b>I-580 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Park Boulevard   | Lakeshore Avenue | 4            | 6,759        | 6,728             | 6,759               | 6,790                  | 0.845                    | 0.849                  | 0.004          | D                | D                                    | No                              | -  |
| Between                              | Harrison Street  | SR-24            | 5            | 6,476        | 6,453             | 6,476               | 6,499                  | 0.648                    | 0.650                  | 0.002          | C                | C                                    | No                              | -  |
| Between                              | SR-24            | San Pablo Avenue | 5            | 8,250        | 8,167             | 8,250               | 8,333                  | 0.825                    | 0.833                  | 0.008          | D                | D                                    | No                              | -  |
| <b>SR-24 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | I-580            | Telegraph Avenue | 4            | 7,165        | 7,126             | 7,165               | 7,204                  | 0.896                    | 0.900                  | 0.004          | D                | D                                    | No                              | -  |
| <b>SR-24 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Telegraph Avenue | I-580            | 4            | 4,181        | 4,158             | 4,181               | 4,204                  | 0.523                    | 0.526                  | 0.003          | B                | B                                    | No                              | -  |
| <b>I-980 Eastbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | I-880            | 12th Street      | 2            | 2,989        | 2,942             | 2,989               | 3,036                  | 0.747                    | 0.759                  | 0.012          | C                | D                                    | No                              | -  |
| <b>I-980 Westbound</b>               |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 12th Street      | I-880            | 3            | 2,897        | 2,785             | 2,897               | 3,009                  | 0.483                    | 0.501                  | 0.018          | B                | B                                    | No                              | -  |
| <b>I-880 Northbound</b>              |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 5th Avenue       | Oak Street       | 4            | 7,661        | 7,614             | 7,661               | 7,708                  | 0.958                    | 0.964                  | 0.006          | E                | E                                    | No                              | -  |
| <b>I-880 Southbound</b>              |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Oak Street       | 5th Avenue       | 5            | 8,338        | 8,226             | 8,338               | 8,450                  | 0.834                    | 0.845                  | 0.011          | D                | D                                    | No                              | -  |
| <b>Arterials</b>                     |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| <b>Telegraph Avenue - Northbound</b> |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 17th Street      | 19th Street      | 2            | 247          | 233               | 247                 | 261                    | 0.155                    | 0.163                  | 0.008          | A                | A                                    | No                              | -  |
| Between                              | 20th Street      | Grand Avenue     | 2            | 380          | 163               | 380                 | 597                    | 0.237                    | 0.373                  | 0.136          | A                | B                                    | No                              | -  |
| Between                              | Grand Avenue     | 27th Street      | 2            | 805          | 733               | 805                 | 877                    | 0.503                    | 0.548                  | 0.045          | B                | B                                    | No                              | -  |
| Between                              | 27th Street      | 34th Street      | 2            | 341          | 322               | 341                 | 360                    | 0.213                    | 0.225                  | 0.012          | A                | A                                    | No                              | -  |
| <b>Telegraph Avenue - Southbound</b> |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 34th Street      | 27th Street      | 2            | 907          | 899               | 907                 | 915                    | 0.567                    | 0.572                  | 0.005          | B                | B                                    | No                              | -  |
| Between                              | 27th Street      | Grand Avenue     | 2            | 298          | 282               | 298                 | 314                    | 0.186                    | 0.196                  | 0.010          | A                | A                                    | No                              | -  |
| Between                              | Grand Avenue     | 20th Street      | 2            | 286          | 158               | 286                 | 414                    | 0.179                    | 0.259                  | 0.080          | A                | A                                    | No                              | -  |
| Between                              | 19th Street      | 17th Street      | 2            | 235          | 224               | 235                 | 246                    | 0.147                    | 0.154                  | 0.007          | A                | A                                    | No                              | -  |
| <b>Broadway - Northbound</b>         |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 17th Street      | 19th Street      | 3            | 322          | 301               | 322                 | 343                    | 0.134                    | 0.143                  | 0.009          | A                | A                                    | No                              | -  |
| Between                              | 20th Street      | Grand Avenue     | 3            | 1,136        | 1,021             | 1,136               | 1,251                  | 0.473                    | 0.521                  | 0.048          | B                | B                                    | No                              | -  |
| Between                              | Grand Avenue     | 27th Street      | 3            | 404          | 379               | 404                 | 429                    | 0.168                    | 0.179                  | 0.011          | A                | A                                    | No                              | -  |
| Between                              | 27th Street      | 34th Street      | 3            | 526          | 501               | 526                 | 551                    | 0.219                    | 0.230                  | 0.011          | A                | A                                    | No                              | -  |
| <b>Broadway - Southbound</b>         |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 34th Street      | 27th Street      | 3            | 674          | 664               | 674                 | 684                    | 0.281                    | 0.285                  | 0.004          | A                | A                                    | No                              | -  |
| Between                              | 27th Street      | Grand Avenue     | 3            | 375          | 365               | 375                 | 385                    | 0.156                    | 0.160                  | 0.004          | A                | A                                    | No                              | -  |
| Between                              | Grand Avenue     | 20th Street      | 3            | 280          | 49                | 280                 | 511                    | 0.116                    | 0.213                  | 0.097          | A                | A                                    | No                              | -  |
| Between                              | 19th Street      | 17th Street      | 3            | 433          | 407               | 433                 | 459                    | 0.180                    | 0.191                  | 0.011          | A                | A                                    | No                              | -  |
| <b>Harrison Street - Northbound</b>  |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 17th Street      | 19th Street      | 2            | 443          | 436               | 443                 | 450                    | 0.277                    | 0.281                  | 0.004          | A                | A                                    | No                              | -  |
| Between                              | 20th Street      | Grand Avenue     | 2            | 659          | 626               | 659                 | 692                    | 0.412                    | 0.432                  | 0.020          | B                | B                                    | No                              | -  |
| Between                              | Grand Avenue     | 27th Street      | 3            | 1,302        | 1,265             | 1,302               | 1,339                  | 0.543                    | 0.558                  | 0.015          | B                | B                                    | No                              | -  |
| Between                              | 27th Street      | Pearl Street     | 2            | 632          | 595               | 632                 | 669                    | 0.395                    | 0.418                  | 0.023          | B                | B                                    | No                              | -  |
| <b>Harrison Street - Southbound</b>  |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Pearl Street     | 27th Street      | 2            | 238          | 222               | 238                 | 254                    | 0.149                    | 0.159                  | 0.010          | A                | A                                    | No                              | -  |
| Between                              | 27th Street      | Grand Avenue     | 3            | 605          | 589               | 605                 | 621                    | 0.252                    | 0.259                  | 0.007          | A                | A                                    | No                              | -  |
| Between                              | Grand Avenue     | 20th Street      | 2            | 137          | 120               | 137                 | 154                    | 0.085                    | 0.096                  | 0.011          | A                | A                                    | No                              | -  |
| Between                              | 19th Street      | 17th Street      | 2            | 181          | 174               | 181                 | 188                    | 0.113                    | 0.118                  | 0.005          | A                | A                                    | No                              | -  |
| <b>Northgate Avenue - Northbound</b> |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Grand Avenue     | 27th Street      | 3            | 181          | 99                | 181                 | 263                    | 0.075                    | 0.109                  | 0.034          | A                | A                                    | No                              | -  |
| <b>Northgate Avenue - Southbound</b> |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | 27th Street      | Grand Avenue     | 3            | 165          | 93                | 165                 | 237                    | 0.069                    | 0.099                  | 0.030          | A                | A                                    | No                              | -  |
| <b>Grand Avenue - Eastbound</b>      |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Market Street    | San Pablo Avenue | 3            | 1,045        | 1,032             | 1,045               | 1,058                  | 0.435                    | 0.441                  | 0.006          | B                | B                                    | No                              | -  |
| Between                              | MLK Way          | Northgate Avenue | 3            | 706          | 678               | 706                 | 734                    | 0.294                    | 0.306                  | 0.012          | A                | A                                    | No                              | -  |
| Between                              | Northgate Avenue | Telegraph Avenue | 3            | 652          | 552               | 652                 | 752                    | 0.272                    | 0.313                  | 0.041          | A                | A                                    | No                              | -  |
| Between                              | Telegraph Avenue | Broadway         | 3            | 571          | 418               | 571                 | 724                    | 0.238                    | 0.301                  | 0.063          | A                | A                                    | No                              | -  |
| Between                              | Broadway         | Harrison Street  | 3            | 952          | 876               | 952                 | 1,028                  | 0.397                    | 0.429                  | 0.032          | B                | B                                    | No                              | -  |
| Between                              | Perkins Street   | Euclid Street    | 3            | 1,133        | 1,071             | 1,133               | 1,195                  | 0.472                    | 0.498                  | 0.026          | B                | B                                    | No                              | -  |
| <b>Grand Avenue - Eastbound</b>      |                  |                  |              |              |                   |                     |                        |                          |                        |                |                  |                                      |                                 |    |
| Between                              | Euclid Street    | Perkins Street   | 3            | 498          | 473               | 498                 | 523                    | 0.207                    | 0.218                  | 0.011          | A                | A                                    | No                              | -  |
| Between                              | Harrison Street  | Broadway         | 3            | 675          | 634               | 675                 | 716                    | 0.281                    | 0.298                  | 0.017          | A                | A                                    | No                              | -  |
| Between                              | Broadway         | Telegraph Avenue | 3            | 1,043        | 946               | 1,043               | 1,140                  | 0.434                    | 0.475                  | 0.041          | B                | B                                    | No                              | -  |
| Between                              | Telegraph Avenue | Northgate Avenue | 3            | 711          | 594               | 711                 | 828                    | 0.296                    | 0.345                  | 0.049          | A                | A                                    | No                              | -  |
| Between                              | Northgate Avenue | MLK Way          | 3            | 788          | 753               | 788                 | 823                    | 0.328                    | 0.343                  | 0.015          | A                | A                                    | No                              | -  |
| Between                              | San Pablo Avenue | Market Street    | 3            | 624          | 593               | 624                 | 655                    | 0.260                    | 0.273                  | 0.013          | A                | A                                    | No                              | -  |

Fehr & Peers, 2017.

## **APPENDIX C.3: Transportation and Parking Demand Management Plan**





## MEMORANDUM

Date: December 5, 2017  
To: Carla Violet, UPP  
From: Rob Rees and Ron Ramos, Fehr & Peers  
**Subject: 2100 Telegraph Avenue Project – Transportation and Parking Management Plan**

OK16-0114

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TDM plans are a requirement of the City of Oakland's Standard Conditions of Approval (Department of Planning and Building, Bureau of Planning, Revised July 22, 2015 – Section 71). The 2100 Telegraph Avenue Project is required to prepare a Transportation and Parking Demand Management (TDM) Plan because it would generate more than 50 peak hour trips. Since the project would generate more than 100 peak hour trips, the TDM Plan goal is to achieve a 20 percent vehicle trip reduction (VTR).

### PROJECT TRANSPORTATION CHARACTERISTICS

The project is located in the block bound by 22nd Street, Broadway, 21st Street, and Telegraph Avenue in Downtown Oakland. The block is currently occupied by Space Burger restaurant, a City owned Parking Garage, and three bank/retail buildings on Broadway. The project proposes a multi-level parking garage which would contain parking for the proposed uses as well as replacement parking from removal of the existing parking garage and loss of on-street parking spaces. The project has four development scenarios:

- The Residential/Office Mix Scenario would consist of 395 apartment units, 880,550 square feet of office space, 85,000 square feet of retail space, and 18,500 square feet of community space.
- The All Office Scenario would consist of 1,450,000 square feet of office space, 80,000 square feet of retail space, and 22,790 square feet of community space.



- The Maximum Office Scenario would consist of 2,689,000 square feet of office space and 87,000 square feet of retail space.
- The Maximum Residential Scenario would consist of 1,556 apartment units, 99,220 square feet of retail space, and 37,150 square feet of community space.

The Project is located in Downtown Oakland, a high-density, transit-rich, pedestrian-friendly area with limited parking supply. Pedestrian, bicycle and transit access between the site and nearby commercial areas is good: there are continuous sidewalks throughout the area, and bikeways connect the project site to adjacent commercial areas.

Transit service providers in the project vicinity include Bay Area Rapid Transit (BART) and AC Transit. The nearest AC Transit bus stops are adjacent to the project site along Broadway at 22nd Street where the bus stops are located on the near-side of the intersection in each direction. Eight local routes, one Transbay route, four night routes, and one school route operate in the vicinity of the project site (within about 500 feet of the site). The nearest BART station to the project site is the 19th Street BART Station, which is one block south of the project site (about 500 feet) and provides access to the Richmond-Daly City and Pittsburg/ Bay Point-SFO-Millbrae lines. In addition, the Oakland Free Broadway shuttle ("Free B") also operates along Broadway with the nearest stop at Grand Avenue.

The project's location is expected to result in a relatively high rate of pedestrian, bicycle, and transit trips. As a result, the automobile trips generated by the project is estimated to be slightly more than half of all trips generated by typical suburban office space, as shown in **Table 1**. Similarly, the VMT per worker in the project area is about 60 percent of the regional VMT per worker (The project VMT per worker is 12.5 compared to the regional VMT of 21.8) as documented in the CEQA document, and the VMT per capita is 3.2 compared to the regional VMT of 15.0. The project's parking supply would also be less than the current parking demand in Downtown Oakland, which would further discourage driving to and from the project site.



**TABLE 1: AUTOMOBILE TRIP GENERATION**

| Land Use, ITE Code                       | Units <sup>a</sup> | Daily          | AM Peak Hour |            |              | PM Peak Hour |              |              |
|--|--------------------|----------------|--------------|------------|--------------|--------------|--------------|--------------|
|  |                    |                | In           | Out        | Total        | In           | Out          | Total        |
| <b>Residential / Office Mix Scenario</b> |                    |                |              |            |              |              |              |              |
| Residential <sup>b</sup>                 | 395 DU             | 2,630          | 40           | 162        | 202          | 159          | 86           | 245          |
| Retail <sup>c</sup>                      | 85 KSF             | 6,120          | 88           | 54         | 142          | 258          | 280          | 538          |
| Office <sup>d</sup>                      | 880.55 KSF         | 6,860          | 960          | 131        | 1,091        | 181          | 884          | 1,065        |
| Non-Auto Reduction (43%) <sup>e</sup>    |                    | -6,710         | -468         | -149       | -617         | -257         | -538         | -795         |
| Pass-by-reduction <sup>f</sup>           |                    | -600           | 0            | 0          | 0            | -52          | -52          | -104         |
| <b>Total Trips</b>                       |                    | <b>8,300</b>   | <b>620</b>   | <b>198</b> | <b>818</b>   | <b>289</b>   | <b>660</b>   | <b>949</b>   |
| <b>All Office Scenario</b>               |                    |                |              |            |              |              |              |              |
| Retail <sup>c</sup>                      | 80 KSF             | 5,880          | 85           | 52         | 137          | 248          | 268          | 516          |
| Office <sup>d</sup>                      | 1,450 KSF          | 10,020         | 1,431        | 195        | 1,626        | 290          | 1,413        | 1,703        |
| Non-Auto Reduction (43%) <sup>e</sup>    |                    | -6,840         | -652         | -106       | -758         | -231         | -723         | -954         |
| Pass-by-reduction <sup>f</sup>           |                    | -570           | 0            | 0          | 0            | -50          | -50          | -100         |
| <b>Total Trips</b>                       |                    | <b>8,490</b>   | <b>864</b>   | <b>141</b> | <b>1,005</b> | <b>257</b>   | <b>908</b>   | <b>1,165</b> |
| <b>Maximum Office Scenario</b>           |                    |                |              |            |              |              |              |              |
| Retail <sup>c</sup>                      | 87 KSF             | 6,210          | 89           | 55         | 144          | 262          | 284          | 546          |
| Office <sup>d</sup>                      | 2,689 KSF          | 16,030         | 2,344        | 320        | 2,664        | 525          | 2,566        | 3,091        |
| Non-Auto Reduction (43%) <sup>e</sup>    |                    | -9,560         | -1,046       | -161       | -1,207       | -338         | -1,226       | -1,564       |
| Pass-by-reduction <sup>f</sup>           |                    | -6010          | 0            | 0          | 0            | -53          | -53          | -106         |
| <b>Total Trips</b>                       |                    | <b>12,0870</b> | <b>1,387</b> | <b>214</b> | <b>1,601</b> | <b>396</b>   | <b>1,571</b> | <b>1,967</b> |
| <b>Maximum Residential Scenario</b>      |                    |                |              |            |              |              |              |              |
| Retail <sup>c</sup>                      | 99.2 KSF           | 6,760          | 97           | 59         | 156          | 286          | 310          | 596          |
| Residential <sup>b</sup>                 | 1,556 DU           | 10,350         | 159          | 635        | 794          | 627          | 338          | 965          |
| Non-Auto Reduction (43%) <sup>e</sup>    |                    | -7,360         | -110         | -299       | -409         | -393         | -278         | -671         |
| Pass-by-reduction <sup>f</sup>           |                    | -660           | 0            | 0          | 0            | -58          | -58          | -116         |
| <b>Total Trips</b>                       |                    | <b>9,900</b>   | <b>146</b>   | <b>395</b> | <b>541</b>   | <b>462</b>   | <b>312</b>   | <b>774</b>   |

<sup>a</sup> DU = Dwelling Units, KSF = 1,000 square feet.

<sup>b</sup> ITE Trip Generation (9th Edition) land use category 220 (Apartment- Adj. Streets, 7-9 AM, 4-6 PM):  
 Daily:  $T = 6.65 * (X)$

AM Peak Hour:  $T = 0.51 * (X)$  (20% in, 80% out)

PM Peak Hour:  $T = 0.62 * (X)$  (65% in, 35% out)

<sup>c</sup> ITE Trip Generation (9th Edition) land use category 820 (Shopping Center – Adj. Streets, 7-9 AM, 4-6 PM):

Daily:  $\ln(T) = 0.65 * \ln(X) + 5.83$

AM Peak Hour:  $\ln(T) = 0.61 * \ln(X) + 2.24$  (62% in, 38% out)

PM Peak Hour:  $\ln(T) = 0.67 * \ln(X) + 3.31$  (48% in, 52% out)

<sup>d</sup> ITE Trip Generation (9th Edition) land use category 710 (General Office Building – Pk. Hr. of Generator):

Daily:  $\ln(T) = 0.76 * \ln(X) + 3.68$

AM Peak Hour:  $\ln(T) = 0.80 * \ln(X) + 1.57$  (88% in, 12% out)

PM Peak Hour:  $T = 1.12(X) + 78.45$  (17% in, 83% out)

<sup>e</sup> The 43% reduction is based on data from the City of Oakland Transportation Impact Study Guidelines for development in an urban environment within 0.5 miles of a BART Station.

<sup>f</sup> PM peak hour pass-by rates based on ITE Trip Generation Handbook (3rd Edition). The weekday PM peak hour average pass-by rates for land use category 820 is 34%. Pass-by rates are not applied to the AM peak hour. Half of the reduction (17%) is applied to the daily trips.

Source: Fehr & Peers, 2017



## MANDATORY TDM STRATEGIES

This section describes the mandatory strategies that shall be implemented at the project. Some of these strategies shall be directly implemented by the building management and others shall be implemented by individual tenants. If the mandatory measures do not achieve the required VTR goals, additional voluntary measures are to be implemented, as described in the following section.

**Table 1** lists the mandatory strategies that are part of the City's *Transportation Impact Review Guidelines* (dated April 14, 2017). **Table 2** and **Table 3** list additional mandatory TDM strategies, the responsible party for implementation, and the effectiveness of each strategy based on research compiled in *Quantifying Greenhouse Gas Mitigation Measures* (California Air Pollution Control Officers Association (CAPCOA), August 2010). This report is a resource for local agencies to quantify the benefit, in terms of reduced travel demand, of implementing various TDM strategies. The mandatory strategies for the project are:

- *Alternative Work Schedule/Flexible Hours/Telecommuting* – Encourage project tenants to offer alternative work schedules, flexible hours, and or telecommuting, which can eliminate employee trips or shift them to non-peak periods.
- *Pre-tax Commuter Benefits* – Encourage project tenants to enroll in WageWorks or other service to help with pre-tax commuter savings. This strategy allows employees to deduct monthly transit passes or other amount using pre-tax dollars. This can help to lower payroll taxes and allows employees to save on transit.
- *Transit Fare Subsidy* – Building management shall either provide or require project tenants to provide free or reduced cost transit in order to increase transit mode share. Options include:
  - Employers can offer a monthly commuter check (or alternatively Clipper Card, which is accepted by BART, AC Transit, and other major transit providers in the Bay Area) to employees to use public transit. Note that as of 2017, IRS allows up to \$255 per employee per month.
  - Employers can participate in AC Transit's EasyPass program, which enables employers to purchase annual bus passes for their employees in bulk at a deep discount. The passes allow unlimited rides on all AC Transit buses for all employees. For more information, see [www.actransit.org/rider-info/easypass](http://www.actransit.org/rider-info/easypass).

Based on the CAPCPA report, a transit fare subsidy of about \$3.00 per employee per day (value to employee) available to 50 percent of the site employees would translate to an approximately 10 percent reduction in driving trips generated by the project.



**TABLE 1: MANDATORY TDM PROGRAM COMPONENTS  
 OAKLAND TRANSPORTATION IMPACT REVIEW GUIDELINES**

| TDM Strategy   | Consideration  |
|--|--|
| Bus boarding islands, bus shelters, concrete pad   | Implement Recommendation TRANS-9 <sup>a</sup>  |
| Curb extensions and bulb-outs  | To be established through design and permit review.  |
| Corridor-level bikeway improvements  | Not applicable. Telegraph already has a Class IV bikeway facility.   |
| Corridor-level transit improvements  | Implement Recommendation TRANS-9 <sup>a</sup>  |
| Amenities such as: lighting, pedestrian-oriented green infrastructure, trees /greening, trash receptacles per the Pedestrian Master Plan and applicable streetscape plans. | To be established through design and permit review.  |
| Safety improvements identified in the Pedestrian Master Plan (such as crosswalk striping, ramps, countdown signals, bus bulbs, etc.)                                       | To be established through design and permit review. In addition, implement Recommendation TRANS-4, Recommendation TRANS-5, Recommendation TRANS-6 <sup>a</sup> |
| In-street bicycle corral   | To be established through design and permit review. In addition, implement Recommendation TRANS-7 <sup>a</sup> .   |
| Intersection improvements  | Implement Recommendation TRANS-1, Recommendation TRANS-2 and Recommendation TRANS-3 <sup>a</sup> .   |
| New sidewalk, curb ramps, curb and gutter meeting current City and ADA standards   | To be established through design and permit review.  |
| Prohibit monthly parking permits and establish minimum price floor for public parking  | Building management after project completion.  |
| Parking garage is designed with retrofit capability  | To be established through design and permit review.  |
| Parking space reserved for car share   | To be established through design and permit review.  |
| Paving, lane striping, or restriping (vehicle and bicycle) and signs to midpoint of street section   | To be established through design and permit review.  |
| Pedestrian crossing improvements, pedestrian-supportive signal changes.  | To be established through design and permit review. In addition, implement Recommendation TRANS-4, Recommendation TRANS-5, Recommendation TRANS-6 <sup>a</sup> |
| Real-time transit information system.  | Implement Recommendation TRANS-10 <sup>a</sup> .   |
| Relocating bus stops to far side   | Not applicable, bus stops adjacent to project are appropriately located  |
| Signal upgrades  | To be established through design and permit review.  |
| Transit queue jump lanes   | Not applicable, queue jump lanes would conflict with bus boarding islands.   |
| Trenching and placing conduit for traffic signal interconnect  | To be established through design and permit review.  |
| Unbundled parking  | Not applicable, residential parking ratio at or below 1 per unit   |

Notes:

<sup>a</sup> Refer to memorandum title, *2100 Telegraph Avenue – Non-CEQA Transportation Assessment* (November 29, 2017) for description of recommendation.

Sources: Fehr & Peers, 2017.



**TABLE 2: MANDATORY TDM PROGRAM COMPONENTS - OFFICE/RETAIL**

| <b>TDM Strategy</b>  | <b>Responsible Party</b>                | <b>Estimated Trip Reduction<sup>a</sup></b> |
|--|---|---|
| Alternative Work Schedule / Flexible Hours / Telecommuting | Project Tenants                         | 1%  |
| Pre-tax Commuter Benefit                                   | Project Tenants                         | 1%  |
| Transit Fare Subsidy                                       | Building Management and Project Tenants | 10% <sup>c</sup>                            |
| Parking Management   | Building Management                     | 5%  |
| Carpool and Ride-Matching Assistance                       | Building Management                     | 1%  |
| Preferential Parking for Carpoolers                        | Building Management                     | 1%  |
| Designate On-Site Car-Share Spaces                         | Building Management                     | 1%  |
| Bicycle Facility Monitoring                                | Building Management                     | NA <sup>a</sup>                             |
| Guaranteed Ride Home                                       | Project Tenants                         | NA <sup>a</sup>                             |
| TDM Coordinator  | Building Management and Project Tenants | NA <sup>a</sup>                             |
| TDM Marketing and Employee Education                       | Building Management and Project Tenants | 2%  |
| <b>Total Estimated Vehicle Trip Reduction</b>              |   | <b>22%</b>                                  |

Notes:

<sup>a</sup> The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012)

<sup>b</sup> The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that at the time of the CAPCOA report development, existing literature did not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.

<sup>c</sup> This strategy assumes that 50% of employees would receive a transit subsidy of \$3.00 per day.

Sources: Fehr & Peers, 2017.



**TABLE 3: MANDATORY TDM PROGRAM COMPONENTS - RESIDENTIAL**

| <b>TDM Strategy</b>                           | <b>Responsible Party</b>                | <b>Estimated Trip Reduction <sup>a</sup></b> |
|---|---|--|
| Transit Fare Subsidy                          | Project Tenants                         | 1%   |
| Parking Management                            | Building Management                     | 12%  |
| Designate On-Site Car-Share Spaces            | Building Management                     | 1%   |
| Bicycle Facility Monitoring                   | Building Management                     | NA <sup>b</sup>                              |
| TDM Coordinator                               | Building Management and Project Tenants | NA <sup>b</sup>                              |
| TDM Marketing and Resident Education          | Building Management and Project Tenants | 1%   |
| <b>Total Estimated Vehicle Trip Reduction</b> |   | <b>15%</b>                                   |

Notes:

<sup>a</sup> The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012)

<sup>b</sup> The effectiveness of this strategy cannot be quantified at this time. This does not necessarily imply that the strategy is ineffective. It only demonstrates that at the time of the CAPCOA report development, existing literature did not provide a robust methodology for calculating its effectiveness. In addition, many strategies are complementary to each other and isolating their specific effectiveness may not be feasible.

Sources: Fehr & Peers, 2017.

- *Parking Management* – Building management shall charge for all parking spaces in the building unless noted in other strategies, remove the cost of parking from the lease agreements, and set the fee for monthly, daily, and/or hourly parking shall be same as or higher than other nearby garages.
- *Carpool and Ride-Matching Assistance Program* – The building management shall offer personalized ride-matching assistance to pair employees interested in forming commute carpools. As an enhancement, building management may consider using specific services such as ZimRide, ComoVee, or 511.org RideShare.
- *Preferential Parking for Carpoolers* – The building management shall offer free or discounted preferential carpool parking for eligible commuters. To be eligible for carpool parking, the carpool shall consist of three or more people. The building management shall monitor and provide adequate carpool spaces to meet and exceed potential demand. Considering the limited parking supply in Downtown Oakland, all or some of the unoccupied parking spaces designated for carpool shall be available for general use after 10:00 AM.



- *Car-Share Spaces* – Designate at least two on-site parking spaces for Car sharing (such as Getaround, Zip Car, etc.) for free. Monitor the usage of the car sharing spaces and adjust if necessary. As an additional strategy, encourage project tenants to provide free/subsidized car-share membership to their employees.
- *Bicycle Facility Monitoring* – As previously described, the project would meet or exceed the City's requirements for short-term and long-term bicycle parking. Building management shall monitor the usage of these facilities and provide additional bicycle parking if necessary.
- *Guaranteed Ride Home* – Encourage project tenants to register for the Guaranteed Ride Home (GRH) program. Employees may be hesitant to commute by any other means, besides driving alone, since they lose the flexibility of leaving work in case of an emergency. GRH programs encourage alternative modes of transportation by offering free rides home in the case of an illness or crisis, if the employee is required to work unscheduled overtime, if a carpool or vanpool is unexpectedly unavailable, or if a bicycle problem arises. The Alameda County Transportation Commission offers a GRH service for all registered permanent employees who are employed within Alameda County, live within 100 miles of their worksite, and do not drive alone to work. The GRH program is offered at no cost to the employer, and employers are not required to register in order for their employees to enroll and use the program.
- *TDM Coordinator* – Each tenant shall designate a staff person as their TDM coordinator to coordinate, monitor and publicize TDM activities. Building management shall also designate a "Building TDM coordinator."
- *TDM Marketing and Tenant/Employee Education*- Building management shall provide tenants and employees information about various transportation options in the project area and the TDM strategies provided by the building. This information would also be posted at central location(s) and be provided to each building tenant. The information shall be updated as necessary. Marketing strategies can promote alternative trips by making commuters aware of the options and incentives of using non-automobile transportation. Implementing commute trip reduction strategies with a complementary marketing strategy can increase the overall effectiveness of the program.

Building management shall provide information on the Bay Area Commuter Benefits Program to all building tenants. As of September 30, 2014, Bay Area employers with 50 or more full-time employees within the Bay Area Air Quality Management District (Air District) geographic boundaries are required to register and offer commuter benefits to their employees in order to comply with Air District Regulation 14, Rule 1, also known as the Bay Area Commuter Benefits Program. Employers must select one of four Commuter Benefit options to offer their employees: a pre-tax benefit, an employer-provided subsidy, employer-provided transit, or an alternative commute benefit. (Information about Commute Benefits Program is at [511.org/employers/commuter/overview](http://511.org/employers/commuter/overview).)





## ADDITIONAL TDM STRATEGIES

The project should consider the implementation of some or all of the following additional strategies to limit automobile use and encourage non-automotive travel. If the mandatory TDM strategies do not meet the required goals, the implementation of some or all of these measures may become necessary. **Table 4** lists these additional TDM strategies, the responsible party for implementation, and their estimated effectiveness.

**TABLE 4: ADDITIONAL TDM PROGRAM COMPONENTS**

| TDM Strategy                         | Responsible Party                       | Estimated Trip Reduction <sup>a</sup> |
|--------------------------------------|---|---------------------------------------|
| Increased Transit Fare Subsidy       | Project Tenants                         | NA <sup>b</sup>                       |
| Increased Parking Fee                | Building Management                     | NA <sup>b</sup>                       |
| Car-Share Membership                 | Project Tenants                         | NA <sup>b</sup>                       |
| Bicycle Share Membership             | Project Tenants                         | NA <sup>b</sup>                       |
| Personalized Trip Planning           | Building Management                     | NA <sup>b</sup>                       |
| TDM Marketing and Resident Education | Building Management and Project Tenants | NA <sup>b</sup>                       |

Notes:

<sup>a</sup> The focus of the CAPCOA document is reductions to VMT but the research used to generate the reductions also indicates vehicle trip reductions are applicable as well. For the purposes of this analysis the VTR is assumed to equal the VMT reduction. See the cited CAPCOA research for more information and related information on page 8 of the BAAQMD *Transportation Demand Management Tool User's Guide* (June 2012)

<sup>b</sup> The effectiveness of this strategy cannot be quantified at this time. Estimated trip reductions will only be recalculated as part of a Corrective Action Plan, if required.

Sources: Fehr & Peers, 2017.

- *Increased Transit Subsidy* – Encourage tenants to increase the transit subsidy provided to employees. Alternatively, the building management can include a specific number of transit passes with each lease agreement.
- *Increased Parking Fees* – Increase the cost of on-site parking to further discourage site employees from driving.
- *Car-Share Membership* – Encourage increased usage of car-share by encouraging tenants to fully or partially pay for their employees' yearly membership fee and insurance associated with car-sharing.
- *Bike-Share Membership* – Encourage increased usage of bike-share by encouraging tenants to fully or partially pay for their employees' yearly membership fee and insurance associated with bike-sharing.



- *Personalized Trip Planning* – In the form of in-person assistance or as a web tool, this provides employees with a customized menu of options for commuting. Trip planning reduces the barriers employees see to making a walk, bike, or transit trip to the site. Transit trip making tools, such as those available from Google or 511.org, could be promoted to inform employees of transit options to/from work. Providing a map of preferred walking routes to destinations within one mile of the site and a map of bicycling routes within five miles of the site would be a proactive strategy to encourage those employees to use alternatives to driving. Building management can make presentation to employers and their employees upon request or at set times.

## TDM COMPLIANCE

Since the proposed project would generate more than 100 net peak hour automobile trips and the TDM Plan contains ongoing operational VTR strategies, the project applicant shall submit an annual compliance report for the first five years following completion of the project for review and approval by the City. The annual report shall document the status and effectiveness of the TDM program, including the actual vehicle trip reduction achieved by the project during operation. If deemed necessary, the City may elect to have a peer review consultant, paid for by the project applicant, review the annual report. If timely reports are not submitted and/or the annual reports indicate that the project applicant has failed to implement the TDM Plan, the project will be considered in violation of the Conditions of Approval and the City may initiate enforcement action as provided for in the Project Conditions of Approval. The project shall not be considered in violation of this Condition if the TDM Plan is implemented but the vehicle trip reduction goal is not achieved.

## APPENDIX D: CalEEMod



2100 Telegraph Existing Conditions - Alameda County, Annual

**2100 Telegraph Existing Conditions**  
**Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                            | Size   | Metric   | Lot Acreage | Floor Surface Area | Population |
|--------------------------------------|--------|----------|-------------|--------------------|------------|
| Bank (with Drive-Through)            | 10.20  | 1000sqft | 0.23        | 10,200.00          | 0          |
| Unenclosed Parking Structure         | 351.00 | Space    | 3.16        | 140,400.00         | 0          |
| Fast Food Restaurant with Drive Thru | 4.30   | 1000sqft | 0.10        | 4,300.00           | 0          |
| Regional Shopping Center             | 24.00  | 1000sqft | 0.55        | 24,000.00          | 0          |

**1.2 Other Project Characteristics**

|                                 |                                |                                 |       |                                  |       |
|---------------------------------|--------------------------------|---------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>             | Urban                          | <b>Wind Speed (m/s)</b>         | 2.2   | <b>Precipitation Freq (Days)</b> | 63    |
| <b>Climate Zone</b>             | 5                              |                                 |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>          | Pacific Gas & Electric Company |                                 |       |                                  |       |
| <b>CO2 Intensity (lb/MW hr)</b> | 427                            | <b>CH4 Intensity (lb/MW hr)</b> | 0.029 | <b>N2O Intensity (lb/MW hr)</b>  | 0.006 |

**1.3 User Entered Comments & Non-Default Data**

2100 Telegraph Existing Conditions - Alameda County, Annual

Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Land Use - Square footage based on Fehr & Peers (2016) traffic analysis.

Construction Phase - Arbitrary input for construction. Construction emissions for this scenario do not matter.

Off-road Equipment -

Off-road Equipment -

Demolition -

Grading -

Vehicle Trips - Trip rates adjusted based on Fehr & Peers (2016) traffic analysis. Average travel distances adjusted based on MTC Travel Model results for project vicinity (TAZ 970).

Woodstoves -

Area Coating -

Energy Use - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD would service the proposed project and applies 100 percent aerobic process and 100 percent cogeneration.

Construction Off-road Equipment Mitigation -

Fleet Mix - Fleet mixes adjusted to represent land use type.

Stationary Sources - Emergency Generators and Fire Pumps -

| Table Name  | Column Name | Default Value | New Value |
|-------------|-------------|---------------|-----------|
| tblFleetMix | HHD         | 0.04          | 0.04      |
| tblFleetMix | HHD         | 0.04          | 0.04      |
| tblFleetMix | HHD         | 0.04          | 0.04      |
| tblFleetMix | HHD         | 0.04          | 0.04      |
| tblFleetMix | LDA         | 0.56          | 0.56      |
| tblFleetMix | LDA         | 0.56          | 0.56      |
| tblFleetMix | LDA         | 0.56          | 0.56      |
| tblFleetMix | LDA         | 0.56          | 0.56      |
| tblFleetMix | LDT1        | 0.04          | 0.04      |

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|             |      |             |             |
|-------------|------|-------------|-------------|
| tblFleetMix | LDT1 | 0.04        | 0.04        |
| tblFleetMix | LDT1 | 0.04        | 0.04        |
| tblFleetMix | LDT1 | 0.04        | 0.04        |
| tblFleetMix | LDT2 | 0.19        | 0.19        |
| tblFleetMix | LDT2 | 0.19        | 0.19        |
| tblFleetMix | LDT2 | 0.19        | 0.19        |
| tblFleetMix | LDT2 | 0.19        | 0.19        |
| tblFleetMix | LHD1 | 0.02        | 0.02        |
| tblFleetMix | LHD1 | 0.02        | 0.02        |
| tblFleetMix | LHD1 | 0.02        | 0.02        |
| tblFleetMix | LHD1 | 0.02        | 0.02        |
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| tblFleetMix | LHD2 | 5.2280e-003 | 5.2600e-003 |
| tblFleetMix | LHD2 | 5.2280e-003 | 5.2600e-003 |
| tblFleetMix | LHD2 | 5.2280e-003 | 5.2600e-003 |
| tblFleetMix | MCY  | 5.5690e-003 | 5.6030e-003 |
| tblFleetMix | MCY  | 5.5690e-003 | 5.6030e-003 |
| tblFleetMix | MCY  | 5.5690e-003 | 5.6030e-003 |
| tblFleetMix | MCY  | 5.5690e-003 | 5.6030e-003 |
| tblFleetMix | MDV  | 0.11        | 0.11        |
| tblFleetMix | MDV  | 0.11        | 0.11        |
| tblFleetMix | MDV  | 0.11        | 0.11        |
| tblFleetMix | MDV  | 0.11        | 0.11        |
| tblFleetMix | MH   | 7.5900e-004 | 0.00        |
| tblFleetMix | MH   | 7.5900e-004 | 0.00        |
| tblFleetMix | MH   | 7.5900e-004 | 0.00        |
| tblFleetMix | MH   | 7.5900e-004 | 0.00        |

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|                           |                    |             |      |
|---------------------------|--------------------|-------------|------|
| tblFleetMix               | MHD                | 0.02        | 0.02 |
| tblFleetMix               | MHD                | 0.02        | 0.02 |
| tblFleetMix               | MHD                | 0.02        | 0.02 |
| tblFleetMix               | MHD                | 0.02        | 0.02 |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00 |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00 |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00 |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00 |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00 |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00 |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00 |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00 |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00 |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00 |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00 |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00 |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35      | 427  |
| tblProjectCharacteristics | OperationalYear    | 2018        | 2020 |
| tblVehicleTrips           | CC_TL              | 7.30        | 4.00 |
| tblVehicleTrips           | CC_TL              | 7.30        | 4.10 |
| tblVehicleTrips           | CC_TL              | 7.30        | 4.10 |
| tblVehicleTrips           | CNW_TL             | 7.30        | 5.20 |
| tblVehicleTrips           | CNW_TL             | 7.30        | 5.20 |
| tblVehicleTrips           | CNW_TL             | 7.30        | 5.20 |
| tblVehicleTrips           | CW_TL              | 9.50        | 8.90 |
| tblVehicleTrips           | CW_TL              | 9.50        | 6.30 |
| tblVehicleTrips           | CW_TL              | 9.50        | 6.30 |



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|                 |                                       |        |        |
|-----------------|---------------------------------------|--------|--------|
| tblVehicleTrips | ST_TR                                 | 86.32  | 12.37  |
| tblVehicleTrips | ST_TR                                 | 722.03 | 34.72  |
| tblVehicleTrips | ST_TR                                 | 49.97  | 28.34  |
| tblVehicleTrips | SU_TR                                 | 31.90  | 4.57   |
| tblVehicleTrips | SU_TR                                 | 542.72 | 26.10  |
| tblVehicleTrips | SU_TR                                 | 25.24  | 14.32  |
| tblVehicleTrips | WD_TR                                 | 148.15 | 21.23  |
| tblVehicleTrips | WD_TR                                 | 496.12 | 23.86  |
| tblVehicleTrips | WD_TR                                 | 42.70  | 24.22  |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |

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|          |                   |       |      |
|----------|-------------------|-------|------|
| tblWater | SepticTankPercent | 10.33 | 0.00 |
| tblWater | SepticTankPercent | 10.33 | 0.00 |

**2.0 Emissions Summary**

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| Quarter | Start Date | End Date  | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|-----------|--|--|
| 1       | 1-1-2000   | 3-31-2000 | 0.3773                                       | 0.3773                                     |
|         |            | Highest   | 0.3773                                       | 0.3773                                     |

2.2 Overall Operational

Unmitigated Operational

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2       | NBio- CO2       | Total CO2       | CH4           | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr          |                 |                 |               |                    |                 |
| Area         | 0.1828        | 3.0000e-005   | 3.6000e-003   | 0.0000             |               | 1.0000e-005        | 1.0000e-005   |                | 1.0000e-005        | 1.0000e-005   | 0.0000         | 6.9600e-003     | 6.9600e-003     | 2.0000e-005   | 0.0000             | 7.4300e-003     |
| Energy       | 5.8600e-003   | 0.0533        | 0.0448        | 3.2000e-004        |               | 4.0500e-003        | 4.0500e-003   |                | 4.0500e-003        | 4.0500e-003   | 0.0000         | 218.8850        | 218.8850        | 0.0120        | 3.3200e-003        | 220.1765        |
| Mobile       | 0.2065        | 1.1127        | 1.6409        | 4.4100e-003        | 0.2844        | 4.4700e-003        | 0.2889        | 0.0761         | 4.2000e-003        | 0.0803        | 0.0000         | 406.5558        | 406.5558        | 0.0269        | 0.0000             | 407.2275        |
| Waste        |               |               |               |                    |               | 0.0000             | 0.0000        |                | 0.0000             | 0.0000        | 17.1020        | 0.0000          | 17.1020         | 1.0107        | 0.0000             | 42.3695         |
| Water        |               |               |               |                    |               | 0.0000             | 0.0000        |                | 0.0000             | 0.0000        | 1.2337         | 4.2772          | 5.5109          | 4.5400e-003   | 2.7400e-003        | 6.4418          |
| <b>Total</b> | <b>0.3952</b> | <b>1.1660</b> | <b>1.6892</b> | <b>4.7300e-003</b> | <b>0.2844</b> | <b>8.5300e-003</b> | <b>0.2929</b> | <b>0.0761</b>  | <b>8.2600e-003</b> | <b>0.0844</b> | <b>18.3357</b> | <b>629.7250</b> | <b>648.0607</b> | <b>1.0542</b> | <b>6.0600e-003</b> | <b>676.2226</b> |

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**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2       | NBio- CO2       | Total CO2       | CH4           | N2O                | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|----------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr          |                 |                 |               |                    |                 |
| Area         | 0.1828        | 3.0000e-005   | 3.6000e-003   | 0.0000             |               | 1.0000e-005        | 1.0000e-005   |                | 1.0000e-005        | 1.0000e-005   | 0.0000         | 6.9600e-003     | 6.9600e-003     | 2.0000e-005   | 0.0000             | 7.4300e-003     |
| Energy       | 5.8600e-003   | 0.0533        | 0.0448        | 3.2000e-004        |               | 4.0500e-003        | 4.0500e-003   |                | 4.0500e-003        | 4.0500e-003   | 0.0000         | 218.8850        | 218.8850        | 0.0120        | 3.3200e-003        | 220.1765        |
| Mobile       | 0.2065        | 1.1127        | 1.6409        | 4.4100e-003        | 0.2844        | 4.4700e-003        | 0.2889        | 0.0761         | 4.2000e-003        | 0.0803        | 0.0000         | 406.5558        | 406.5558        | 0.0269        | 0.0000             | 407.2275        |
| Waste        |               |               |               |                    |               | 0.0000             | 0.0000        |                | 0.0000             | 0.0000        | 17.1020        | 0.0000          | 17.1020         | 1.0107        | 0.0000             | 42.3695         |
| Water        |               |               |               |                    |               | 0.0000             | 0.0000        |                | 0.0000             | 0.0000        | 1.2337         | 4.2772          | 5.5109          | 4.5400e-003   | 2.7400e-003        | 6.4418          |
| <b>Total</b> | <b>0.3952</b> | <b>1.1660</b> | <b>1.6892</b> | <b>4.7300e-003</b> | <b>0.2844</b> | <b>8.5300e-003</b> | <b>0.2929</b> | <b>0.0761</b>  | <b>8.2600e-003</b> | <b>0.0844</b> | <b>18.3357</b> | <b>629.7250</b> | <b>648.0607</b> | <b>1.0542</b> | <b>6.0600e-003</b> | <b>676.2226</b> |

|                   | ROG  | NOx  | CO   | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|------|------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|------|------|------|
| Percent Reduction | 0.00 | 0.00 | 0.00 | 0.00 | 0.00          | 0.00         | 0.00       | 0.00           | 0.00          | 0.00        | 0.00     | 0.00      | 0.00      | 0.00 | 0.00 | 0.00 |

**3.0 Construction Detail**

**Construction Phase**

| Phase Number | Phase Name   | Phase Type            | Start Date | End Date  | Num Days Week | Num Days | Phase Description |
|--------------|--------------|-----------------------|------------|-----------|---------------|----------|-------------------|
| 1            | Demolition   | Demolition            | 1/1/2000   | 1/12/2000 | 5             | 20       |                   |
| 2            | Construction | Building Construction | 1/13/2000  | 2/3/2000  | 5             | 230      |                   |

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**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 3.16**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name   | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|--------------|---------------------------|--------|-------------|-------------|-------------|
| Demolition   | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Demolition   | Excavators                | 3      | 8.00        | 158         | 0.38        |
| Demolition   | Rubber Tired Dozers       | 2      | 8.00        | 247         | 0.40        |
| Construction | Cranes                    | 1      | 7.00        | 231         | 0.29        |
| Construction | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Construction | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Construction | Tractors/Loaders/Backhoes | 3      | 7.00        | 97          | 0.37        |
| Construction | Welders                   | 1      | 8.00        | 46          | 0.45        |

**Trips and VMT**

| Phase Name   | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|--------------|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition   | 6                       | 15.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Construction | 9                       | 72.00              | 29.00              | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

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**3.2 Demolition - 2000**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0408        | 0.3082        | 0.1169        | 1.7700e-003        |               | 0.0175        | 0.0175        |                | 0.0175        | 0.0175        | 0.0000        | 15.8887        | 15.8887        | 3.3200e-003        | 0.0000        | 15.9718        |
| <b>Total</b> | <b>0.0408</b> | <b>0.3082</b> | <b>0.1169</b> | <b>1.7700e-003</b> |               | <b>0.0175</b> | <b>0.0175</b> |                | <b>0.0175</b> | <b>0.0175</b> | <b>0.0000</b> | <b>15.8887</b> | <b>15.8887</b> | <b>3.3200e-003</b> | <b>0.0000</b> | <b>15.9718</b> |

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2900e-003        | 1.6100e-003        | 0.0135        | 1.0000e-005        | 4.7000e-004        | 2.0000e-005        | 4.9000e-004        | 1.3000e-004        | 2.0000e-005        | 1.4000e-004        | 0.0000        | 0.5066        | 0.5066        | 8.0000e-005        | 0.0000        | 0.5086        |
| <b>Total</b> | <b>1.2900e-003</b> | <b>1.6100e-003</b> | <b>0.0135</b> | <b>1.0000e-005</b> | <b>4.7000e-004</b> | <b>2.0000e-005</b> | <b>4.9000e-004</b> | <b>1.3000e-004</b> | <b>2.0000e-005</b> | <b>1.4000e-004</b> | <b>0.0000</b> | <b>0.5066</b> | <b>0.5066</b> | <b>8.0000e-005</b> | <b>0.0000</b> | <b>0.5086</b> |

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**3.2 Demolition - 2000**

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0408        | 0.3082        | 0.1169        | 1.7700e-003        |               | 0.0175        | 0.0175        |                | 0.0175        | 0.0175        | 0.0000        | 15.8887        | 15.8887        | 3.3200e-003        | 0.0000        | 15.9718        |
| <b>Total</b> | <b>0.0408</b> | <b>0.3082</b> | <b>0.1169</b> | <b>1.7700e-003</b> |               | <b>0.0175</b> | <b>0.0175</b> |                | <b>0.0175</b> | <b>0.0175</b> | <b>0.0000</b> | <b>15.8887</b> | <b>15.8887</b> | <b>3.3200e-003</b> | <b>0.0000</b> | <b>15.9718</b> |

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2900e-003        | 1.6100e-003        | 0.0135        | 1.0000e-005        | 4.7000e-004        | 2.0000e-005        | 4.9000e-004        | 1.3000e-004        | 2.0000e-005        | 1.4000e-004        | 0.0000        | 0.5066        | 0.5066        | 8.0000e-005        | 0.0000        | 0.5086        |
| <b>Total</b> | <b>1.2900e-003</b> | <b>1.6100e-003</b> | <b>0.0135</b> | <b>1.0000e-005</b> | <b>4.7000e-004</b> | <b>2.0000e-005</b> | <b>4.9000e-004</b> | <b>1.3000e-004</b> | <b>2.0000e-005</b> | <b>1.4000e-004</b> | <b>0.0000</b> | <b>0.5066</b> | <b>0.5066</b> | <b>8.0000e-005</b> | <b>0.0000</b> | <b>0.5086</b> |



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**3.3 Construction - 2000**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0698        | 0.3861        | 0.1789        | 2.4300e-003        |               | 0.0304        | 0.0304        |                | 0.0304        | 0.0304        | 0.0000        | 21.0289        | 21.0289        | 5.6800e-003        | 0.0000        | 21.1710        |
| <b>Total</b> | <b>0.0698</b> | <b>0.3861</b> | <b>0.1789</b> | <b>2.4300e-003</b> |               | <b>0.0304</b> | <b>0.0304</b> |                | <b>0.0304</b> | <b>0.0304</b> | <b>0.0000</b> | <b>21.0289</b> | <b>21.0289</b> | <b>5.6800e-003</b> | <b>0.0000</b> | <b>21.1710</b> |

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |                    |                    |                    |                    |                    |                    | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 8.7900e-003   | 0.0801        | 0.0505        | 5.8000e-004        | 1.5200e-003        | 2.8300e-003        | 4.3500e-003        | 4.4000e-004        | 2.7100e-003        | 3.1500e-003        | 0.0000        | 6.2796         | 6.2796         | 1.0800e-003        | 0.0000        | 6.3067         |
| Worker       | 0.0124        | 0.0155        | 0.1293        | 8.0000e-005        | 4.5500e-003        | 1.8000e-004        | 4.7300e-003        | 1.2100e-003        | 1.6000e-004        | 1.3800e-003        | 0.0000        | 4.8632         | 4.8632         | 7.6000e-004        | 0.0000        | 4.8823         |
| <b>Total</b> | <b>0.0212</b> | <b>0.0955</b> | <b>0.1798</b> | <b>6.6000e-004</b> | <b>6.0700e-003</b> | <b>3.0100e-003</b> | <b>9.0800e-003</b> | <b>1.6500e-003</b> | <b>2.8700e-003</b> | <b>4.5300e-003</b> | <b>0.0000</b> | <b>11.1428</b> | <b>11.1428</b> | <b>1.8400e-003</b> | <b>0.0000</b> | <b>11.1891</b> |

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**3.3 Construction - 2000**

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0698        | 0.3861        | 0.1789        | 2.4300e-003        |               | 0.0304        | 0.0304        |                | 0.0304        | 0.0304        | 0.0000        | 21.0289        | 21.0289        | 5.6800e-003        | 0.0000        | 21.1710        |
| <b>Total</b> | <b>0.0698</b> | <b>0.3861</b> | <b>0.1789</b> | <b>2.4300e-003</b> |               | <b>0.0304</b> | <b>0.0304</b> |                | <b>0.0304</b> | <b>0.0304</b> | <b>0.0000</b> | <b>21.0289</b> | <b>21.0289</b> | <b>5.6800e-003</b> | <b>0.0000</b> | <b>21.1710</b> |

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |                    |                    |                    |                    |                    |                    | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 8.7900e-003   | 0.0801        | 0.0505        | 5.8000e-004        | 1.5200e-003        | 2.8300e-003        | 4.3500e-003        | 4.4000e-004        | 2.7100e-003        | 3.1500e-003        | 0.0000        | 6.2796         | 6.2796         | 1.0800e-003        | 0.0000        | 6.3067         |
| Worker       | 0.0124        | 0.0155        | 0.1293        | 8.0000e-005        | 4.5500e-003        | 1.8000e-004        | 4.7300e-003        | 1.2100e-003        | 1.6000e-004        | 1.3800e-003        | 0.0000        | 4.8632         | 4.8632         | 7.6000e-004        | 0.0000        | 4.8823         |
| <b>Total</b> | <b>0.0212</b> | <b>0.0955</b> | <b>0.1798</b> | <b>6.6000e-004</b> | <b>6.0700e-003</b> | <b>3.0100e-003</b> | <b>9.0800e-003</b> | <b>1.6500e-003</b> | <b>2.8700e-003</b> | <b>4.5300e-003</b> | <b>0.0000</b> | <b>11.1428</b> | <b>11.1428</b> | <b>1.8400e-003</b> | <b>0.0000</b> | <b>11.1891</b> |

**4.0 Operational Detail - Mobile**

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2100 Telegraph Existing Conditions - Alameda County, Annual

**4.1 Mitigation Measures Mobile**

|             | ROG     | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e     |
|-------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|----------|
| Category    | tons/yr |        |        |             |               |              |            |                |               |             | MT/yr    |           |           |        |        |          |
| Mitigated   | 0.2065  | 1.1127 | 1.6409 | 4.4100e-003 | 0.2844        | 4.4700e-003  | 0.2889     | 0.0761         | 4.2000e-003   | 0.0803      | 0.0000   | 406.5558  | 406.5558  | 0.0269 | 0.0000 | 407.2275 |
| Unmitigated | 0.2065  | 1.1127 | 1.6409 | 4.4100e-003 | 0.2844        | 4.4700e-003  | 0.2889     | 0.0761         | 4.2000e-003   | 0.0803      | 0.0000   | 406.5558  | 406.5558  | 0.0269 | 0.0000 | 407.2275 |

**4.2 Trip Summary Information**

| Land Use                             | Average Daily Trip Rate |               |               | Unmitigated    | Mitigated      |
|--------------------------------------|-------------------------|---------------|---------------|----------------|----------------|
|                                      | Weekday                 | Saturday      | Sunday        | Annual VMT     | Annual VMT     |
| Bank (with Drive-Through)            | 216.55                  | 126.17        | 46.61         | 102,613        | 102,613        |
| Fast Food Restaurant with Drive Thru | 102.60                  | 149.30        | 112.23        | 62,120         | 62,120         |
| Regional Shopping Center             | 581.28                  | 680.16        | 343.68        | 600,839        | 600,839        |
| Unenclosed Parking Structure         | 0.00                    | 0.00          | 0.00          |                |                |
| <b>Total</b>                         | <b>900.42</b>           | <b>955.63</b> | <b>502.52</b> | <b>765,572</b> | <b>765,572</b> |

**4.3 Trip Type Information**

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| Land Use                        | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|---------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                 | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary        | Diverted | Pass-by |
| Bank (with Drive-Through)       | 8.90       | 4.00       | 5.20        | 6.60       | 74.40      | 19.00       | 27             | 26       | 47      |
| Fast Food Restaurant with Drive | 6.30       | 4.10       | 5.20        | 2.20       | 78.80      | 19.00       | 29             | 21       | 50      |
| Regional Shopping Center        | 6.30       | 4.10       | 5.20        | 16.30      | 64.70      | 19.00       | 54             | 35       | 11      |
| Unenclosed Parking Structure    | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |

4.4 Fleet Mix

| Land Use                             | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|--------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Bank (with Drive-Through)            | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Unenclosed Parking Structure         | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Fast Food Restaurant with Drive Thru | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Regional Shopping Center             | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

2100 Telegraph Existing Conditions - Alameda County, Annual

|                         | ROG         | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4         | N2O         | CO2e     |
|-------------------------|-------------|--------|--------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|-------------|----------|
| Category                | tons/yr     |        |        |             |               |              |             |                |               |             | MT/yr    |           |           |             |             |          |
| Electricity Mitigated   |             |        |        |             |               | 0.0000       | 0.0000      |                | 0.0000        | 0.0000      | 0.0000   | 160.8752  | 160.8752  | 0.0109      | 2.2600e-003 | 161.8220 |
| Electricity Unmitigated |             |        |        |             |               | 0.0000       | 0.0000      |                | 0.0000        | 0.0000      | 0.0000   | 160.8752  | 160.8752  | 0.0109      | 2.2600e-003 | 161.8220 |
| NaturalGas Mitigated    | 5.8600e-003 | 0.0533 | 0.0448 | 3.2000e-004 |               | 4.0500e-003  | 4.0500e-003 |                | 4.0500e-003   | 4.0500e-003 | 0.0000   | 58.0098   | 58.0098   | 1.1100e-003 | 1.0600e-003 | 58.3545  |
| NaturalGas Unmitigated  | 5.8600e-003 | 0.0533 | 0.0448 | 3.2000e-004 |               | 4.0500e-003  | 4.0500e-003 |                | 4.0500e-003   | 4.0500e-003 | 0.0000   | 58.0098   | 58.0098   | 1.1100e-003 | 1.0600e-003 | 58.3545  |

5.2 Energy by Land Use - NaturalGas

Unmitigated

|                                      | NaturalGas Use | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O                | CO2e           |
|--------------------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use                             | kBTU/yr        | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |                    |                |
| Bank (with Drive-Through)            | 253266         | 1.3700e-003        | 0.0124        | 0.0104        | 7.0000e-005        |               | 9.4000e-004        | 9.4000e-004        |                | 9.4000e-004        | 9.4000e-004        | 0.0000        | 13.5152        | 13.5152        | 2.6000e-004        | 2.5000e-004        | 13.5956        |
| Fast Food Restaurant with Drive Thru | 722916         | 3.9000e-003        | 0.0354        | 0.0298        | 2.1000e-004        |               | 2.6900e-003        | 2.6900e-003        |                | 2.6900e-003        | 2.6900e-003        | 0.0000        | 38.5776        | 38.5776        | 7.4000e-004        | 7.1000e-004        | 38.8068        |
| Regional Shopping Center             | 110880         | 6.0000e-004        | 5.4400e-003   | 4.5700e-003   | 3.0000e-005        |               | 4.1000e-004        | 4.1000e-004        |                | 4.1000e-004        | 4.1000e-004        | 0.0000        | 5.9170         | 5.9170         | 1.1000e-004        | 1.1000e-004        | 5.9521         |
| Unenclosed Parking Structure         | 0              | 0.0000             | 0.0000        | 0.0000        | 0.0000             |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000             | 0.0000         |
| <b>Total</b>                         |                | <b>5.8700e-003</b> | <b>0.0533</b> | <b>0.0448</b> | <b>3.1000e-004</b> |               | <b>4.0400e-003</b> | <b>4.0400e-003</b> |                | <b>4.0400e-003</b> | <b>4.0400e-003</b> | <b>0.0000</b> | <b>58.0098</b> | <b>58.0098</b> | <b>1.1100e-003</b> | <b>1.0700e-003</b> | <b>58.3545</b> |

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**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

|                                      | NaturalGas Use | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O                | CO2e           |
|--------------------------------------|----------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|--------------------|----------------|
| Land Use                             | kBTU/yr        | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |                    |                |
| Bank (with Drive-Through)            | 253266         | 1.3700e-003        | 0.0124        | 0.0104        | 7.0000e-005        |               | 9.4000e-004        | 9.4000e-004        |                | 9.4000e-004        | 9.4000e-004        | 0.0000        | 13.5152        | 13.5152        | 2.6000e-004        | 2.5000e-004        | 13.5956        |
| Fast Food Restaurant with Drive Thru | 722916         | 3.9000e-003        | 0.0354        | 0.0298        | 2.1000e-004        |               | 2.6900e-003        | 2.6900e-003        |                | 2.6900e-003        | 2.6900e-003        | 0.0000        | 38.5776        | 38.5776        | 7.4000e-004        | 7.1000e-004        | 38.8068        |
| Regional Shopping Center             | 110880         | 6.0000e-004        | 5.4400e-003   | 4.5700e-003   | 3.0000e-005        |               | 4.1000e-004        | 4.1000e-004        |                | 4.1000e-004        | 4.1000e-004        | 0.0000        | 5.9170         | 5.9170         | 1.1000e-004        | 1.1000e-004        | 5.9521         |
| Unenclosed Parking Structure         | 0              | 0.0000             | 0.0000        | 0.0000        | 0.0000             |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000             | 0.0000         |
| <b>Total</b>                         |                | <b>5.8700e-003</b> | <b>0.0533</b> | <b>0.0448</b> | <b>3.1000e-004</b> |               | <b>4.0400e-003</b> | <b>4.0400e-003</b> |                | <b>4.0400e-003</b> | <b>4.0400e-003</b> | <b>0.0000</b> | <b>58.0098</b> | <b>58.0098</b> | <b>1.1100e-003</b> | <b>1.0700e-003</b> | <b>58.3545</b> |

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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

|                                      | Electricity Use | Total CO2       | CH4           | N2O                | CO2e            |
|--------------------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use                             | kWh/yr          | MT/yr           |               |                    |                 |
| Bank (with Drive-Through)            | 78540           | 15.2119         | 1.0300e-003   | 2.1000e-004        | 15.3015         |
| Fast Food Restaurant with Drive Thru | 125775          | 24.3606         | 1.6500e-003   | 3.4000e-004        | 24.5040         |
| Regional Shopping Center             | 257040          | 49.7845         | 3.3800e-003   | 7.0000e-004        | 50.0775         |
| Unenclosed Parking Structure         | 369252          | 71.5182         | 4.8600e-003   | 1.0000e-003        | 71.9391         |
| <b>Total</b>                         |                 | <b>160.8752</b> | <b>0.0109</b> | <b>2.2500e-003</b> | <b>161.8220</b> |

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**5.3 Energy by Land Use - Electricity**

**Mitigated**

|                                      | Electricity Use | Total CO2       | CH4           | N2O                | CO2e            |
|--------------------------------------|-----------------|-----------------|---------------|--------------------|-----------------|
| Land Use                             | kWh/yr          | MT/yr           |               |                    |                 |
| Bank (with Drive-Through)            | 78540           | 15.2119         | 1.0300e-003   | 2.1000e-004        | 15.3015         |
| Fast Food Restaurant with Drive Thru | 125775          | 24.3606         | 1.6500e-003   | 3.4000e-004        | 24.5040         |
| Regional Shopping Center             | 257040          | 49.7845         | 3.3800e-003   | 7.0000e-004        | 50.0775         |
| Unenclosed Parking Structure         | 369252          | 71.5182         | 4.8600e-003   | 1.0000e-003        | 71.9391         |
| <b>Total</b>                         |                 | <b>160.8752</b> | <b>0.0109</b> | <b>2.2500e-003</b> | <b>161.8220</b> |

**6.0 Area Detail**

**6.1 Mitigation Measures Area**



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|             | ROG     | NOx         | CO          | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2   | Total CO2   | CH4         | N2O    | CO2e        |
|-------------|---------|-------------|-------------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-------------|-------------|-------------|--------|-------------|
| Category    | tons/yr |             |             |        |               |              |             |                |               |             | MT/yr    |             |             |             |        |             |
| Mitigated   | 0.1828  | 3.0000e-005 | 3.6000e-003 | 0.0000 |               | 1.0000e-005  | 1.0000e-005 |                | 1.0000e-005   | 1.0000e-005 | 0.0000   | 6.9600e-003 | 6.9600e-003 | 2.0000e-005 | 0.0000 | 7.4300e-003 |
| Unmitigated | 0.1828  | 3.0000e-005 | 3.6000e-003 | 0.0000 |               | 1.0000e-005  | 1.0000e-005 |                | 1.0000e-005   | 1.0000e-005 | 0.0000   | 6.9600e-003 | 6.9600e-003 | 2.0000e-005 | 0.0000 | 7.4300e-003 |

6.2 Area by SubCategory

Unmitigated

|                       | ROG           | NOx                | CO                 | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2          | Total CO2          | CH4                | N2O           | CO2e               |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|
| SubCategory           | tons/yr       |                    |                    |               |               |                    |                    |                |                    |                    | MT/yr         |                    |                    |                    |               |                    |
| Architectural Coating | 0.0230        |                    |                    |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             |
| Consumer Products     | 0.1594        |                    |                    |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             |
| Landscaping           | 3.4000e-004   | 3.0000e-005        | 3.6000e-003        | 0.0000        |               | 1.0000e-005        | 1.0000e-005        |                | 1.0000e-005        | 1.0000e-005        | 0.0000        | 6.9600e-003        | 6.9600e-003        | 2.0000e-005        | 0.0000        | 7.4300e-003        |
| <b>Total</b>          | <b>0.1828</b> | <b>3.0000e-005</b> | <b>3.6000e-003</b> | <b>0.0000</b> |               | <b>1.0000e-005</b> | <b>1.0000e-005</b> |                | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>6.9600e-003</b> | <b>6.9600e-003</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>7.4300e-003</b> |

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**6.2 Area by SubCategory**

**Mitigated**

|                       | ROG           | NOx                | CO                 | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2          | Total CO2          | CH4                | N2O           | CO2e               |
|-----------------------|---------------|--------------------|--------------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|--------------------|--------------------|--------------------|---------------|--------------------|
| SubCategory           | tons/yr       |                    |                    |               |               |                    |                    |                |                    |                    | MT/yr         |                    |                    |                    |               |                    |
| Architectural Coating | 0.0230        |                    |                    |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             |
| Consumer Products     | 0.1594        |                    |                    |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             |
| Landscaping           | 3.4000e-004   | 3.0000e-005        | 3.6000e-003        | 0.0000        |               | 1.0000e-005        | 1.0000e-005        |                | 1.0000e-005        | 1.0000e-005        | 0.0000        | 6.9600e-003        | 6.9600e-003        | 2.0000e-005        | 0.0000        | 7.4300e-003        |
| <b>Total</b>          | <b>0.1828</b> | <b>3.0000e-005</b> | <b>3.6000e-003</b> | <b>0.0000</b> |               | <b>1.0000e-005</b> | <b>1.0000e-005</b> |                | <b>1.0000e-005</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>6.9600e-003</b> | <b>6.9600e-003</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>7.4300e-003</b> |

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

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|             | Total CO2 | CH4         | N2O         | CO2e   |
|-------------|-----------|-------------|-------------|--------|
| Category    | MT/yr     |             |             |        |
| Mitigated   | 5.5109    | 4.5400e-003 | 2.7400e-003 | 6.4418 |
| Unmitigated | 5.5109    | 4.5400e-003 | 2.7400e-003 | 6.4418 |

**7.2 Water by Land Use**

**Unmitigated**

|                                      | Indoor/Outdoor Use  | Total CO2     | CH4                | N2O                | CO2e          |
|--------------------------------------|---------------------|---------------|--------------------|--------------------|---------------|
| Land Use                             | Mgal                | MT/yr         |                    |                    |               |
| Bank (with Drive-Through)            | 0.404154 / 0.247707 | 0.6950        | 5.3000e-004        | 3.2000e-004        | 0.8032        |
| Fast Food Restaurant with Drive Thru | 1.30519 / 0.0833103 | 1.7587        | 1.6800e-003        | 1.0200e-003        | 2.1054        |
| Regional Shopping Center             | 1.77774 / 1.08958   | 3.0572        | 2.3300e-003        | 1.4000e-003        | 3.5332        |
| Unenclosed Parking Structure         | 0 / 0               | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| <b>Total</b>                         |                     | <b>5.5109</b> | <b>4.5400e-003</b> | <b>2.7400e-003</b> | <b>6.4418</b> |

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**7.2 Water by Land Use**

**Mitigated**

|                                      | Indoor/Outdoor Use  | Total CO2     | CH4                | N2O                | CO2e          |
|--------------------------------------|---------------------|---------------|--------------------|--------------------|---------------|
| Land Use                             | Mgal                | MT/yr         |                    |                    |               |
| Bank (with Drive-Through)            | 0.404154 / 0.247707 | 0.6950        | 5.3000e-004        | 3.2000e-004        | 0.8032        |
| Fast Food Restaurant with Drive Thru | 1.30519 / 0.0833103 | 1.7587        | 1.6800e-003        | 1.0200e-003        | 2.1054        |
| Regional Shopping Center             | 1.77774 / 1.08958   | 3.0572        | 2.3300e-003        | 1.4000e-003        | 3.5332        |
| Unenclosed Parking Structure         | 0 / 0               | 0.0000        | 0.0000             | 0.0000             | 0.0000        |
| <b>Total</b>                         |                     | <b>5.5109</b> | <b>4.5400e-003</b> | <b>2.7400e-003</b> | <b>6.4418</b> |

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

2100 Telegraph Existing Conditions - Alameda County, Annual

**Category/Year**

|             | Total CO2 | CH4    | N2O    | CO2e    |
|-------------|-----------|--------|--------|---------|
|             | MT/yr     |        |        |         |
| Mitigated   | 17.1020   | 1.0107 | 0.0000 | 42.3695 |
| Unmitigated | 17.1020   | 1.0107 | 0.0000 | 42.3695 |

**8.2 Waste by Land Use**

**Unmitigated**

|                                      | Waste Disposed | Total CO2      | CH4           | N2O           | CO2e           |
|--------------------------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use                             | tons           | MT/yr          |               |               |                |
| Bank (with Drive-Through)            | 9.52           | 1.9325         | 0.1142        | 0.0000        | 4.7876         |
| Fast Food Restaurant with Drive Thru | 49.53          | 10.0541        | 0.5942        | 0.0000        | 24.9087        |
| Regional Shopping Center             | 25.2           | 5.1154         | 0.3023        | 0.0000        | 12.6731        |
| Unenclosed Parking Structure         | 0              | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| <b>Total</b>                         |                | <b>17.1020</b> | <b>1.0107</b> | <b>0.0000</b> | <b>42.3695</b> |

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**8.2 Waste by Land Use**

**Mitigated**

|                                      | Waste Disposed | Total CO2      | CH4           | N2O           | CO2e           |
|--------------------------------------|----------------|----------------|---------------|---------------|----------------|
| Land Use                             | tons           | MT/yr          |               |               |                |
| Bank (with Drive-Through)            | 9.52           | 1.9325         | 0.1142        | 0.0000        | 4.7876         |
| Fast Food Restaurant with Drive Thru | 49.53          | 10.0541        | 0.5942        | 0.0000        | 24.9087        |
| Regional Shopping Center             | 25.2           | 5.1154         | 0.3023        | 0.0000        | 12.6731        |
| Unenclosed Parking Structure         | 0              | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| <b>Total</b>                         |                | <b>17.1020</b> | <b>1.0107</b> | <b>0.0000</b> | <b>42.3695</b> |

**9.0 Operational Offroad**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|------------|-------------|-------------|-----------|
|----------------|--------|-----------|------------|-------------|-------------|-----------|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

**User Defined Equipment**

2100 Telegraph Existing Conditions - Alameda County, Annual

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

**11.0 Vegetation**

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2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

**2100 Telegraph Avenue Project: Preferred Development Scenario**  
**Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                      | Size     | Metric        | Lot Acreage | Floor Surface Area | Population |
|--------------------------------|----------|---------------|-------------|--------------------|------------|
| General Office Building        | 880.55   | 1000sqft      | 0.00        | 880,550.00         | 2642       |
| Day-Care Center                | 19.00    | 1000sqft      | 0.00        | 19,000.00          | 0          |
| Enclosed Parking with Elevator | 1,821.00 | Space         | 0.00        | 728,400.00         | 0          |
| Apartments High Rise           | 395.00   | Dwelling Unit | 3.14        | 359,720.00         | 830        |
| Regional Shopping Center       | 85.00    | 1000sqft      | 0.00        | 85,000.00          | 213        |

**1.2 Other Project Characteristics**

|                                |                                |                                |       |                                  |       |
|--------------------------------|--------------------------------|--------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>            | Urban                          | <b>Wind Speed (m/s)</b>        | 2.2   | <b>Precipitation Freq (Days)</b> | 63    |
| <b>Climate Zone</b>            | 5                              |                                |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>         | Pacific Gas & Electric Company |                                |       |                                  |       |
| <b>CO2 Intensity (lb/MWhr)</b> | 427                            | <b>CH4 Intensity (lb/MWhr)</b> | 0.029 | <b>N2O Intensity (lb/MWhr)</b>   | 0.006 |

**1.3 User Entered Comments & Non-Default Data**



2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Land Use - Square footage updated based on project design. Population estimates based on 2.1 persons/residential unit, 3 persons/KSF office, 2.5 persons/KSF retail.

Construction Phase - According to project sponsor, construction expected to last up to 30 months.

Off-road Equipment - Added forklift for general construction activities.

Off-road Equipment - Added crane and drill rig for shoring and piles.

Trips and VMT - Conservatively assuming 1 vendor truck every 5 minutes (96 vendor trucks/8-hour day)

Demolition - Asphalt demo assumption: (Area of pavement)(Depth of pavement)(Density asphalt) = (33 KSF)(0.25 ft)(0.0725 tons/ft<sup>3</sup>) = 598 tons

Building demo assumption: (Area of buildings)(CalEEMod conversion factor) = (214.5 KSF)(0.046 tons/ft<sup>2</sup>) = 98,670 tons

Grading - Project sponsor anticipates up to 66,000 CY of material export.

Architectural Coating - No exterior paint in the project design.

Vehicle Trips - Trip rates adjusted based on Fehr & Peers (2016) traffic analysis and SCA-TRANS-4 . Average travel distances adjusted based on MTC Travel Model results for project vicinity (TAZ 970).

Woodstoves - No fireplaces or woodstoves.

Consumer Products - ROG emission factor for consumer products reduced by 14.6% based on CARB's 2012 Statewide inventory.

Area Coating - No exterior paint included in the project design.

Energy Use - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD would service the proposed project and applies 100 percent aerobic process and 100 percent cogeneration.

Construction Off-road Equipment Mitigation - SCA-AIR-1 (#19) Enhanced Controls require use of Tier 4 engines. These emission reductions are considered part of the project's unmitigated emissions.

Water Mitigation - CALGreen Code mandatory requirement. These emission reductions are considered part of the project's unmitigated emissions.

Fleet Mix - Project is not expected to generate new bus or mobile home trips, and home-based trips would not include medium heavy-duty or heavy heavy-duty trucks.

Stationary Sources - Emergency Generators and Fire Pumps - Emergency generators for elevators. Limited to 50 hours of testing/maintenance per year. Assume maximum 1 hour operation/test day.

| Table Name              | Column Name                       | Default Value | New Value |
|-------------------------|-----------------------------------|---------------|-----------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 492,275.00    | 0.00      |
| tblArchitecturalCoating | ConstArea_Residential_Exterior    | 242,811.00    | 0.00      |
| tblAreaCoating          | Area_Nonresidential_Exterior      | 492275        | 0         |



## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

|                         |                   |           |              |
|-------------------------|-------------------|-----------|--------------|
| tblConstEquipMitigation | Tier              | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change | Tier 4 Final |
| tblConstructionPhase    | NumDays           | 18.00     | 120.00       |
| tblConstructionPhase    | NumDays           | 230.00    | 360.00       |
| tblConstructionPhase    | NumDays           | 20.00     | 40.00        |
| tblConstructionPhase    | NumDays           | 8.00      | 80.00        |
| tblConstructionPhase    | NumDays           | 18.00     | 40.00        |
| tblConstructionPhase    | NumDays           | 5.00      | 10.00        |
| tblConsumerProducts     | ROG_EF            | 2.14E-05  | 1.83E-05     |
| tblFireplaces           | NumberGas         | 59.25     | 0.00         |
| tblFireplaces           | NumberNoFireplace | 15.80     | 0.00         |
| tblFireplaces           | NumberWood        | 67.15     | 0.00         |
| tblFleetMix             | HHD               | 0.04      | 0.04         |
| tblFleetMix             | HHD               | 0.04      | 0.00         |
| tblFleetMix             | HHD               | 0.04      | 0.04         |
| tblFleetMix             | LDA               | 0.56      | 0.56         |
| tblFleetMix             | LDA               | 0.56      | 0.60         |
| tblFleetMix             | LDA               | 0.56      | 0.56         |
| tblFleetMix             | LDT1              | 0.04      | 0.04         |
| tblFleetMix             | LDT1              | 0.04      | 0.04         |
| tblFleetMix             | LDT1              | 0.04      | 0.04         |
| tblFleetMix             | LDT2              | 0.19      | 0.19         |
| tblFleetMix             | LDT2              | 0.19      | 0.21         |
| tblFleetMix             | LDT2              | 0.19      | 0.19         |
| tblFleetMix             | LHD1              | 0.02      | 0.02         |

## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

|             |                  |             |             |
|-------------|------------------|-------------|-------------|
| tblFleetMix | LHD1             | 0.02        | 0.02        |
| tblFleetMix | LHD1             | 0.02        | 0.02        |
| tblFleetMix | LHD2             | 5.2280e-003 | 5.2595e-003 |
| tblFleetMix | LHD2             | 5.2280e-003 | 5.6302e-003 |
| tblFleetMix | LHD2             | 5.2280e-003 | 5.2595e-003 |
| tblFleetMix | MCY              | 5.5690e-003 | 5.6026e-003 |
| tblFleetMix | MCY              | 5.5690e-003 | 5.9975e-003 |
| tblFleetMix | MCY              | 5.5690e-003 | 5.6026e-003 |
| tblFleetMix | MDV              | 0.11        | 0.11        |
| tblFleetMix | MDV              | 0.11        | 0.12        |
| tblFleetMix | MDV              | 0.11        | 0.11        |
| tblFleetMix | MH               | 7.5900e-004 | 0.00        |
| tblFleetMix | MH               | 7.5900e-004 | 0.00        |
| tblFleetMix | MH               | 7.5900e-004 | 0.00        |
| tblFleetMix | MHD              | 0.02        | 0.02        |
| tblFleetMix | MHD              | 0.02        | 0.00        |
| tblFleetMix | MHD              | 0.02        | 0.02        |
| tblFleetMix | OBUS             | 2.1180e-003 | 0.00        |
| tblFleetMix | OBUS             | 2.1180e-003 | 0.00        |
| tblFleetMix | OBUS             | 2.1180e-003 | 0.00        |
| tblFleetMix | SBUS             | 3.0800e-004 | 0.00        |
| tblFleetMix | SBUS             | 3.0800e-004 | 0.00        |
| tblFleetMix | SBUS             | 3.0800e-004 | 0.00        |
| tblFleetMix | UBUS             | 2.8050e-003 | 0.00        |
| tblFleetMix | UBUS             | 2.8050e-003 | 0.00        |
| tblFleetMix | UBUS             | 2.8050e-003 | 0.00        |
| tblGrading  | MaterialExported | 0.00        | 66,000.00   |

## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

|                           |                         |            |            |
|---------------------------|-------------------------|------------|------------|
| tblLandUse                | BuildingSpaceSquareFeet | 395,000.00 | 359,720.00 |
| tblLandUse                | LandUseSquareFeet       | 395,000.00 | 359,720.00 |
| tblLandUse                | LotAcreage              | 20.21      | 0.00       |
| tblLandUse                | LotAcreage              | 0.44       | 0.00       |
| tblLandUse                | LotAcreage              | 16.39      | 0.00       |
| tblLandUse                | LotAcreage              | 6.37       | 3.14       |
| tblLandUse                | LotAcreage              | 1.95       | 0.00       |
| tblLandUse                | Population              | 0.00       | 2,642.00   |
| tblLandUse                | Population              | 1,130.00   | 830.00     |
| tblLandUse                | Population              | 0.00       | 213.00     |
| tblProjectCharacteristics | CO2IntensityFactor      | 641.35     | 427        |
| tblProjectCharacteristics | OperationalYear         | 2018       | 2020       |
| tblTripsAndVMT            | VendorTripNumber        | 323.00     | 96.00      |
| tblVehicleTrips           | CC_TL                   | 7.30       | 2.20       |
| tblVehicleTrips           | CC_TL                   | 7.30       | 4.10       |
| tblVehicleTrips           | CNW_TL                  | 7.30       | 5.20       |
| tblVehicleTrips           | CNW_TL                  | 7.30       | 5.20       |
| tblVehicleTrips           | CW_TL                   | 9.50       | 8.40       |
| tblVehicleTrips           | CW_TL                   | 9.50       | 6.30       |
| tblVehicleTrips           | HO_TL                   | 5.70       | 2.80       |
| tblVehicleTrips           | HS_TL                   | 4.80       | 2.00       |
| tblVehicleTrips           | HW_TL                   | 10.80      | 7.30       |
| tblVehicleTrips           | ST_TR                   | 4.98       | 2.27       |
| tblVehicleTrips           | ST_TR                   | 6.21       | 0.00       |
| tblVehicleTrips           | ST_TR                   | 2.46       | 1.12       |
| tblVehicleTrips           | ST_TR                   | 49.97      | 22.78      |
| tblVehicleTrips           | SU_TR                   | 3.65       | 1.66       |



## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

|               |                    |       |      |
|---------------|--------------------|-------|------|
| tblWater      | SepticTankPercent  | 10.33 | 0.00 |
| tblWater      | SepticTankPercent  | 10.33 | 0.00 |
| tblWater      | SepticTankPercent  | 10.33 | 0.00 |
| tblWater      | SepticTankPercent  | 10.33 | 0.00 |
| tblWater      | SepticTankPercent  | 10.33 | 0.00 |
| tblWoodstoves | NumberCatalytic    | 7.90  | 0.00 |
| tblWoodstoves | NumberNoncatalytic | 7.90  | 0.00 |

**2.0 Emissions Summary**

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2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.7897        | 8.2063        | 5.2298        | 0.0186        | 2.0917        | 0.2492        | 2.3409        | 0.5272         | 0.2323        | 0.7595        | 0.0000        | 1,734.5006        | 1,734.5006        | 0.1761        | 0.0000        | 1,738.9033        |
| 2019           | 0.7345        | 4.3242        | 5.5113        | 0.0148        | 0.8958        | 0.1741        | 1.0699        | 0.2400         | 0.1635        | 0.4035        | 0.0000        | 1,344.2968        | 1,344.2968        | 0.1134        | 0.0000        | 1,347.1317        |
| 2020           | 5.3262        | 0.2345        | 0.4984        | 1.1700e-003   | 0.0865        | 0.0142        | 0.1007        | 0.0230         | 0.0136        | 0.0366        | 0.0000        | 104.8038          | 104.8038          | 7.1800e-003   | 0.0000        | 104.9834          |
| <b>Maximum</b> | <b>5.3262</b> | <b>8.2063</b> | <b>5.5113</b> | <b>0.0186</b> | <b>2.0917</b> | <b>0.2492</b> | <b>2.3409</b> | <b>0.5272</b>  | <b>0.2323</b> | <b>0.7595</b> | <b>0.0000</b> | <b>1,734.5006</b> | <b>1,734.5006</b> | <b>0.1761</b> | <b>0.0000</b> | <b>1,738.9033</b> |

**Mitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.4263        | 4.2912        | 5.3714        | 0.0186        | 2.0917        | 0.0279        | 2.1195        | 0.5272         | 0.0268        | 0.5541        | 0.0000        | 1,734.5001        | 1,734.5001        | 0.1761        | 0.0000        | 1,738.9028        |
| 2019           | 0.4849        | 1.9776        | 5.5647        | 0.0148        | 0.8958        | 0.0200        | 0.9158        | 0.2400         | 0.0191        | 0.2591        | 0.0000        | 1,344.2964        | 1,344.2964        | 0.1134        | 0.0000        | 1,347.1314        |
| 2020           | 5.3040        | 0.0431        | 0.5026        | 1.1700e-003   | 0.0865        | 1.0700e-003   | 0.0876        | 0.0230         | 1.0200e-003   | 0.0240        | 0.0000        | 104.8038          | 104.8038          | 7.1800e-003   | 0.0000        | 104.9834          |
| <b>Maximum</b> | <b>5.3040</b> | <b>4.2912</b> | <b>5.5647</b> | <b>0.0186</b> | <b>2.0917</b> | <b>0.0279</b> | <b>2.1195</b> | <b>0.5272</b>  | <b>0.0268</b> | <b>0.5541</b> | <b>0.0000</b> | <b>1,734.5001</b> | <b>1,734.5001</b> | <b>0.1761</b> | <b>0.0000</b> | <b>1,738.9028</b> |



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|                   | ROG  | NOx   | CO    | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 9.27 | 50.55 | -1.77 | 0.00 | 0.00          | 88.82        | 11.07      | 0.00           | 88.52         | 30.21       | 0.00     | 0.00     | 0.00      | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date   | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|--|--|
| 1       | 1-1-2018   | 3-31-2018  | 3.3074                                       | 1.9597                                     |
| 2       | 4-1-2018   | 6-30-2018  | 2.5708                                       | 1.1997                                     |
| 3       | 7-1-2018   | 9-30-2018  | 1.5097                                       | 0.7374                                     |
| 4       | 10-1-2018  | 12-31-2018 | 1.5431                                       | 0.7708                                     |
| 5       | 1-1-2019   | 3-31-2019  | 1.3761                                       | 0.7051                                     |
| 6       | 4-1-2019   | 6-30-2019  | 1.3626                                       | 0.6840                                     |
| 7       | 7-1-2019   | 9-30-2019  | 1.3775                                       | 0.6916                                     |
| 8       | 10-1-2019  | 12-31-2019 | 0.9362                                       | 0.3820                                     |
| 9       | 1-1-2020   | 3-31-2020  | 2.7058                                       | 2.5834                                     |
| 10      | 4-1-2020   | 6-30-2020  | 2.8520                                       | 2.7658                                     |
|         |            | Highest    | 3.3074                                       | 2.7658                                     |

2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2         | Total CO2         | CH4            | N2O           | CO2e              |
|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|-------------------|-------------------|----------------|---------------|-------------------|
| Category     | tons/yr       |               |                |               |               |               |               |                |               |               | MT/yr           |                   |                   |                |               |                   |
| Area         | 5.1549        | 0.0343        | 2.9686         | 1.6000e-004   |               | 0.0163        | 0.0163        |                | 0.0163        | 0.0163        | 0.0000          | 4.8410            | 4.8410            | 4.8100e-003    | 0.0000        | 4.9612            |
| Energy       | 0.1204        | 1.0811        | 0.8219         | 6.5700e-003   |               | 0.0832        | 0.0832        |                | 0.0832        | 0.0832        | 0.0000          | 4,859.1189        | 4,859.1189        | 0.2719         | 0.0734        | 4,887.7842        |
| Mobile       | 1.5212        | 7.3034        | 13.6041        | 0.0384        | 2.7772        | 0.0376        | 2.8148        | 0.7428         | 0.0353        | 0.7781        | 0.0000          | 3,529.3854        | 3,529.3854        | 0.1914         | 0.0000        | 3,534.1691        |
| Stationary   | 0.1101        | 0.4461        | 0.2807         | 5.3000e-004   |               | 0.0162        | 0.0162        |                | 0.0162        | 0.0162        | 0.0000          | 51.0839           | 51.0839           | 7.1600e-003    | 0.0000        | 51.2630           |
| Waste        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 226.2456        | 0.0000            | 226.2456          | 13.3707        | 0.0000        | 560.5139          |
| Water        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 66.9925         | 260.0196          | 327.0121          | 0.2482         | 0.1493        | 377.7215          |
| <b>Total</b> | <b>6.9066</b> | <b>8.8648</b> | <b>17.6753</b> | <b>0.0457</b> | <b>2.7772</b> | <b>0.1532</b> | <b>2.9304</b> | <b>0.7428</b>  | <b>0.1509</b> | <b>0.8937</b> | <b>293.2381</b> | <b>8,704.4489</b> | <b>8,997.6870</b> | <b>14.0942</b> | <b>0.2227</b> | <b>9,416.4130</b> |

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**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx           | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2         | Total CO2         | CH4            | N2O           | CO2e              |
|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|-------------------|-------------------|----------------|---------------|-------------------|
| Category     | tons/yr       |               |                |               |               |               |               |                |               |               | MT/yr           |                   |                   |                |               |                   |
| Area         | 5.1549        | 0.0343        | 2.9686         | 1.6000e-004   |               | 0.0163        | 0.0163        |                | 0.0163        | 0.0163        | 0.0000          | 4.8410            | 4.8410            | 4.8100e-003    | 0.0000        | 4.9612            |
| Energy       | 0.1204        | 1.0811        | 0.8219         | 6.5700e-003   |               | 0.0832        | 0.0832        |                | 0.0832        | 0.0832        | 0.0000          | 4,859.1189        | 4,859.1189        | 0.2719         | 0.0734        | 4,887.7842        |
| Mobile       | 1.5212        | 7.3034        | 13.6041        | 0.0384        | 2.7772        | 0.0376        | 2.8148        | 0.7428         | 0.0353        | 0.7781        | 0.0000          | 3,529.3854        | 3,529.3854        | 0.1914         | 0.0000        | 3,534.1691        |
| Stationary   | 0.1101        | 0.4461        | 0.2807         | 5.3000e-004   |               | 0.0162        | 0.0162        |                | 0.0162        | 0.0162        | 0.0000          | 51.0839           | 51.0839           | 7.1600e-003    | 0.0000        | 51.2630           |
| Waste        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 226.2456        | 0.0000            | 226.2456          | 13.3707        | 0.0000        | 560.5139          |
| Water        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 53.5940         | 224.0276          | 277.6216          | 0.1997         | 0.1197        | 318.2834          |
| <b>Total</b> | <b>6.9066</b> | <b>8.8648</b> | <b>17.6753</b> | <b>0.0457</b> | <b>2.7772</b> | <b>0.1532</b> | <b>2.9304</b> | <b>0.7428</b>  | <b>0.1509</b> | <b>0.8937</b> | <b>279.8396</b> | <b>8,668.4569</b> | <b>8,948.2965</b> | <b>14.0457</b> | <b>0.1931</b> | <b>9,356.9748</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio-CO2    | Total CO2   | CH4         | N2O          | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>4.57</b> | <b>0.41</b> | <b>0.55</b> | <b>0.34</b> | <b>13.31</b> | <b>0.63</b> |

**3.0 Construction Detail**

**Construction Phase**

## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

| Phase Number | Phase Name                                      | Phase Type            | Start Date | End Date   | Num Days Week | Num Days | Phase Description |
|--------------|---|-----------------------|------------|------------|---------------|----------|-------------------|
| 1            | Demolition                                      | Demolition            | 1/1/2018   | 2/23/2018  | 5             | 40       |                   |
| 2            | Site Preparation                                | Site Preparation      | 2/24/2018  | 3/9/2018   | 5             | 10       |                   |
| 3            | Grading, Excavation, Shoring, and Trenching     | Grading               | 3/10/2018  | 6/29/2018  | 5             | 80       |                   |
| 4            | Building Construction                           | Building Construction | 6/30/2018  | 11/15/2019 | 5             | 360      |                   |
| 5            | Paving  | Paving                | 11/16/2019 | 1/10/2020  | 5             | 40       |                   |
| 6            | Architectural Coatings and General Construction | Architectural Coating | 1/11/2020  | 6/26/2020  | 5             | 120      |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 728,433; Residential Outdoor: 0; Non-Residential Indoor: 1,476,825; Non-Residential Outdoor: 0; Striped Parking Area: 43,704 (Architectural Coating – sqft)**

**OffRoad Equipment**

## 2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

| Phase Name                                      | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---|---------------------------|--------|-------------|-------------|-------------|
| Demolition                                      | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Demolition                                      | Excavators                | 3      | 8.00        | 158         | 0.38        |
| Demolition                                      | Rubber Tired Dozers       | 2      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Tractors/Loaders/Backhoes | 4      | 8.00        | 97          | 0.37        |
| Grading, Excavation, Shoring, and Trenching     | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Grading, Excavation, Shoring, and Trenching     | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Grading, Excavation, Shoring, and Trenching     | Excavators                | 1      | 8.00        | 158         | 0.38        |
| Grading, Excavation, Shoring, and Trenching     | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading, Excavation, Shoring, and Trenching     | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Grading, Excavation, Shoring, and Trenching     | Tractors/Loaders/Backhoes | 3      | 8.00        | 97          | 0.37        |
| Building Construction                           | Cranes                    | 1      | 7.00        | 231         | 0.29        |
| Building Construction                           | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction                           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Building Construction                           | Tractors/Loaders/Backhoes | 3      | 7.00        | 97          | 0.37        |
| Building Construction                           | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Paving  | Cement and Mortar Mixers  | 2      | 6.00        | 9           | 0.56        |
| Paving  | Pavers                    | 1      | 8.00        | 130         | 0.42        |
| Paving  | Paving Equipment          | 2      | 6.00        | 132         | 0.36        |
| Paving  | Rollers                   | 2      | 6.00        | 80          | 0.38        |
| Paving  | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Architectural Coatings and General Construction | Air Compressors           | 1      | 6.00        | 78          | 0.48        |
| Architectural Coatings and General Construction | Forklifts                 | 1      | 6.00        | 89          | 0.20        |

**Trips and VMT**

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| Phase Name                                      | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition                                      | 6                       | 15.00              | 0.00               | 9,816.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation                                | 7                       | 18.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading, Excavation, Shoring, and Trenching     | 8                       | 20.00              | 0.00               | 8,250.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction                           | 9                       | 907.00             | 96.00              | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving  | 8                       | 20.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coatings and General Construction | 2                       | 181.00             | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Demolition - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |               |               |               |                    | 1.0621        | 0.0000        | 1.0621        | 0.1608         | 0.0000        | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 0.0744        | 0.7665        | 0.4461        | 7.8000e-004        |               | 0.0388        | 0.0388        |                | 0.0361        | 0.0361        | 0.0000        | 70.2482        | 70.2482        | 0.0194        | 0.0000        | 70.7320        |
| <b>Total</b>  | <b>0.0744</b> | <b>0.7665</b> | <b>0.4461</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>0.0388</b> | <b>1.1009</b> | <b>0.1608</b>  | <b>0.0361</b> | <b>0.1969</b> | <b>0.0000</b> | <b>70.2482</b> | <b>70.2482</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7320</b> |

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**3.2 Demolition - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |                    |               |               |                    | 1.0621        | 0.0000             | 1.0621        | 0.1608         | 0.0000             | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 9.2500e-003        | 0.0401        | 0.4656        | 7.8000e-004        |               | 1.2300e-003        | 1.2300e-003   |                | 1.2300e-003        | 1.2300e-003   | 0.0000        | 70.2481        | 70.2481        | 0.0194        | 0.0000        | 70.7319        |
| <b>Total</b>  | <b>9.2500e-003</b> | <b>0.0401</b> | <b>0.4656</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>1.2300e-003</b> | <b>1.0634</b> | <b>0.1608</b>  | <b>1.2300e-003</b> | <b>0.1620</b> | <b>0.0000</b> | <b>70.2481</b> | <b>70.2481</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7319</b> |

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**3.2 Demolition - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**3.3 Site Preparation - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |               |               |               |                    | 0.0903        | 0.0000        | 0.0903        | 0.0497         | 0.0000        | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 0.0228        | 0.2410        | 0.1124        | 1.9000e-004        |               | 0.0129        | 0.0129        |                | 0.0119        | 0.0119        | 0.0000        | 17.3800        | 17.3800        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>0.0228</b> | <b>0.2410</b> | <b>0.1124</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>0.0129</b> | <b>0.1032</b> | <b>0.0497</b>  | <b>0.0119</b> | <b>0.0615</b> | <b>0.0000</b> | <b>17.3800</b> | <b>17.3800</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |



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**3.3 Site Preparation - 2018**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |                    |               |               |                    | 0.0903        | 0.0000             | 0.0903        | 0.0497         | 0.0000             | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 2.3300e-003        | 0.0101        | 0.1043        | 1.9000e-004        |               | 3.1000e-004        | 3.1000e-004   |                | 3.1000e-004        | 3.1000e-004   | 0.0000        | 17.3799        | 17.3799        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>2.3300e-003</b> | <b>0.0101</b> | <b>0.1043</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>3.1000e-004</b> | <b>0.0906</b> | <b>0.0497</b>  | <b>3.1000e-004</b> | <b>0.0500</b> | <b>0.0000</b> | <b>17.3799</b> | <b>17.3799</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000        | 0.2658        | 0.1353         | 0.0000        | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.1458        | 1.6676        | 0.8476        | 1.7900e-003        |               | 0.0786        | 0.0786        |                | 0.0723        | 0.0723        | 0.0000        | 163.7640        | 163.7640        | 0.0510        | 0.0000        | 165.0386        |
| <b>Total</b>  | <b>0.1458</b> | <b>1.6676</b> | <b>0.8476</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>0.0786</b> | <b>0.3444</b> | <b>0.1353</b>  | <b>0.0723</b> | <b>0.2076</b> | <b>0.0000</b> | <b>163.7640</b> | <b>163.7640</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0386</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000             | 0.2658        | 0.1353         | 0.0000             | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.0220        | 0.0955        | 0.9856        | 1.7900e-003        |               | 2.9400e-003        | 2.9400e-003   |                | 2.9400e-003        | 2.9400e-003   | 0.0000        | 163.7638        | 163.7638        | 0.0510        | 0.0000        | 165.0384        |
| <b>Total</b>  | <b>0.0220</b> | <b>0.0955</b> | <b>0.9856</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>2.9400e-003</b> | <b>0.2688</b> | <b>0.1353</b>  | <b>2.9400e-003</b> | <b>0.1382</b> | <b>0.0000</b> | <b>163.7638</b> | <b>163.7638</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0384</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**3.5 Building Construction - 2018**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.1755        | 1.5321        | 1.1515        | 1.7600e-003        |               | 0.0982        | 0.0982        |                | 0.0924        | 0.0924        | 0.0000        | 155.7375        | 155.7375        | 0.0382        | 0.0000        | 156.6914        |
| <b>Total</b> | <b>0.1755</b> | <b>1.5321</b> | <b>1.1515</b> | <b>1.7600e-003</b> |               | <b>0.0982</b> | <b>0.0982</b> |                | <b>0.0924</b> | <b>0.0924</b> | <b>0.0000</b> | <b>155.7375</b> | <b>155.7375</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6914</b> |

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**3.5 Building Construction - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003        | 0.0473        | 0.0120         | 5.7900e-003        | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.2490        | 0.1955        | 1.9506        | 4.9200e-003        | 0.4697        | 3.4300e-003        | 0.4732        | 0.1250         | 3.1600e-003        | 0.1281        | 0.0000        | 443.8637        | 443.8637        | 0.0139        | 0.0000        | 444.2117        |
| <b>Total</b> | <b>0.2802</b> | <b>1.0431</b> | <b>2.1442</b> | <b>6.6800e-003</b> | <b>0.5110</b> | <b>9.4800e-003</b> | <b>0.5205</b> | <b>0.1369</b>  | <b>8.9500e-003</b> | <b>0.1459</b> | <b>0.0000</b> | <b>612.5080</b> | <b>612.5080</b> | <b>0.0247</b> | <b>0.0000</b> | <b>613.1259</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0215        | 0.1464        | 1.1436        | 1.7600e-003        |               | 2.6700e-003        | 2.6700e-003        |                | 2.6700e-003        | 2.6700e-003        | 0.0000        | 155.7374        | 155.7374        | 0.0382        | 0.0000        | 156.6912        |
| <b>Total</b> | <b>0.0215</b> | <b>0.1464</b> | <b>1.1436</b> | <b>1.7600e-003</b> |               | <b>2.6700e-003</b> | <b>2.6700e-003</b> |                | <b>2.6700e-003</b> | <b>2.6700e-003</b> | <b>0.0000</b> | <b>155.7374</b> | <b>155.7374</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6912</b> |

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**3.5 Building Construction - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003        | 0.0473        | 0.0120         | 5.7900e-003        | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.2490        | 0.1955        | 1.9506        | 4.9200e-003        | 0.4697        | 3.4300e-003        | 0.4732        | 0.1250         | 3.1600e-003        | 0.1281        | 0.0000        | 443.8637        | 443.8637        | 0.0139        | 0.0000        | 444.2117        |
| <b>Total</b> | <b>0.2802</b> | <b>1.0431</b> | <b>2.1442</b> | <b>6.6800e-003</b> | <b>0.5110</b> | <b>9.4800e-003</b> | <b>0.5205</b> | <b>0.1369</b>  | <b>8.9500e-003</b> | <b>0.1459</b> | <b>0.0000</b> | <b>612.5080</b> | <b>612.5080</b> | <b>0.0247</b> | <b>0.0000</b> | <b>613.1259</b> |

**3.5 Building Construction - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.2704        | 2.4135        | 1.9653        | 3.0800e-003        |               | 0.1477        | 0.1477        |                | 0.1389        | 0.1389        | 0.0000        | 269.1943        | 269.1943        | 0.0656        | 0.0000        | 270.8338        |
| <b>Total</b> | <b>0.2704</b> | <b>2.4135</b> | <b>1.9653</b> | <b>3.0800e-003</b> |               | <b>0.1477</b> | <b>0.1477</b> |                | <b>0.1389</b> | <b>0.1389</b> | <b>0.0000</b> | <b>269.1943</b> | <b>269.1943</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8338</b> |

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**3.5 Building Construction - 2019**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.3931        | 0.2998        | 3.0287        | 8.3400e-003   | 0.8211        | 5.8500e-003   | 0.8270        | 0.2184         | 5.3900e-003   | 0.2238        | 0.0000        | 753.2265          | 753.2265          | 0.0215        | 0.0000        | 753.7635          |
| <b>Total</b> | <b>0.4426</b> | <b>1.7056</b> | <b>3.3397</b> | <b>0.0114</b> | <b>0.8933</b> | <b>0.0148</b> | <b>0.9081</b> | <b>0.2393</b>  | <b>0.0140</b> | <b>0.2533</b> | <b>0.0000</b> | <b>1,046.0259</b> | <b>1,046.0259</b> | <b>0.0395</b> | <b>0.0000</b> | <b>1,047.0139</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0375        | 0.2559        | 1.9992        | 3.0800e-003        |               | 4.6700e-003        | 4.6700e-003        |                | 4.6700e-003        | 4.6700e-003        | 0.0000        | 269.1940        | 269.1940        | 0.0656        | 0.0000        | 270.8334        |
| <b>Total</b> | <b>0.0375</b> | <b>0.2559</b> | <b>1.9992</b> | <b>3.0800e-003</b> |               | <b>4.6700e-003</b> | <b>4.6700e-003</b> |                | <b>4.6700e-003</b> | <b>4.6700e-003</b> | <b>0.0000</b> | <b>269.1940</b> | <b>269.1940</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8334</b> |

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**3.5 Building Construction - 2019**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.3931        | 0.2998        | 3.0287        | 8.3400e-003   | 0.8211        | 5.8500e-003   | 0.8270        | 0.2184         | 5.3900e-003   | 0.2238        | 0.0000        | 753.2265          | 753.2265          | 0.0215        | 0.0000        | 753.7635          |
| <b>Total</b> | <b>0.4426</b> | <b>1.7056</b> | <b>3.3397</b> | <b>0.0114</b> | <b>0.8933</b> | <b>0.0148</b> | <b>0.9081</b> | <b>0.2393</b>  | <b>0.0140</b> | <b>0.2533</b> | <b>0.0000</b> | <b>1,046.0259</b> | <b>1,046.0259</b> | <b>0.0395</b> | <b>0.0000</b> | <b>1,047.0139</b> |

**3.6 Paving - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0203        | 0.2042        | 0.1970        | 3.0000e-004        |               | 0.0115        | 0.0115        |                | 0.0106        | 0.0106        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>0.0203</b> | <b>0.2042</b> | <b>0.1970</b> | <b>3.0000e-004</b> |               | <b>0.0115</b> | <b>0.0115</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |



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**3.6 Paving - 2019**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Off-Road     | 3.5100e-003        | 0.0152        | 0.2165        | 3.0000e-004        |               | 4.7000e-004        | 4.7000e-004        |                | 4.7000e-004        | 4.7000e-004        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>3.5100e-003</b> | <b>0.0152</b> | <b>0.2165</b> | <b>3.0000e-004</b> |               | <b>4.7000e-004</b> | <b>4.7000e-004</b> |                | <b>4.7000e-004</b> | <b>4.7000e-004</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 4.7300e-003        | 0.0472        | 0.0491        | 8.0000e-005        |               | 2.6000e-003        | 2.6000e-003        |                | 2.4000e-003        | 2.4000e-003        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6003        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>4.7300e-003</b> | <b>0.0472</b> | <b>0.0491</b> | <b>8.0000e-005</b> |               | <b>2.6000e-003</b> | <b>2.6000e-003</b> |                | <b>2.4000e-003</b> | <b>2.4000e-003</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6003</b> |

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**3.6 Paving - 2020**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 8.8000e-004        | 3.8000e-003        | 0.0541        | 8.0000e-005        |               | 1.2000e-004        | 1.2000e-004        |                | 1.2000e-004        | 1.2000e-004        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6002        |
| Paving       | 0.0000             |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>8.8000e-004</b> | <b>3.8000e-003</b> | <b>0.0541</b> | <b>8.0000e-005</b> |               | <b>1.2000e-004</b> | <b>1.2000e-004</b> |                | <b>1.2000e-004</b> | <b>1.2000e-004</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6002</b> |

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**3.6 Paving - 2020**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 5.2626        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 0.0210        | 0.1594        | 0.1630        | 2.5000e-004        |               | 0.0110        | 0.0110        |                | 0.0107        | 0.0107        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4412        |
| <b>Total</b>    | <b>5.2836</b> | <b>0.1594</b> | <b>0.1630</b> | <b>2.5000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0107</b> | <b>0.0107</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4412</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Worker       | 0.0376        | 0.0277        | 0.2841        | 8.4000e-004        | 0.0859        | 6.0000e-004        | 0.0865        | 0.0228         | 5.5000e-004        | 0.0234        | 0.0000        | 76.3301        | 76.3301        | 1.9700e-003        | 0.0000        | 76.3794        |
| <b>Total</b> | <b>0.0376</b> | <b>0.0277</b> | <b>0.2841</b> | <b>8.4000e-004</b> | <b>0.0859</b> | <b>6.0000e-004</b> | <b>0.0865</b> | <b>0.0228</b>  | <b>5.5000e-004</b> | <b>0.0234</b> | <b>0.0000</b> | <b>76.3301</b> | <b>76.3301</b> | <b>1.9700e-003</b> | <b>0.0000</b> | <b>76.3794</b> |

**Mitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 5.2626        |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 2.6300e-003   | 0.0114        | 0.1622        | 2.5000e-004        |               | 3.5000e-004        | 3.5000e-004        |                | 3.5000e-004        | 3.5000e-004        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4411        |
| <b>Total</b>    | <b>5.2652</b> | <b>0.0114</b> | <b>0.1622</b> | <b>2.5000e-004</b> |               | <b>3.5000e-004</b> | <b>3.5000e-004</b> |                | <b>3.5000e-004</b> | <b>3.5000e-004</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4411</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Worker       | 0.0376        | 0.0277        | 0.2841        | 8.4000e-004        | 0.0859        | 6.0000e-004        | 0.0865        | 0.0228         | 5.5000e-004        | 0.0234        | 0.0000        | 76.3301        | 76.3301        | 1.9700e-003        | 0.0000        | 76.3794        |
| <b>Total</b> | <b>0.0376</b> | <b>0.0277</b> | <b>0.2841</b> | <b>8.4000e-004</b> | <b>0.0859</b> | <b>6.0000e-004</b> | <b>0.0865</b> | <b>0.0228</b>  | <b>5.5000e-004</b> | <b>0.0234</b> | <b>0.0000</b> | <b>76.3301</b> | <b>76.3301</b> | <b>1.9700e-003</b> | <b>0.0000</b> | <b>76.3794</b> |

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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|             | ROG     | NOx    | CO      | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------|---------|--------|---------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Category    | tons/yr |        |         |        |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Mitigated   | 1.5212  | 7.3034 | 13.6041 | 0.0384 | 2.7772        | 0.0376       | 2.8148     | 0.7428         | 0.0353        | 0.7781      | 0.0000   | 3,529.3854 | 3,529.3854 | 0.1914 | 0.0000 | 3,534.1691 |
| Unmitigated | 1.5212  | 7.3034 | 13.6041 | 0.0384 | 2.7772        | 0.0376       | 2.8148     | 0.7428         | 0.0353        | 0.7781      | 0.0000   | 3,529.3854 | 3,529.3854 | 0.1914 | 0.0000 | 3,534.1691 |

4.2 Trip Summary Information

| Land Use                       | Average Daily Trip Rate |                 |                 | Unmitigated      | Mitigated        |
|--------------------------------|-------------------------|-----------------|-----------------|------------------|------------------|
|                                | Weekday                 | Saturday        | Sunday          | Annual VMT       | Annual VMT       |
| Apartments High Rise           | 1,200.80                | 897.44          | 657.28          | 1,422,681        | 1,422,681        |
| Day-Care Center                | 0.00                    | 0.00            | 0.00            |                  |                  |
| Enclosed Parking with Elevator | 0.00                    | 0.00            | 0.00            |                  |                  |
| General Office Building        | 3,127.71                | 986.22          | 422.66          | 3,493,639        | 3,493,639        |
| Regional Shopping Center       | 2,790.72                | 1,936.64        | 978.52          | 2,578,825        | 2,578,825        |
| <b>Total</b>                   | <b>7,119.23</b>         | <b>3,820.30</b> | <b>2,058.46</b> | <b>7,495,145</b> | <b>7,495,145</b> |

4.3 Trip Type Information

| Land Use                       | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|--------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary        | Diverted | Pass-by |
| Apartments High Rise           | 7.30       | 2.00       | 2.80        | 31.00      | 15.00      | 54.00       | 86             | 11       | 3       |
| Day-Care Center                | 9.50       | 7.30       | 7.30        | 12.70      | 82.30      | 5.00        | 28             | 58       | 14      |
| Enclosed Parking with Elevator | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |
| General Office Building        | 8.40       | 2.20       | 5.20        | 33.00      | 48.00      | 19.00       | 77             | 19       | 4       |
| Regional Shopping Center       | 6.30       | 4.10       | 5.20        | 16.30      | 64.70      | 19.00       | 54             | 35       | 11      |

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**4.4 Fleet Mix**

| Land Use                       | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Office Building        | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Day-Care Center                | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Enclosed Parking with Elevator | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Apartments High Rise           | 0.601133 | 0.044097 | 0.205448 | 0.118954 | 0.018740 | 0.005630 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.005997 | 0.000000 | 0.000000 |
| Regional Shopping Center       | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

| Category                | ROG     | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
|                         | tons/yr |        |        |             |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Electricity Mitigated   |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 3,667.7151 | 3,667.7151 | 0.2491 | 0.0515 | 3,689.3005 |
| Electricity Unmitigated |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 3,667.7151 | 3,667.7151 | 0.2491 | 0.0515 | 3,689.3005 |
| NaturalGas Mitigated    | 0.1204  | 1.0811 | 0.8219 | 6.5700e-003 |               | 0.0832       | 0.0832     |                | 0.0832        | 0.0832      | 0.0000   | 1,191.4039 | 1,191.4039 | 0.0228 | 0.0218 | 1,198.4838 |
| NaturalGas Unmitigated  | 0.1204  | 1.0811 | 0.8219 | 6.5700e-003 |               | 0.0832       | 0.0832     |                | 0.0832        | 0.0832      | 0.0000   | 1,191.4039 | 1,191.4039 | 0.0228 | 0.0218 | 1,198.4838 |



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**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Apartments High Rise           | 4.51863e+006   | 0.0244        | 0.2082        | 0.0886        | 1.3300e-003        |               | 0.0168        | 0.0168        |                | 0.0168        | 0.0168        | 0.0000        | 241.1315          | 241.1315          | 4.6200e-003   | 4.4200e-003   | 242.5645          |
| Day-Care Center                | 314450         | 1.7000e-003   | 0.0154        | 0.0130        | 9.0000e-005        |               | 1.1700e-003   | 1.1700e-003   |                | 1.1700e-003   | 1.1700e-003   | 0.0000        | 16.7803           | 16.7803           | 3.2000e-004   | 3.1000e-004   | 16.8800           |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 1.71003e+007   | 0.0922        | 0.8383        | 0.7041        | 5.0300e-003        |               | 0.0637        | 0.0637        |                | 0.0637        | 0.0637        | 0.0000        | 912.5361          | 912.5361          | 0.0175        | 0.0167        | 917.9589          |
| Regional Shopping Center       | 392700         | 2.1200e-003   | 0.0193        | 0.0162        | 1.2000e-004        |               | 1.4600e-003   | 1.4600e-003   |                | 1.4600e-003   | 1.4600e-003   | 0.0000        | 20.9560           | 20.9560           | 4.0000e-004   | 3.8000e-004   | 21.0805           |
| <b>Total</b>                   |                | <b>0.1204</b> | <b>1.0811</b> | <b>0.8219</b> | <b>6.5700e-003</b> |               | <b>0.0832</b> | <b>0.0832</b> |                | <b>0.0832</b> | <b>0.0832</b> | <b>0.0000</b> | <b>1,191.4039</b> | <b>1,191.4039</b> | <b>0.0228</b> | <b>0.0218</b> | <b>1,198.4838</b> |

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**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Apartments High Rise           | 4.51863e+006   | 0.0244        | 0.2082        | 0.0886        | 1.3300e-003        |               | 0.0168        | 0.0168        |                | 0.0168        | 0.0168        | 0.0000        | 241.1315          | 241.1315          | 4.6200e-003   | 4.4200e-003   | 242.5645          |
| Day-Care Center                | 314450         | 1.7000e-003   | 0.0154        | 0.0130        | 9.0000e-005        |               | 1.1700e-003   | 1.1700e-003   |                | 1.1700e-003   | 1.1700e-003   | 0.0000        | 16.7803           | 16.7803           | 3.2000e-004   | 3.1000e-004   | 16.8800           |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 1.71003e+007   | 0.0922        | 0.8383        | 0.7041        | 5.0300e-003        |               | 0.0637        | 0.0637        |                | 0.0637        | 0.0637        | 0.0000        | 912.5361          | 912.5361          | 0.0175        | 0.0167        | 917.9589          |
| Regional Shopping Center       | 392700         | 2.1200e-003   | 0.0193        | 0.0162        | 1.2000e-004        |               | 1.4600e-003   | 1.4600e-003   |                | 1.4600e-003   | 1.4600e-003   | 0.0000        | 20.9560           | 20.9560           | 4.0000e-004   | 3.8000e-004   | 21.0805           |
| <b>Total</b>                   |                | <b>0.1204</b> | <b>1.0811</b> | <b>0.8219</b> | <b>6.5700e-003</b> |               | <b>0.0832</b> | <b>0.0832</b> |                | <b>0.0832</b> | <b>0.0832</b> | <b>0.0000</b> | <b>1,191.4039</b> | <b>1,191.4039</b> | <b>0.0228</b> | <b>0.0218</b> | <b>1,198.4838</b> |

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**5.3 Energy by Land Use - Electricity****Unmitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Apartments High Rise           | 1.78595e+006    | 345.9097          | 0.0235        | 4.8600e-003   | 347.9454          |
| Day-Care Center                | 86260           | 16.7072           | 1.1300e-003   | 2.3000e-004   | 16.8055           |
| Enclosed Parking with Elevator | 4.90942e+006    | 950.8750          | 0.0646        | 0.0134        | 956.4712          |
| General Office Building        | 1.12446e+007    | 2,177.9030        | 0.1479        | 0.0306        | 2,190.7205        |
| Regional Shopping Center       | 910350          | 176.3202          | 0.0120        | 2.4800e-003   | 177.3579          |
| <b>Total</b>                   |                 | <b>3,667.7151</b> | <b>0.2491</b> | <b>0.0515</b> | <b>3,689.3005</b> |

2100 Telegraph Avenue Project: Preferred Development Scenario - Alameda County, Annual

**5.3 Energy by Land Use - Electricity**

**Mitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Apartments High Rise           | 1.78595e+006    | 345.9097          | 0.0235        | 4.8600e-003   | 347.9454          |
| Day-Care Center                | 86260           | 16.7072           | 1.1300e-003   | 2.3000e-004   | 16.8055           |
| Enclosed Parking with Elevator | 4.90942e+006    | 950.8750          | 0.0646        | 0.0134        | 956.4712          |
| General Office Building        | 1.12446e+007    | 2,177.9030        | 0.1479        | 0.0306        | 2,190.7205        |
| Regional Shopping Center       | 910350          | 176.3202          | 0.0120        | 2.4800e-003   | 177.3579          |
| <b>Total</b>                   |                 | <b>3,667.7151</b> | <b>0.2491</b> | <b>0.0515</b> | <b>3,689.3005</b> |

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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|             | ROG     | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4         | N2O    | CO2e   |
|-------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category    | tons/yr |        |        |             |               |              |            |                |               |             | MT/yr    |           |           |             |        |        |
| Mitigated   | 5.1549  | 0.0343 | 2.9686 | 1.6000e-004 |               | 0.0163       | 0.0163     |                | 0.0163        | 0.0163      | 0.0000   | 4.8410    | 4.8410    | 4.8100e-003 | 0.0000 | 4.9612 |
| Unmitigated | 5.1549  | 0.0343 | 2.9686 | 1.6000e-004 |               | 0.0163       | 0.0163     |                | 0.0163        | 0.0163      | 0.0000   | 4.8410    | 4.8410    | 4.8100e-003 | 0.0000 | 4.9612 |

6.2 Area by SubCategory

Unmitigated

|                       | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.5263        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 4.5366        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Hearth                | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 0.0921        | 0.0343        | 2.9686        | 1.6000e-004        |               | 0.0163        | 0.0163        |                | 0.0163        | 0.0163        | 0.0000        | 4.8410        | 4.8410        | 4.8100e-003        | 0.0000        | 4.9612        |
| <b>Total</b>          | <b>5.1549</b> | <b>0.0343</b> | <b>2.9686</b> | <b>1.6000e-004</b> |               | <b>0.0163</b> | <b>0.0163</b> |                | <b>0.0163</b> | <b>0.0163</b> | <b>0.0000</b> | <b>4.8410</b> | <b>4.8410</b> | <b>4.8100e-003</b> | <b>0.0000</b> | <b>4.9612</b> |

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**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.5263        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 4.5366        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Hearth                | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 0.0921        | 0.0343        | 2.9686        | 1.6000e-004        |               | 0.0163        | 0.0163        |                | 0.0163        | 0.0163        | 0.0000        | 4.8410        | 4.8410        | 4.8100e-003        | 0.0000        | 4.9612        |
| <b>Total</b>          | <b>5.1549</b> | <b>0.0343</b> | <b>2.9686</b> | <b>1.6000e-004</b> |               | <b>0.0163</b> | <b>0.0163</b> |                | <b>0.0163</b> | <b>0.0163</b> | <b>0.0000</b> | <b>4.8410</b> | <b>4.8410</b> | <b>4.8100e-003</b> | <b>0.0000</b> | <b>4.9612</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

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|             | Total CO2 | CH4    | N2O    | CO2e     |
|-------------|-----------|--------|--------|----------|
| Category    | MT/yr     |        |        |          |
| Mitigated   | 277.6216  | 0.1997 | 0.1197 | 318.2834 |
| Unmitigated | 327.0121  | 0.2482 | 0.1493 | 377.7215 |

**7.2 Water by Land Use**

**Unmitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Apartments High Rise           | 25.7358 / 16.2248  | 44.5636         | 0.0338        | 0.0203        | 51.4565         |
| Day-Care Center                | 0.814902 / 2.09546 | 2.4833          | 1.1400e-003   | 6.6000e-004   | 2.7079          |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 156.503 / 95.9215  | 269.1377        | 0.2051        | 0.1234        | 311.0438        |
| Regional Shopping Center       | 6.29616 / 3.85894  | 10.8275         | 8.2500e-003   | 4.9700e-003   | 12.5134         |
| <b>Total</b>                   |                    | <b>327.0121</b> | <b>0.2482</b> | <b>0.1494</b> | <b>377.7215</b> |

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**7.2 Water by Land Use****Mitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Apartments High Rise           | 20.5887 / 16.2248  | 37.8506         | 0.0272        | 0.0163        | 43.3779         |
| Day-Care Center                | 0.651921 / 2.09546 | 2.2707          | 9.3000e-004   | 5.3000e-004   | 2.4521          |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 125.203 / 95.9215  | 228.3151        | 0.1650        | 0.0989        | 261.9165        |
| Regional Shopping Center       | 5.03693 / 3.85894  | 9.1852          | 6.6400e-003   | 3.9800e-003   | 10.5370         |
| <b>Total</b>                   |                    | <b>277.6216</b> | <b>0.1997</b> | <b>0.1197</b> | <b>318.2834</b> |

**8.0 Waste Detail****8.1 Mitigation Measures Waste**



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**Category/Year**

|             | Total CO2 | CH4     | N2O    | CO2e     |
|-------------|-----------|---------|--------|----------|
|             | MT/yr     |         |        |          |
| Mitigated   | 226.2456  | 13.3707 | 0.0000 | 560.5139 |
| Unmitigated | 226.2456  | 13.3707 | 0.0000 | 560.5139 |

**8.2 Waste by Land Use**

**Unmitigated**

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Apartments High Rise           | 181.7          | 36.8835         | 2.1798         | 0.0000        | 91.3772         |
| Day-Care Center                | 24.7           | 5.0139          | 0.2963         | 0.0000        | 12.4217         |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| General Office Building        | 818.91         | 166.2313        | 9.8240         | 0.0000        | 411.8311        |
| Regional Shopping Center       | 89.25          | 18.1169         | 1.0707         | 0.0000        | 44.8840         |
| <b>Total</b>                   |                | <b>226.2456</b> | <b>13.3707</b> | <b>0.0000</b> | <b>560.5139</b> |

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**8.2 Waste by Land Use**

Mitigated

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Apartments High Rise           | 181.7          | 36.8835         | 2.1798         | 0.0000        | 91.3772         |
| Day-Care Center                | 24.7           | 5.0139          | 0.2963         | 0.0000        | 12.4217         |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| General Office Building        | 818.91         | 166.2313        | 9.8240         | 0.0000        | 411.8311        |
| Regional Shopping Center       | 89.25          | 18.1169         | 1.0707         | 0.0000        | 44.8840         |
| <b>Total</b>                   |                | <b>226.2456</b> | <b>13.3707</b> | <b>0.0000</b> | <b>560.5139</b> |

**9.0 Operational Offroad**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

| Equipment Type      | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---------------------|--------|-----------|------------|-------------|-------------|-----------|
| Emergency Generator | 1      | 1         | 50         | 671         | 0.73        | Diesel    |
| Emergency Generator | 1      | 1         | 50         | 2012        | 0.73        | Diesel    |

Boilers

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| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

**User Defined Equipment**

| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

**10.1 Stationary Sources**

**Unmitigated/Mitigated**

|  | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Equipment Type                               | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Emergency Generator - Diesel (600 - 750 HP)  | 0.0275        | 0.0769        | 0.0702        | 1.3000e-004        |               | 4.0500e-003   | 4.0500e-003   |                | 4.0500e-003   | 4.0500e-003   | 0.0000        | 12.7758        | 12.7758        | 1.7900e-003        | 0.0000        | 12.8205        |
| Emergency Generator - Diesel (750 - 9999 HP) | 0.0826        | 0.3691        | 0.2105        | 4.0000e-004        |               | 0.0121        | 0.0121        |                | 0.0121        | 0.0121        | 0.0000        | 38.3082        | 38.3082        | 5.3700e-003        | 0.0000        | 38.4425        |
| <b>Total</b>                                 | <b>0.1101</b> | <b>0.4461</b> | <b>0.2807</b> | <b>5.3000e-004</b> |               | <b>0.0162</b> | <b>0.0162</b> |                | <b>0.0162</b> | <b>0.0162</b> | <b>0.0000</b> | <b>51.0840</b> | <b>51.0840</b> | <b>7.1600e-003</b> | <b>0.0000</b> | <b>51.2630</b> |

**11.0 Vegetation**

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2100 Telegraph Avenue Project: Maximum Residential Scenario - Alameda County, Annual

**2100 Telegraph Avenue Project: Maximum Residential Scenario  
Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                      | Size     | Metric        | Lot Acreage | Floor Surface Area | Population |
|--------------------------------|----------|---------------|-------------|--------------------|------------|
| Day-Care Center                | 37.00    | 1000sqft      | 0.00        | 37,000.00          | 0          |
| Enclosed Parking with Elevator | 2,130.00 | Space         | 0.00        | 852,000.00         | 0          |
| Apartments High Rise           | 1,556.00 | Dwelling Unit | 3.14        | 1,652,385.00       | 3268       |
| Regional Shopping Center       | 99.22    | 1000sqft      | 0.00        | 99,220.00          | 249        |

**1.2 Other Project Characteristics**

|                                 |                                |                                 |       |                                  |       |
|---------------------------------|--------------------------------|---------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>             | Urban                          | <b>Wind Speed (m/s)</b>         | 2.2   | <b>Precipitation Freq (Days)</b> | 63    |
| <b>Climate Zone</b>             | 5                              |                                 |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>          | Pacific Gas & Electric Company |                                 |       |                                  |       |
| <b>CO2 Intensity (lb/MW hr)</b> | 427                            | <b>CH4 Intensity (lb/MW hr)</b> | 0.029 | <b>N2O Intensity (lb/MW hr)</b>  | 0.006 |

**1.3 User Entered Comments & Non-Default Data**

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Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Land Use - Square footage updated based on project design. Population estimates based on 2.1 persons/residential unit, 3 persons/KSF office, 2.5 persons/KSF retail.

Construction Phase - According to project sponsor, construction expected to last up to 30 months.

Off-road Equipment - Added forklift for general construction activities.

Off-road Equipment - Added crane and drill rig for shoring and piles.

Trips and VMT - Conservatively assuming 1 vendor truck every 5 minutes (96 vendor trucks/8-hour day)

Demolition - Asphalt demo assumption: (Area of pavement)(Depth of pavement)(Density asphalt) = (33 KSF)(0.25 ft)(0.0725 tons/ft<sup>3</sup>) = 598 tons

Building demo assumption: (Area of buildings)(CalEEMod conversion factor) = (214.5 KSF)(0.046 tons/ft<sup>2</sup>) = 98,670 tons

Grading - Project sponsor anticipates up to 66,000 CY of material export.

Architectural Coating - No exterior paint in the project design.

Vehicle Trips - Trip rates adjusted based on Fehr & Peers (2016) traffic analysis and SCA-TRANS-4 . Average travel distances adjusted based on MTC Travel Model results for project vicinity (TAZ 970).

Woodstoves - No fireplaces or woodstoves.

Consumer Products - ROG emission factor for consumer products reduced by 14.6% based on CARB's 2012 Statewide inventory.

Area Coating - No exterior paint included in the project design.

Energy Use - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD would service the proposed project and applies 100 percent aerobic process and 100 percent cogeneration.

Construction Off-road Equipment Mitigation - SCA-AIR-1 (#19) Enhanced Controls require use of Tier 4 engines. These emission reductions are considered part of the project's unmitigated emissions.

Water Mitigation - CALGreen Code mandatory requirement. These emission reductions are considered part of the project's unmitigated emissions.

Fleet Mix - Project is not expected to generate new bus or mobile home trips, and home-based trips would not include medium heavy-duty or heavy heavy-duty trucks.

Stationary Sources - Emergency Generators and Fire Pumps - Emergency generator for elevator. Limited to 50 hours of testing/maintenance per year. Assume maximum 1 hour operation/test day.

| Table Name              | Column Name                       | Default Value | New Value |
|-------------------------|-----------------------------------|---------------|-----------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 68,110.00     | 0.00      |
| tblArchitecturalCoating | ConstArea_Residential_Exterior    | 1,115,360.00  | 0.00      |
| tblAreaCoating          | Area_Nonresidential_Exterior      | 68110         | 0         |



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|                         |                   |             |              |
|-------------------------|-------------------|-------------|--------------|
| tblConstEquipMitigation | Tier              | No Change   | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change   | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change   | Tier 4 Final |
| tblConstEquipMitigation | Tier              | No Change   | Tier 4 Final |
| tblConstructionPhase    | NumDays           | 18.00       | 120.00       |
| tblConstructionPhase    | NumDays           | 230.00      | 360.00       |
| tblConstructionPhase    | NumDays           | 20.00       | 40.00        |
| tblConstructionPhase    | NumDays           | 8.00        | 80.00        |
| tblConstructionPhase    | NumDays           | 18.00       | 40.00        |
| tblConstructionPhase    | NumDays           | 5.00        | 10.00        |
| tblConsumerProducts     | ROG_EF            | 2.14E-05    | 1.83E-05     |
| tblFireplaces           | NumberGas         | 233.40      | 0.00         |
| tblFireplaces           | NumberNoFireplace | 62.24       | 0.00         |
| tblFireplaces           | NumberWood        | 264.52      | 0.00         |
| tblFleetMix             | HHD               | 0.04        | 0.00         |
| tblFleetMix             | HHD               | 0.04        | 0.04         |
| tblFleetMix             | LDA               | 0.56        | 0.60         |
| tblFleetMix             | LDA               | 0.56        | 0.56         |
| tblFleetMix             | LDT1              | 0.04        | 0.04         |
| tblFleetMix             | LDT1              | 0.04        | 0.04         |
| tblFleetMix             | LDT2              | 0.19        | 0.21         |
| tblFleetMix             | LDT2              | 0.19        | 0.19         |
| tblFleetMix             | LHD1              | 0.02        | 0.02         |
| tblFleetMix             | LHD1              | 0.02        | 0.02         |
| tblFleetMix             | LHD2              | 5.2280e-003 | 5.6300e-003  |
| tblFleetMix             | LHD2              | 5.2280e-003 | 5.2600e-003  |
| tblFleetMix             | MCY               | 5.5690e-003 | 5.9970e-003  |

## 2100 Telegraph Avenue Project: Maximum Residential Scenario - Alameda County, Annual

|                                 |                         |              |              |
|---------------------------------|-------------------------|--------------|--------------|
| tblFleetMix                     | MCY                     | 5.5690e-003  | 5.6030e-003  |
| tblFleetMix                     | MDV                     | 0.11         | 0.12         |
| tblFleetMix                     | MDV                     | 0.11         | 0.11         |
| tblFleetMix                     | MH                      | 7.5900e-004  | 0.00         |
| tblFleetMix                     | MH                      | 7.5900e-004  | 0.00         |
| tblFleetMix                     | MHD                     | 0.02         | 0.00         |
| tblFleetMix                     | MHD                     | 0.02         | 0.02         |
| tblFleetMix                     | OBUS                    | 2.1180e-003  | 0.00         |
| tblFleetMix                     | OBUS                    | 2.1180e-003  | 0.00         |
| tblFleetMix                     | SBUS                    | 3.0800e-004  | 0.00         |
| tblFleetMix                     | SBUS                    | 3.0800e-004  | 0.00         |
| tblFleetMix                     | UBUS                    | 2.8050e-003  | 0.00         |
| tblFleetMix                     | UBUS                    | 2.8050e-003  | 0.00         |
| tblGrading                      | MaterialExported        | 0.00         | 66,000.00    |
| tblLandUse                      | BuildingSpaceSquareFeet | 1,556,000.00 | 1,652,385.00 |
| tblLandUse                      | LandUseSquareFeet       | 1,556,000.00 | 1,652,385.00 |
| tblLandUse                      | LotAcreage              | 0.85         | 0.00         |
| tblLandUse                      | LotAcreage              | 19.17        | 0.00         |
| tblLandUse                      | LotAcreage              | 25.10        | 3.14         |
| tblLandUse                      | LotAcreage              | 2.28         | 0.00         |
| tblLandUse                      | Population              | 4,450.00     | 3,268.00     |
| tblLandUse                      | Population              | 0.00         | 249.00       |
| tblProjectCharacteristics       | CO2IntensityFactor      | 641.35       | 427          |
| tblProjectCharacteristics       | OperationalYear         | 2018         | 2020         |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue         | 0.00         | 2,012.00     |
| tblStationaryGeneratorsPumpsUse | HoursPerDay             | 0.00         | 1.00         |
| tblStationaryGeneratorsPumpsUse | HoursPerYear            | 0.00         | 50.00        |



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|                                 |                                    |        |        |
|---------------------------------|------------------------------------|--------|--------|
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment                  | 0.00   | 1.00   |
| tblTripsAndVMT                  | VendorTripNumber                   | 328.00 | 96.00  |
| tblVehicleTrips                 | CC_TL                              | 7.30   | 4.10   |
| tblVehicleTrips                 | CNW_TL                             | 7.30   | 5.20   |
| tblVehicleTrips                 | CW_TL                              | 9.50   | 6.30   |
| tblVehicleTrips                 | HO_TL                              | 5.70   | 2.80   |
| tblVehicleTrips                 | HS_TL                              | 4.80   | 2.00   |
| tblVehicleTrips                 | HW_TL                              | 10.80  | 7.30   |
| tblVehicleTrips                 | ST_TR                              | 4.98   | 2.27   |
| tblVehicleTrips                 | ST_TR                              | 6.21   | 0.00   |
| tblVehicleTrips                 | ST_TR                              | 49.97  | 22.78  |
| tblVehicleTrips                 | SU_TR                              | 3.65   | 1.66   |
| tblVehicleTrips                 | SU_TR                              | 5.83   | 0.00   |
| tblVehicleTrips                 | SU_TR                              | 25.24  | 11.50  |
| tblVehicleTrips                 | WD_TR                              | 4.20   | 3.03   |
| tblVehicleTrips                 | WD_TR                              | 74.06  | 0.00   |
| tblVehicleTrips                 | WD_TR                              | 42.70  | 31.07  |
| tblWater                        | AerobicPercent                     | 87.46  | 100.00 |
| tblWater                        | AerobicPercent                     | 87.46  | 100.00 |
| tblWater                        | AerobicPercent                     | 87.46  | 100.00 |
| tblWater                        | AerobicPercent                     | 87.46  | 100.00 |
| tblWater                        | AnaDigestCogenCombDigestGasPercent | 0.00   | 100.00 |
| tblWater                        | AnaDigestCogenCombDigestGasPercent | 0.00   | 100.00 |
| tblWater                        | AnaDigestCogenCombDigestGasPercent | 0.00   | 100.00 |
| tblWater                        | AnaDigestCogenCombDigestGasPercent | 0.00   | 100.00 |
| tblWater                        | AnaDigestCombDigestGasPercent      | 100.00 | 0.00   |
| tblWater                        | AnaDigestCombDigestGasPercent      | 100.00 | 0.00   |

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|               |                                       |        |      |
|---------------|---------------------------------------|--------|------|
| tblWater      | AnaDigestCombDigestGasPercent         | 100.00 | 0.00 |
| tblWater      | AnaDigestCombDigestGasPercent         | 100.00 | 0.00 |
| tblWater      | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00 |
| tblWater      | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00 |
| tblWater      | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00 |
| tblWater      | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00 |
| tblWater      | SepticTankPercent                     | 10.33  | 0.00 |
| tblWater      | SepticTankPercent                     | 10.33  | 0.00 |
| tblWater      | SepticTankPercent                     | 10.33  | 0.00 |
| tblWater      | SepticTankPercent                     | 10.33  | 0.00 |
| tblWoodstoves | NumberCatalytic                       | 31.12  | 0.00 |
| tblWoodstoves | NumberNoncatalytic                    | 31.12  | 0.00 |

## 2.0 Emissions Summary

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2100 Telegraph Avenue Project: Maximum Residential Scenario - Alameda County, Annual

**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.9594        | 8.3395        | 6.5589        | 0.0220        | 2.4117        | 0.2515        | 2.6633        | 0.6124         | 0.2345        | 0.8468        | 0.0000        | 2,036.9347        | 2,036.9347        | 0.1856        | 0.0000        | 2,041.5745        |
| 2019           | 1.0023        | 4.5285        | 7.5749        | 0.0205        | 1.4553        | 0.1780        | 1.6334        | 0.3888         | 0.1672        | 0.5560        | 0.0000        | 1,857.5206        | 1,857.5206        | 0.1280        | 0.0000        | 1,860.7214        |
| 2020           | 8.4951        | 0.2535        | 0.6930        | 1.7500e-003   | 0.1453        | 0.0146        | 0.1599        | 0.0387         | 0.0140        | 0.0527        | 0.0000        | 157.0963          | 157.0963          | 8.5300e-003   | 0.0000        | 157.3096          |
| <b>Maximum</b> | <b>8.4951</b> | <b>8.3395</b> | <b>7.5749</b> | <b>0.0220</b> | <b>2.4117</b> | <b>0.2515</b> | <b>2.6633</b> | <b>0.6124</b>  | <b>0.2345</b> | <b>0.8468</b> | <b>0.0000</b> | <b>2,036.9347</b> | <b>2,036.9347</b> | <b>0.1856</b> | <b>0.0000</b> | <b>2,041.5745</b> |

**Mitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.5959        | 4.4244        | 6.7004        | 0.0220        | 2.4117        | 0.0302        | 2.4419        | 0.6124         | 0.0290        | 0.6414        | 0.0000        | 2,036.9342        | 2,036.9342        | 0.1856        | 0.0000        | 2,041.5741        |
| 2019           | 0.7527        | 2.1819        | 7.6284        | 0.0205        | 1.4553        | 0.0240        | 1.4793        | 0.3888         | 0.0228        | 0.4116        | 0.0000        | 1,857.5202        | 1,857.5202        | 0.1280        | 0.0000        | 1,860.7211        |
| 2020           | 8.4729        | 0.0621        | 0.6972        | 1.7500e-003   | 0.1453        | 1.4800e-003   | 0.1468        | 0.0387         | 1.4000e-003   | 0.0401        | 0.0000        | 157.0962          | 157.0962          | 8.5300e-003   | 0.0000        | 157.3096          |
| <b>Maximum</b> | <b>8.4729</b> | <b>4.4244</b> | <b>7.6284</b> | <b>0.0220</b> | <b>2.4117</b> | <b>0.0302</b> | <b>2.4419</b> | <b>0.6124</b>  | <b>0.0290</b> | <b>0.6414</b> | <b>0.0000</b> | <b>2,036.9342</b> | <b>2,036.9342</b> | <b>0.1856</b> | <b>0.0000</b> | <b>2,041.5741</b> |

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|                   | ROG  | NOx   | CO    | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 6.08 | 49.18 | -1.34 | 0.00 | 0.00          | 87.48        | 8.72       | 0.00           | 87.20         | 24.90       | 0.00     | 0.00     | 0.00      | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date   | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|--|--|
| 1       | 1-1-2018   | 3-31-2018  | 3.3074                                       | 1.9597                                     |
| 2       | 4-1-2018   | 6-30-2018  | 2.5725                                       | 1.2013                                     |
| 3       | 7-1-2018   | 9-30-2018  | 1.6585                                       | 0.8861                                     |
| 4       | 10-1-2018  | 12-31-2018 | 1.7104                                       | 0.9380                                     |
| 5       | 1-1-2019   | 3-31-2019  | 1.5221                                       | 0.8510                                     |
| 6       | 4-1-2019   | 6-30-2019  | 1.4941                                       | 0.8156                                     |
| 7       | 7-1-2019   | 9-30-2019  | 1.5105                                       | 0.8245                                     |
| 8       | 10-1-2019  | 12-31-2019 | 1.0108                                       | 0.4566                                     |
| 9       | 1-1-2020   | 3-31-2020  | 4.2450                                       | 4.1226                                     |
| 10      | 4-1-2020   | 6-30-2020  | 4.5024                                       | 4.4163                                     |
|         |            | Highest    | 4.5024                                       | 4.4163                                     |

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**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx           | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2              | Total CO2              | CH4            | N2O           | CO2e                   |
|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|------------------------|------------------------|----------------|---------------|------------------------|
| Category     | tons/yr       |               |                |               |               |               |               |                |               |               | MT/yr           |                        |                        |                |               |                        |
| Area         | 7.2241        | 0.1343        | 11.6128        | 6.1000e-004   |               | 0.0638        | 0.0638        |                | 0.0638        | 0.0638        | 0.0000          | 18.9129                | 18.9129                | 0.0185         | 0.0000        | 19.3757                |
| Energy       | 0.1018        | 0.8727        | 0.3931         | 5.5500e-003   |               | 0.0703        | 0.0703        |                | 0.0703        | 0.0703        | 0.0000          | 3,720.214<br>2         | 3,720.214<br>2         | 0.2036         | 0.0566        | 3,742.166<br>2         |
| Mobile       | 1.7194        | 4.8165        | 15.3778        | 0.0381        | 3.1187        | 0.0343        | 3.1531        | 0.8320         | 0.0320        | 0.8640        | 0.0000          | 3,468.044<br>1         | 3,468.044<br>1         | 0.1648         | 0.0000        | 3,472.163<br>5         |
| Stationary   | 0.0826        | 0.3691        | 0.2105         | 4.0000e-004   |               | 0.0121        | 0.0121        |                | 0.0121        | 0.0121        | 0.0000          | 38.3082                | 38.3082                | 5.3700e-003    | 0.0000        | 38.4425                |
| Waste        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 176.2043        | 0.0000                 | 176.2043               | 10.4134        | 0.0000        | 436.5386               |
| Water        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 39.0300         | 153.9914               | 193.0214               | 0.1448         | 0.0870        | 222.5796               |
| <b>Total</b> | <b>9.1278</b> | <b>6.1926</b> | <b>27.5942</b> | <b>0.0446</b> | <b>3.1187</b> | <b>0.1806</b> | <b>3.2993</b> | <b>0.8320</b>  | <b>0.1783</b> | <b>1.0103</b> | <b>215.2343</b> | <b>7,399.470<br/>8</b> | <b>7,614.705<br/>0</b> | <b>10.9504</b> | <b>0.1436</b> | <b>7,931.266<br/>0</b> |

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**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx           | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2         | Total CO2         | CH4            | N2O           | CO2e              |
|--------------|---------------|---------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|-------------------|-------------------|----------------|---------------|-------------------|
| Category     | tons/yr       |               |                |               |               |               |               |                |               |               | MT/yr           |                   |                   |                |               |                   |
| Area         | 7.2241        | 0.1343        | 11.6128        | 6.1000e-004   |               | 0.0638        | 0.0638        |                | 0.0638        | 0.0638        | 0.0000          | 18.9129           | 18.9129           | 0.0185         | 0.0000        | 19.3757           |
| Energy       | 0.1018        | 0.8727        | 0.3931         | 5.5500e-003   |               | 0.0703        | 0.0703        |                | 0.0703        | 0.0703        | 0.0000          | 3,720.2142        | 3,720.2142        | 0.2036         | 0.0566        | 3,742.1662        |
| Mobile       | 1.7194        | 4.8165        | 15.3778        | 0.0381        | 3.1187        | 0.0343        | 3.1531        | 0.8320         | 0.0320        | 0.8640        | 0.0000          | 3,468.0441        | 3,468.0441        | 0.1648         | 0.0000        | 3,472.1635        |
| Stationary   | 0.0826        | 0.3691        | 0.2105         | 4.0000e-004   |               | 0.0121        | 0.0121        |                | 0.0121        | 0.0121        | 0.0000          | 38.3082           | 38.3082           | 5.3700e-003    | 0.0000        | 38.4425           |
| Waste        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 176.2043        | 0.0000            | 176.2043          | 10.4134        | 0.0000        | 436.5386          |
| Water        |               |               |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 31.2240         | 133.0224          | 164.2464          | 0.1165         | 0.0698        | 187.9508          |
| <b>Total</b> | <b>9.1278</b> | <b>6.1926</b> | <b>27.5942</b> | <b>0.0446</b> | <b>3.1187</b> | <b>0.1806</b> | <b>3.2993</b> | <b>0.8320</b>  | <b>0.1783</b> | <b>1.0103</b> | <b>207.4283</b> | <b>7,378.5017</b> | <b>7,585.9300</b> | <b>10.9221</b> | <b>0.1264</b> | <b>7,896.6372</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio-CO2    | Total CO2   | CH4         | N2O          | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>3.63</b> | <b>0.28</b> | <b>0.38</b> | <b>0.26</b> | <b>12.02</b> | <b>0.44</b> |

**3.0 Construction Detail**

**Construction Phase**

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| Phase Number | Phase Name                                      | Phase Type            | Start Date | End Date   | Num Days Week | Num Days | Phase Description |
|--------------|---|-----------------------|------------|------------|---------------|----------|-------------------|
| 1            | Demolition                                      | Demolition            | 1/1/2018   | 2/23/2018  | 5             | 40       |                   |
| 2            | Site Preparation                                | Site Preparation      | 2/24/2018  | 3/9/2018   | 5             | 10       |                   |
| 3            | Grading, Excavation, Shoring, and Trenching     | Grading               | 3/10/2018  | 6/29/2018  | 5             | 80       |                   |
| 4            | Building Construction                           | Building Construction | 6/30/2018  | 11/15/2019 | 5             | 360      |                   |
| 5            | Paving  | Paving                | 11/16/2019 | 1/10/2020  | 5             | 40       |                   |
| 6            | Architectural Coatings and General Construction | Architectural Coating | 1/11/2020  | 6/26/2020  | 5             | 120      |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 3,346,080; Residential Outdoor: 0; Non-Residential Indoor: 204,330; Non-Residential Outdoor: 0; Striped Parking Area: 51,120 (Architectural Coating – sqft)**

**OffRoad Equipment**

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| Phase Name                                      | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---|---------------------------|--------|-------------|-------------|-------------|
| Demolition                                      | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Demolition                                      | Excavators                | 3      | 8.00        | 158         | 0.38        |
| Demolition                                      | Rubber Tired Dozers       | 2      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Tractors/Loaders/Backhoes | 4      | 8.00        | 97          | 0.37        |
| Grading, Excavation, Shoring, and Trenching     | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Grading, Excavation, Shoring, and Trenching     | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Grading, Excavation, Shoring, and Trenching     | Excavators                | 1      | 8.00        | 158         | 0.38        |
| Grading, Excavation, Shoring, and Trenching     | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading, Excavation, Shoring, and Trenching     | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Grading, Excavation, Shoring, and Trenching     | Tractors/Loaders/Backhoes | 3      | 8.00        | 97          | 0.37        |
| Building Construction                           | Cranes                    | 1      | 7.00        | 231         | 0.29        |
| Building Construction                           | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction                           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Building Construction                           | Tractors/Loaders/Backhoes | 3      | 7.00        | 97          | 0.37        |
| Building Construction                           | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Paving  | Cement and Mortar Mixers  | 2      | 6.00        | 9           | 0.56        |
| Paving  | Pavers                    | 1      | 8.00        | 130         | 0.42        |
| Paving  | Paving Equipment          | 2      | 6.00        | 132         | 0.36        |
| Paving  | Rollers                   | 2      | 6.00        | 80          | 0.38        |
| Paving  | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Architectural Coatings and General Construction | Air Compressors           | 1      | 6.00        | 78          | 0.48        |
| Architectural Coatings and General Construction | Forklifts                 | 1      | 6.00        | 89          | 0.20        |

**Trips and VMT**



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| Phase Name                                      | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition                                      | 6                       | 15.00              | 0.00               | 9,816.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation                                | 7                       | 18.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading, Excavation, Shoring, and Trenching     | 8                       | 20.00              | 0.00               | 8,250.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction                           | 9                       | 1,525.00           | 96.00              | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving  | 8                       | 20.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coatings and General Construction | 2                       | 305.00             | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Demolition - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |               |               |               |                    | 1.0621        | 0.0000        | 1.0621        | 0.1608         | 0.0000        | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 0.0744        | 0.7665        | 0.4461        | 7.8000e-004        |               | 0.0388        | 0.0388        |                | 0.0361        | 0.0361        | 0.0000        | 70.2482        | 70.2482        | 0.0194        | 0.0000        | 70.7320        |
| <b>Total</b>  | <b>0.0744</b> | <b>0.7665</b> | <b>0.4461</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>0.0388</b> | <b>1.1009</b> | <b>0.1608</b>  | <b>0.0361</b> | <b>0.1969</b> | <b>0.0000</b> | <b>70.2482</b> | <b>70.2482</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7320</b> |

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**3.2 Demolition - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |                    |               |               |                    | 1.0621        | 0.0000             | 1.0621        | 0.1608         | 0.0000             | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 9.2500e-003        | 0.0401        | 0.4656        | 7.8000e-004        |               | 1.2300e-003        | 1.2300e-003   |                | 1.2300e-003        | 1.2300e-003   | 0.0000        | 70.2481        | 70.2481        | 0.0194        | 0.0000        | 70.7319        |
| <b>Total</b>  | <b>9.2500e-003</b> | <b>0.0401</b> | <b>0.4656</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>1.2300e-003</b> | <b>1.0634</b> | <b>0.1608</b>  | <b>1.2300e-003</b> | <b>0.1620</b> | <b>0.0000</b> | <b>70.2481</b> | <b>70.2481</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7319</b> |

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**3.2 Demolition - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**3.3 Site Preparation - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |               |               |               |                    | 0.0903        | 0.0000        | 0.0903        | 0.0497         | 0.0000        | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 0.0228        | 0.2410        | 0.1124        | 1.9000e-004        |               | 0.0129        | 0.0129        |                | 0.0119        | 0.0119        | 0.0000        | 17.3800        | 17.3800        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>0.0228</b> | <b>0.2410</b> | <b>0.1124</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>0.0129</b> | <b>0.1032</b> | <b>0.0497</b>  | <b>0.0119</b> | <b>0.0615</b> | <b>0.0000</b> | <b>17.3800</b> | <b>17.3800</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |                    |               |               |                    | 0.0903        | 0.0000             | 0.0903        | 0.0497         | 0.0000             | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 2.3300e-003        | 0.0101        | 0.1043        | 1.9000e-004        |               | 3.1000e-004        | 3.1000e-004   |                | 3.1000e-004        | 3.1000e-004   | 0.0000        | 17.3799        | 17.3799        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>2.3300e-003</b> | <b>0.0101</b> | <b>0.1043</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>3.1000e-004</b> | <b>0.0906</b> | <b>0.0497</b>  | <b>3.1000e-004</b> | <b>0.0500</b> | <b>0.0000</b> | <b>17.3799</b> | <b>17.3799</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000        | 0.2658        | 0.1353         | 0.0000        | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.1458        | 1.6676        | 0.8476        | 1.7900e-003        |               | 0.0786        | 0.0786        |                | 0.0723        | 0.0723        | 0.0000        | 163.7640        | 163.7640        | 0.0510        | 0.0000        | 165.0386        |
| <b>Total</b>  | <b>0.1458</b> | <b>1.6676</b> | <b>0.8476</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>0.0786</b> | <b>0.3444</b> | <b>0.1353</b>  | <b>0.0723</b> | <b>0.2076</b> | <b>0.0000</b> | <b>163.7640</b> | <b>163.7640</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0386</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000             | 0.2658        | 0.1353         | 0.0000             | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.0220        | 0.0955        | 0.9856        | 1.7900e-003        |               | 2.9400e-003        | 2.9400e-003   |                | 2.9400e-003        | 2.9400e-003   | 0.0000        | 163.7638        | 163.7638        | 0.0510        | 0.0000        | 165.0384        |
| <b>Total</b>  | <b>0.0220</b> | <b>0.0955</b> | <b>0.9856</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>2.9400e-003</b> | <b>0.2688</b> | <b>0.1353</b>  | <b>2.9400e-003</b> | <b>0.1382</b> | <b>0.0000</b> | <b>163.7638</b> | <b>163.7638</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0384</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**3.5 Building Construction - 2018**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.1755        | 1.5321        | 1.1515        | 1.7600e-003        |               | 0.0982        | 0.0982        |                | 0.0924        | 0.0924        | 0.0000        | 155.7375        | 155.7375        | 0.0382        | 0.0000        | 156.6914        |
| <b>Total</b> | <b>0.1755</b> | <b>1.5321</b> | <b>1.1515</b> | <b>1.7600e-003</b> |               | <b>0.0982</b> | <b>0.0982</b> |                | <b>0.0924</b> | <b>0.0924</b> | <b>0.0000</b> | <b>155.7375</b> | <b>155.7375</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6914</b> |

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**3.5 Building Construction - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003   | 0.0413        | 6.0500e-003   | 0.0473        | 0.0120         | 5.7900e-003   | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.4186        | 0.3286        | 3.2797        | 8.2700e-003   | 0.7898        | 5.7600e-003   | 0.7955        | 0.2101         | 5.3200e-003   | 0.2154        | 0.0000        | 746.2978        | 746.2978        | 0.0234        | 0.0000        | 746.8829        |
| <b>Total</b> | <b>0.4499</b> | <b>1.1762</b> | <b>3.4733</b> | <b>0.0100</b> | <b>0.8311</b> | <b>0.0118</b> | <b>0.8429</b> | <b>0.2221</b>  | <b>0.0111</b> | <b>0.2331</b> | <b>0.0000</b> | <b>914.9421</b> | <b>914.9421</b> | <b>0.0342</b> | <b>0.0000</b> | <b>915.7971</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0215        | 0.1464        | 1.1436        | 1.7600e-003        |               | 2.6700e-003        | 2.6700e-003        |                | 2.6700e-003        | 2.6700e-003        | 0.0000        | 155.7374        | 155.7374        | 0.0382        | 0.0000        | 156.6912        |
| <b>Total</b> | <b>0.0215</b> | <b>0.1464</b> | <b>1.1436</b> | <b>1.7600e-003</b> |               | <b>2.6700e-003</b> | <b>2.6700e-003</b> |                | <b>2.6700e-003</b> | <b>2.6700e-003</b> | <b>0.0000</b> | <b>155.7374</b> | <b>155.7374</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6912</b> |



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**3.5 Building Construction - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003   | 0.0413        | 6.0500e-003   | 0.0473        | 0.0120         | 5.7900e-003   | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.4186        | 0.3286        | 3.2797        | 8.2700e-003   | 0.7898        | 5.7600e-003   | 0.7955        | 0.2101         | 5.3200e-003   | 0.2154        | 0.0000        | 746.2978        | 746.2978        | 0.0234        | 0.0000        | 746.8829        |
| <b>Total</b> | <b>0.4499</b> | <b>1.1762</b> | <b>3.4733</b> | <b>0.0100</b> | <b>0.8311</b> | <b>0.0118</b> | <b>0.8429</b> | <b>0.2221</b>  | <b>0.0111</b> | <b>0.2331</b> | <b>0.0000</b> | <b>914.9421</b> | <b>914.9421</b> | <b>0.0342</b> | <b>0.0000</b> | <b>915.7971</b> |

**3.5 Building Construction - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.2704        | 2.4135        | 1.9653        | 3.0800e-003        |               | 0.1477        | 0.1477        |                | 0.1389        | 0.1389        | 0.0000        | 269.1943        | 269.1943        | 0.0656        | 0.0000        | 270.8338        |
| <b>Total</b> | <b>0.2704</b> | <b>2.4135</b> | <b>1.9653</b> | <b>3.0800e-003</b> |               | <b>0.1477</b> | <b>0.1477</b> |                | <b>0.1389</b> | <b>0.1389</b> | <b>0.0000</b> | <b>269.1943</b> | <b>269.1943</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8338</b> |

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**3.5 Building Construction - 2019**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.6609        | 0.5042        | 5.0924        | 0.0140        | 1.3806        | 9.8400e-003   | 1.3904        | 0.3673         | 9.0700e-003   | 0.3763        | 0.0000        | 1,266.4503        | 1,266.4503        | 0.0361        | 0.0000        | 1,267.3532        |
| <b>Total</b> | <b>0.7105</b> | <b>1.9099</b> | <b>5.4034</b> | <b>0.0171</b> | <b>1.4528</b> | <b>0.0188</b> | <b>1.4716</b> | <b>0.3882</b>  | <b>0.0177</b> | <b>0.4058</b> | <b>0.0000</b> | <b>1,559.2497</b> | <b>1,559.2497</b> | <b>0.0542</b> | <b>0.0000</b> | <b>1,560.6036</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0375        | 0.2559        | 1.9992        | 3.0800e-003        |               | 4.6700e-003        | 4.6700e-003        |                | 4.6700e-003        | 4.6700e-003        | 0.0000        | 269.1940        | 269.1940        | 0.0656        | 0.0000        | 270.8334        |
| <b>Total</b> | <b>0.0375</b> | <b>0.2559</b> | <b>1.9992</b> | <b>3.0800e-003</b> |               | <b>4.6700e-003</b> | <b>4.6700e-003</b> |                | <b>4.6700e-003</b> | <b>4.6700e-003</b> | <b>0.0000</b> | <b>269.1940</b> | <b>269.1940</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8334</b> |

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**3.5 Building Construction - 2019**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.6609        | 0.5042        | 5.0924        | 0.0140        | 1.3806        | 9.8400e-003   | 1.3904        | 0.3673         | 9.0700e-003   | 0.3763        | 0.0000        | 1,266.4503        | 1,266.4503        | 0.0361        | 0.0000        | 1,267.3532        |
| <b>Total</b> | <b>0.7105</b> | <b>1.9099</b> | <b>5.4034</b> | <b>0.0171</b> | <b>1.4528</b> | <b>0.0188</b> | <b>1.4716</b> | <b>0.3882</b>  | <b>0.0177</b> | <b>0.4058</b> | <b>0.0000</b> | <b>1,559.2497</b> | <b>1,559.2497</b> | <b>0.0542</b> | <b>0.0000</b> | <b>1,560.6036</b> |

**3.6 Paving - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0203        | 0.2042        | 0.1970        | 3.0000e-004        |               | 0.0115        | 0.0115        |                | 0.0106        | 0.0106        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>0.0203</b> | <b>0.2042</b> | <b>0.1970</b> | <b>3.0000e-004</b> |               | <b>0.0115</b> | <b>0.0115</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Off-Road     | 3.5100e-003        | 0.0152        | 0.2165        | 3.0000e-004        |               | 4.7000e-004        | 4.7000e-004        |                | 4.7000e-004        | 4.7000e-004        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>3.5100e-003</b> | <b>0.0152</b> | <b>0.2165</b> | <b>3.0000e-004</b> |               | <b>4.7000e-004</b> | <b>4.7000e-004</b> |                | <b>4.7000e-004</b> | <b>4.7000e-004</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 4.7300e-003        | 0.0472        | 0.0491        | 8.0000e-005        |               | 2.6000e-003        | 2.6000e-003        |                | 2.4000e-003        | 2.4000e-003        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6003        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>4.7300e-003</b> | <b>0.0472</b> | <b>0.0491</b> | <b>8.0000e-005</b> |               | <b>2.6000e-003</b> | <b>2.6000e-003</b> |                | <b>2.4000e-003</b> | <b>2.4000e-003</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6003</b> |

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**3.6 Paving - 2020**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 8.8000e-004        | 3.8000e-003        | 0.0541        | 8.0000e-005        |               | 1.2000e-004        | 1.2000e-004        |                | 1.2000e-004        | 1.2000e-004        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6002        |
| Paving       | 0.0000             |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>8.8000e-004</b> | <b>3.8000e-003</b> | <b>0.0541</b> | <b>8.0000e-005</b> |               | <b>1.2000e-004</b> | <b>1.2000e-004</b> |                | <b>1.2000e-004</b> | <b>1.2000e-004</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6002</b> |

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**3.6 Paving - 2020**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 8.4058        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 0.0210        | 0.1594        | 0.1630        | 2.5000e-004        |               | 0.0110        | 0.0110        |                | 0.0107        | 0.0107        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4412        |
| <b>Total</b>    | <b>8.4268</b> | <b>0.1594</b> | <b>0.1630</b> | <b>2.5000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0107</b> | <b>0.0107</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4412</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |                    |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0633        | 0.0467        | 0.4788        | 1.4200e-003        | 0.1447        | 1.0000e-003        | 0.1457        | 0.0385         | 9.3000e-004        | 0.0394        | 0.0000        | 128.6225        | 128.6225        | 3.3200e-003        | 0.0000        | 128.7056        |
| <b>Total</b> | <b>0.0633</b> | <b>0.0467</b> | <b>0.4788</b> | <b>1.4200e-003</b> | <b>0.1447</b> | <b>1.0000e-003</b> | <b>0.1457</b> | <b>0.0385</b>  | <b>9.3000e-004</b> | <b>0.0394</b> | <b>0.0000</b> | <b>128.6225</b> | <b>128.6225</b> | <b>3.3200e-003</b> | <b>0.0000</b> | <b>128.7056</b> |

**Mitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 8.4058        |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 2.6300e-003   | 0.0114        | 0.1622        | 2.5000e-004        |               | 3.5000e-004        | 3.5000e-004        |                | 3.5000e-004        | 3.5000e-004        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4411        |
| <b>Total</b>    | <b>8.4084</b> | <b>0.0114</b> | <b>0.1622</b> | <b>2.5000e-004</b> |               | <b>3.5000e-004</b> | <b>3.5000e-004</b> |                | <b>3.5000e-004</b> | <b>3.5000e-004</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4411</b> |



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**3.7 Architectural Coatings and General Construction - 2020**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |                    |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0633        | 0.0467        | 0.4788        | 1.4200e-003        | 0.1447        | 1.0000e-003        | 0.1457        | 0.0385         | 9.3000e-004        | 0.0394        | 0.0000        | 128.6225        | 128.6225        | 3.3200e-003        | 0.0000        | 128.7056        |
| <b>Total</b> | <b>0.0633</b> | <b>0.0467</b> | <b>0.4788</b> | <b>1.4200e-003</b> | <b>0.1447</b> | <b>1.0000e-003</b> | <b>0.1457</b> | <b>0.0385</b>  | <b>9.3000e-004</b> | <b>0.0394</b> | <b>0.0000</b> | <b>128.6225</b> | <b>128.6225</b> | <b>3.3200e-003</b> | <b>0.0000</b> | <b>128.7056</b> |

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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|             | ROG     | NOx    | CO      | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2      | Total CO2      | CH4    | N2O    | CO2e           |
|-------------|---------|--------|---------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------------|----------------|--------|--------|----------------|
| Category    | tons/yr |        |         |        |               |              |            |                |               |             | MT/yr    |                |                |        |        |                |
| Mitigated   | 1.7194  | 4.8165 | 15.3778 | 0.0381 | 3.1187        | 0.0343       | 3.1531     | 0.8320         | 0.0320        | 0.8640      | 0.0000   | 3,468.044<br>1 | 3,468.044<br>1 | 0.1648 | 0.0000 | 3,472.163<br>5 |
| Unmitigated | 1.7194  | 4.8165 | 15.3778 | 0.0381 | 3.1187        | 0.0343       | 3.1531     | 0.8320         | 0.0320        | 0.8640      | 0.0000   | 3,468.044<br>1 | 3,468.044<br>1 | 0.1648 | 0.0000 | 3,472.163<br>5 |

4.2 Trip Summary Information

| Land Use                       | Average Daily Trip Rate |                 |                 | Unmitigated      | Mitigated        |
|--------------------------------|-------------------------|-----------------|-----------------|------------------|------------------|
|                                | Weekday                 | Saturday        | Sunday          | Annual VMT       | Annual VMT       |
| Apartments High Rise           | 4,717.79                | 3,535.23        | 2589.18         | 5,592,570        | 5,592,570        |
| Day-Care Center                | 0.00                    | 0.00            | 0.00            |                  |                  |
| Enclosed Parking with Elevator | 0.00                    | 0.00            | 0.00            |                  |                  |
| Regional Shopping Center       | 3,082.96                | 2,260.63        | 1140.63         | 2,876,523        | 2,876,523        |
| <b>Total</b>                   | <b>7,800.76</b>         | <b>5,795.86</b> | <b>3,729.82</b> | <b>8,469,093</b> | <b>8,469,093</b> |

4.3 Trip Type Information

| Land Use                       | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|--------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary        | Diverted | Pass-by |
| Apartments High Rise           | 7.30       | 2.00       | 2.80        | 31.00      | 15.00      | 54.00       | 86             | 11       | 3       |
| Day-Care Center                | 9.50       | 7.30       | 7.30        | 12.70      | 82.30      | 5.00        | 28             | 58       | 14      |
| Enclosed Parking with Elevator | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |
| Regional Shopping Center       | 6.30       | 4.10       | 5.20        | 16.30      | 64.70      | 19.00       | 54             | 35       | 11      |

4.4 Fleet Mix

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| Land Use                       | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Day-Care Center                | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Enclosed Parking with Elevator | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Apartments High Rise           | 0.601133 | 0.044097 | 0.205448 | 0.118954 | 0.018740 | 0.005630 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.005997 | 0.000000 | 0.000000 |
| Regional Shopping Center       | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

| Category                | ROG     | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
|                         | tons/yr |        |        |             |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Electricity Mitigated   |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 2,713.2000 | 2,713.2000 | 0.1843 | 0.0381 | 2,729.1679 |
| Electricity Unmitigated |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 2,713.2000 | 2,713.2000 | 0.1843 | 0.0381 | 2,729.1679 |
| NaturalGas Mitigated    | 0.1018  | 0.8727 | 0.3931 | 5.5500e-003 |               | 0.0703       | 0.0703     |                | 0.0703        | 0.0703      | 0.0000   | 1,007.0142 | 1,007.0142 | 0.0193 | 0.0185 | 1,012.9984 |
| NaturalGas Unmitigated  | 0.1018  | 0.8727 | 0.3931 | 5.5500e-003 |               | 0.0703       | 0.0703     |                | 0.0703        | 0.0703      | 0.0000   | 1,007.0142 | 1,007.0142 | 0.0193 | 0.0185 | 1,012.9984 |

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**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Apartments High Rise           | 1.78e+007      | 0.0960        | 0.8202        | 0.3490        | 5.2400e-003        |               | 0.0663        | 0.0663        |                | 0.0663        | 0.0663        | 0.0000        | 949.8751          | 949.8751          | 0.0182        | 0.0174        | 955.5197          |
| Day-Care Center                | 612350         | 3.3000e-003   | 0.0300        | 0.0252        | 1.8000e-004        |               | 2.2800e-003   | 2.2800e-003   |                | 2.2800e-003   | 2.2800e-003   | 0.0000        | 32.6773           | 32.6773           | 6.3000e-004   | 6.0000e-004   | 32.8715           |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Regional Shopping Center       | 458396         | 2.4700e-003   | 0.0225        | 0.0189        | 1.3000e-004        |               | 1.7100e-003   | 1.7100e-003   |                | 1.7100e-003   | 1.7100e-003   | 0.0000        | 24.4618           | 24.4618           | 4.7000e-004   | 4.5000e-004   | 24.6071           |
| <b>Total</b>                   |                | <b>0.1018</b> | <b>0.8727</b> | <b>0.3931</b> | <b>5.5500e-003</b> |               | <b>0.0703</b> | <b>0.0703</b> |                | <b>0.0703</b> | <b>0.0703</b> | <b>0.0000</b> | <b>1,007.0142</b> | <b>1,007.0142</b> | <b>0.0193</b> | <b>0.0185</b> | <b>1,012.9984</b> |

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**5.2 Energy by Land Use - NaturalGas**

**Mitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Apartments High Rise           | 1.78e+007      | 0.0960        | 0.8202        | 0.3490        | 5.2400e-003        |               | 0.0663        | 0.0663        |                | 0.0663        | 0.0663        | 0.0000        | 949.8751          | 949.8751          | 0.0182        | 0.0174        | 955.5197          |
| Day-Care Center                | 612350         | 3.3000e-003   | 0.0300        | 0.0252        | 1.8000e-004        |               | 2.2800e-003   | 2.2800e-003   |                | 2.2800e-003   | 2.2800e-003   | 0.0000        | 32.6773           | 32.6773           | 6.3000e-004   | 6.0000e-004   | 32.8715           |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Regional Shopping Center       | 458396         | 2.4700e-003   | 0.0225        | 0.0189        | 1.3000e-004        |               | 1.7100e-003   | 1.7100e-003   |                | 1.7100e-003   | 1.7100e-003   | 0.0000        | 24.4618           | 24.4618           | 4.7000e-004   | 4.5000e-004   | 24.6071           |
| <b>Total</b>                   |                | <b>0.1018</b> | <b>0.8727</b> | <b>0.3931</b> | <b>5.5500e-003</b> |               | <b>0.0703</b> | <b>0.0703</b> |                | <b>0.0703</b> | <b>0.0703</b> | <b>0.0000</b> | <b>1,007.0142</b> | <b>1,007.0142</b> | <b>0.0193</b> | <b>0.0185</b> | <b>1,012.9984</b> |

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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Apartments High Rise           | 7.03528e+006    | 1,362.6213        | 0.0925        | 0.0192        | 1,370.6407        |
| Day-Care Center                | 167980          | 32.5350           | 2.2100e-003   | 4.6000e-004   | 32.7265           |
| Enclosed Parking with Elevator | 5.74248e+006    | 1,112.2262        | 0.0755        | 0.0156        | 1,118.7719        |
| Regional Shopping Center       | 1.06265e+006    | 205.8175          | 0.0140        | 2.8900e-003   | 207.0288          |
| <b>Total</b>                   |                 | <b>2,713.2000</b> | <b>0.1843</b> | <b>0.0381</b> | <b>2,729.1679</b> |

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**5.3 Energy by Land Use - Electricity**

**Mitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Apartments High Rise           | 7.03528e+006    | 1,362.6213        | 0.0925        | 0.0192        | 1,370.6407        |
| Day-Care Center                | 167980          | 32.5350           | 2.2100e-003   | 4.6000e-004   | 32.7265           |
| Enclosed Parking with Elevator | 5.74248e+006    | 1,112.2262        | 0.0755        | 0.0156        | 1,118.7719        |
| Regional Shopping Center       | 1.06265e+006    | 205.8175          | 0.0140        | 2.8900e-003   | 207.0288          |
| <b>Total</b>                   |                 | <b>2,713.2000</b> | <b>0.1843</b> | <b>0.0381</b> | <b>2,729.1679</b> |

**6.0 Area Detail**

**6.1 Mitigation Measures Area**

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|             | ROG     | NOx    | CO      | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4    | N2O    | CO2e    |
|-------------|---------|--------|---------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|-----------|-----------|--------|--------|---------|
| Category    | tons/yr |        |         |             |               |              |            |                |               |             | MT/yr    |           |           |        |        |         |
| Mitigated   | 7.2241  | 0.1343 | 11.6128 | 6.1000e-004 |               | 0.0638       | 0.0638     |                | 0.0638        | 0.0638      | 0.0000   | 18.9129   | 18.9129   | 0.0185 | 0.0000 | 19.3757 |
| Unmitigated | 7.2241  | 0.1343 | 11.6128 | 6.1000e-004 |               | 0.0638       | 0.0638     |                | 0.0638        | 0.0638      | 0.0000   | 18.9129   | 18.9129   | 0.0185 | 0.0000 | 19.3757 |

6.2 Area by SubCategory

Unmitigated

|                       | ROG           | NOx           | CO             | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|-----------------------|---------------|---------------|----------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| SubCategory           | tons/yr       |               |                |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Architectural Coating | 0.8406        |               |                |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Consumer Products     | 6.0286        |               |                |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Hearth                | 0.0000        | 0.0000        | 0.0000         | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Landscaping           | 0.3550        | 0.1343        | 11.6128        | 6.1000e-004        |               | 0.0638        | 0.0638        |                | 0.0638        | 0.0638        | 0.0000        | 18.9129        | 18.9129        | 0.0185        | 0.0000        | 19.3757        |
| <b>Total</b>          | <b>7.2241</b> | <b>0.1343</b> | <b>11.6128</b> | <b>6.1000e-004</b> |               | <b>0.0638</b> | <b>0.0638</b> |                | <b>0.0638</b> | <b>0.0638</b> | <b>0.0000</b> | <b>18.9129</b> | <b>18.9129</b> | <b>0.0185</b> | <b>0.0000</b> | <b>19.3757</b> |



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**6.2 Area by SubCategory**

Mitigated

|                       | ROG           | NOx           | CO             | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|-----------------------|---------------|---------------|----------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| SubCategory           | tons/yr       |               |                |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Architectural Coating | 0.8406        |               |                |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Consumer Products     | 6.0286        |               |                |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Hearth                | 0.0000        | 0.0000        | 0.0000         | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Landscaping           | 0.3550        | 0.1343        | 11.6128        | 6.1000e-004        |               | 0.0638        | 0.0638        |                | 0.0638        | 0.0638        | 0.0000        | 18.9129        | 18.9129        | 0.0185        | 0.0000        | 19.3757        |
| <b>Total</b>          | <b>7.2241</b> | <b>0.1343</b> | <b>11.6128</b> | <b>6.1000e-004</b> |               | <b>0.0638</b> | <b>0.0638</b> |                | <b>0.0638</b> | <b>0.0638</b> | <b>0.0000</b> | <b>18.9129</b> | <b>18.9129</b> | <b>0.0185</b> | <b>0.0000</b> | <b>19.3757</b> |

**7.0 Water Detail**

**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

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|             | Total CO2 | CH4    | N2O    | CO2e     |
|-------------|-----------|--------|--------|----------|
| Category    | MT/yr     |        |        |          |
| Mitigated   | 164.2464  | 0.1165 | 0.0698 | 187.9508 |
| Unmitigated | 193.0214  | 0.1448 | 0.0870 | 222.5796 |

**7.2 Water by Land Use**

**Unmitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Apartments High Rise           | 101.38 / 63.9133   | 175.5466        | 0.1329        | 0.0800        | 202.6996        |
| Day-Care Center                | 1.58691 / 4.08064  | 4.8359          | 2.2200e-003   | 1.2800e-003   | 5.2732          |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Regional Shopping Center       | 7.34948 / 4.50452  | 12.6388         | 9.6300e-003   | 5.8000e-003   | 14.6068         |
| <b>Total</b>                   |                    | <b>193.0214</b> | <b>0.1448</b> | <b>0.0870</b> | <b>222.5796</b> |

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**7.2 Water by Land Use**

**Mitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Apartments High Rise           | 81.1037 / 63.9133  | 149.1026        | 0.1069        | 0.0641        | 170.8760        |
| Day-Care Center                | 1.26953 / 4.08064  | 4.4220          | 1.8200e-003   | 1.0300e-003   | 4.7751          |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Regional Shopping Center       | 5.87958 / 4.50452  | 10.7218         | 7.7500e-003   | 4.6500e-003   | 12.2997         |
| <b>Total</b>                   |                    | <b>164.2464</b> | <b>0.1165</b> | <b>0.0698</b> | <b>187.9508</b> |

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**Category/Year**

|             | Total CO2 | CH4     | N2O    | CO2e     |
|-------------|-----------|---------|--------|----------|
|             | MT/yr     |         |        |          |
| Mitigated   | 176.2043  | 10.4134 | 0.0000 | 436.5386 |
| Unmitigated | 176.2043  | 10.4134 | 0.0000 | 436.5386 |

**8.2 Waste by Land Use**

**Unmitigated**

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Apartments High Rise           | 715.76         | 145.2928        | 8.5866         | 0.0000        | 359.9568        |
| Day-Care Center                | 48.1           | 9.7639          | 0.5770         | 0.0000        | 24.1896         |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| Regional Shopping Center       | 104.18         | 21.1476         | 1.2498         | 0.0000        | 52.3923         |
| <b>Total</b>                   |                | <b>176.2043</b> | <b>10.4134</b> | <b>0.0000</b> | <b>436.5386</b> |

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**8.2 Waste by Land Use**

Mitigated

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Apartments High Rise           | 715.76         | 145.2928        | 8.5866         | 0.0000        | 359.9568        |
| Day-Care Center                | 48.1           | 9.7639          | 0.5770         | 0.0000        | 24.1896         |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| Regional Shopping Center       | 104.18         | 21.1476         | 1.2498         | 0.0000        | 52.3923         |
| <b>Total</b>                   |                | <b>176.2043</b> | <b>10.4134</b> | <b>0.0000</b> | <b>436.5386</b> |

**9.0 Operational Offroad**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

| Equipment Type      | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---------------------|--------|-----------|------------|-------------|-------------|-----------|
| Emergency Generator | 1      | 1         | 50         | 2012        | 0.73        | Diesel    |

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

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| Equipment Type | Number |
|----------------|--------|
|----------------|--------|

**10.1 Stationary Sources**

Unmitigated/Mitigated

|  | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Equipment Type                               | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Emergency Generator - Diesel (750 - 9999 HP) | 0.0826        | 0.3691        | 0.2105        | 4.0000e-004        |               | 0.0121        | 0.0121        |                | 0.0121        | 0.0121        | 0.0000        | 38.3082        | 38.3082        | 5.3700e-003        | 0.0000        | 38.4425        |
| <b>Total</b>                                 | <b>0.0826</b> | <b>0.3691</b> | <b>0.2105</b> | <b>4.0000e-004</b> |               | <b>0.0121</b> | <b>0.0121</b> |                | <b>0.0121</b> | <b>0.0121</b> | <b>0.0000</b> | <b>38.3082</b> | <b>38.3082</b> | <b>5.3700e-003</b> | <b>0.0000</b> | <b>38.4425</b> |

**11.0 Vegetation**

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**2100 Telegraph Avenue Project: Maximum Office Scenario  
Alameda County, Annual**

**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                      | Size     | Metric   | Lot Acreage | Floor Surface Area | Population |
|--------------------------------|----------|----------|-------------|--------------------|------------|
| General Office Building        | 2,689.00 | 1000sqft | 3.14        | 2,689,000.00       | 8067       |
| Enclosed Parking with Elevator | 3,238.00 | Space    | 0.00        | 1,295,200.00       | 0          |
| Regional Shopping Center       | 87.00    | 1000sqft | 0.00        | 87,000.00          | 218        |

**1.2 Other Project Characteristics**

|                                |                                |                                |       |                                  |       |
|--------------------------------|--------------------------------|--------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>            | Urban                          | <b>Wind Speed (m/s)</b>        | 2.2   | <b>Precipitation Freq (Days)</b> | 63    |
| <b>Climate Zone</b>            | 5                              |                                |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>         | Pacific Gas & Electric Company |                                |       |                                  |       |
| <b>CO2 Intensity (lb/MWhr)</b> | 427                            | <b>CH4 Intensity (lb/MWhr)</b> | 0.029 | <b>N2O Intensity (lb/MWhr)</b>   | 0.006 |

**1.3 User Entered Comments & Non-Default Data**

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Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Land Use - Square footage updated based on project design. Population estimates based on 2.1 persons/residential unit, 3 persons/KSF office, 2.5 persons/KSF retail.

Construction Phase - According to project sponsor, construction expected to last up to 30 months.

Off-road Equipment - Added forklift for general construction activities.

Off-road Equipment - Added crane and drill rig for shoring and piles.

Trips and VMT - Conservatively assuming 1 vendor truck every 5 minutes (96 vendor trucks/8-hour day)

Demolition - Asphalt demo assumption: (Area of pavement)(Depth of pavement)(Density asphalt) = (33 KSF)(0.25 ft)(0.0725 tons/ft<sup>3</sup>) = 598 tons

Building demo assumption: (Area of buildings)(CalEEMod conversion factor) = (214.5 KSF)(0.046 tons/ft<sup>2</sup>) = 98,670 tons

Grading - Project sponsor anticipates up to 66,000 CY of material export.

Architectural Coating - No exterior paint in the project design.

Vehicle Trips - Trip rates adjusted based on Fehr & Peers (2016) traffic analysis and SCA-TRANS-4 . Average travel distances adjusted based on MTC Travel Model results for project vicinity (TAZ 970).

Consumer Products - ROG emission factor for consumer products reduced by 14.6% based on CARB's 2012 Statewide inventory.

Area Coating - No exterior paint included in the project design.

Energy Use - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD would service the proposed project and applies 100 percent aerobic process and 100 percent cogeneration.

Construction Off-road Equipment Mitigation - SCA-AIR-1 (#19) Enhanced Controls require use of Tier 4 engines. These emission reductions are considered part of the project's unmitigated emissions.

Water Mitigation - CALGreen Code mandatory requirement. These emission reductions are considered part of the project's unmitigated emissions.

Fleet Mix - Project is not expected to generate new bus or mobile home trips.

Stationary Sources - Emergency Generators and Fire Pumps - Emergency generator for elevator. Limited to 50 hours of testing/maintenance per year. Assume maximum 1 hour operation/test day. Maximum Office Scenario = 3,353 HP (2,500kW)

| Table Name              | Column Name                       | Default Value | New Value |
|-------------------------|-----------------------------------|---------------|-----------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 1,388,000.00  | 0.00      |
| tblAreaCoating          | Area_Nonresidential_Exterior      | 1388000       | 0         |
| tblConstEquipMitigation | NumberOfEquipmentMitigated        | 0.00          | 1.00      |
| tblConstEquipMitigation | NumberOfEquipmentMitigated        | 0.00          | 1.00      |





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| tblConstEquipMitigation | Tier    | No Change   | Tier 4 Final |
|-------------------------|---------|-------------|--------------|
| tblConstructionPhase    | NumDays | 18.00       | 120.00       |
| tblConstructionPhase    | NumDays | 230.00      | 360.00       |
| tblConstructionPhase    | NumDays | 20.00       | 40.00        |
| tblConstructionPhase    | NumDays | 8.00        | 80.00        |
| tblConstructionPhase    | NumDays | 18.00       | 40.00        |
| tblConstructionPhase    | NumDays | 5.00        | 10.00        |
| tblConsumerProducts     | ROG_EF  | 2.14E-05    | 1.83E-05     |
| tblFleetMix             | HHD     | 0.04        | 0.04         |
| tblFleetMix             | HHD     | 0.04        | 0.04         |
| tblFleetMix             | LDA     | 0.56        | 0.56         |
| tblFleetMix             | LDA     | 0.56        | 0.56         |
| tblFleetMix             | LDT1    | 0.04        | 0.04         |
| tblFleetMix             | LDT1    | 0.04        | 0.04         |
| tblFleetMix             | LDT2    | 0.19        | 0.19         |
| tblFleetMix             | LDT2    | 0.19        | 0.19         |
| tblFleetMix             | LHD1    | 0.02        | 0.02         |
| tblFleetMix             | LHD1    | 0.02        | 0.02         |
| tblFleetMix             | LHD2    | 5.2280e-003 | 5.2600e-003  |
| tblFleetMix             | LHD2    | 5.2280e-003 | 5.2600e-003  |
| tblFleetMix             | MCY     | 5.5690e-003 | 5.6030e-003  |
| tblFleetMix             | MCY     | 5.5690e-003 | 5.6030e-003  |
| tblFleetMix             | MDV     | 0.11        | 0.11         |
| tblFleetMix             | MDV     | 0.11        | 0.11         |
| tblFleetMix             | MH      | 7.5900e-004 | 0.00         |
| tblFleetMix             | MH      | 7.5900e-004 | 0.00         |
| tblFleetMix             | MHD     | 0.02        | 0.02         |

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|                                 |                    |             |           |
|---------------------------------|--------------------|-------------|-----------|
| tblFleetMix                     | MHD                | 0.02        | 0.02      |
| tblFleetMix                     | OBUS               | 2.1180e-003 | 0.00      |
| tblFleetMix                     | OBUS               | 2.1180e-003 | 0.00      |
| tblFleetMix                     | SBUS               | 3.0800e-004 | 0.00      |
| tblFleetMix                     | SBUS               | 3.0800e-004 | 0.00      |
| tblFleetMix                     | UBUS               | 2.8050e-003 | 0.00      |
| tblFleetMix                     | UBUS               | 2.8050e-003 | 0.00      |
| tblGrading                      | MaterialExported   | 0.00        | 66,000.00 |
| tblLandUse                      | LotAcreage         | 61.73       | 3.14      |
| tblLandUse                      | LotAcreage         | 29.14       | 0.00      |
| tblLandUse                      | LotAcreage         | 2.00        | 0.00      |
| tblLandUse                      | Population         | 0.00        | 8,067.00  |
| tblLandUse                      | Population         | 0.00        | 218.00    |
| tblProjectCharacteristics       | CO2IntensityFactor | 641.35      | 427       |
| tblProjectCharacteristics       | OperationalYear    | 2018        | 2020      |
| tblStationaryGeneratorsPumpsUse | HorsePowerValue    | 0.00        | 3,353.00  |
| tblStationaryGeneratorsPumpsUse | HoursPerDay        | 0.00        | 1.00      |
| tblStationaryGeneratorsPumpsUse | HoursPerYear       | 0.00        | 50.00     |
| tblStationaryGeneratorsPumpsUse | NumberOfEquipment  | 0.00        | 2.00      |
| tblTripsAndVMT                  | VendorTripNumber   | 667.00      | 96.00     |
| tblVehicleTrips                 | CC_TL              | 7.30        | 2.20      |
| tblVehicleTrips                 | CC_TL              | 7.30        | 4.10      |
| tblVehicleTrips                 | CNW_TL             | 7.30        | 5.20      |
| tblVehicleTrips                 | CNW_TL             | 7.30        | 5.20      |
| tblVehicleTrips                 | CW_TL              | 9.50        | 8.40      |
| tblVehicleTrips                 | CW_TL              | 9.50        | 6.30      |
| tblVehicleTrips                 | ST_TR              | 2.46        | 1.12      |

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|                 |                                       |        |        |
|-----------------|---------------------------------------|--------|--------|
| tblVehicleTrips | ST_TR                                 | 49.97  | 22.78  |
| tblVehicleTrips | SU_TR                                 | 1.05   | 0.48   |
| tblVehicleTrips | SU_TR                                 | 25.24  | 11.51  |
| tblVehicleTrips | WD_TR                                 | 11.03  | 2.72   |
| tblVehicleTrips | WD_TR                                 | 42.70  | 32.01  |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |

**2.0 Emissions Summary**

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**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG            | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr        |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.9338         | 8.3194        | 6.3589        | 0.0215        | 2.3636        | 0.2512        | 2.6148        | 0.5996         | 0.2341        | 0.8337        | 0.0000        | 1,991.4228        | 1,991.4228        | 0.1842        | 0.0000        | 1,996.0269        |
| 2019           | 0.9620         | 4.4978        | 7.2644        | 0.0196        | 1.3711        | 0.1774        | 1.5486        | 0.3664         | 0.1666        | 0.5330        | 0.0000        | 1,780.2879        | 1,780.2879        | 0.1258        | 0.0000        | 1,783.4336        |
| 2020           | 10.0056        | 0.2506        | 0.6632        | 1.6600e-003   | 0.1363        | 0.0146        | 0.1509        | 0.0363         | 0.0139        | 0.0502        | 0.0000        | 149.0837          | 149.0837          | 8.3300e-003   | 0.0000        | 149.2919          |
| <b>Maximum</b> | <b>10.0056</b> | <b>8.3194</b> | <b>7.2644</b> | <b>0.0215</b> | <b>2.3636</b> | <b>0.2512</b> | <b>2.6148</b> | <b>0.5996</b>  | <b>0.2341</b> | <b>0.8337</b> | <b>0.0000</b> | <b>1,991.4228</b> | <b>1,991.4228</b> | <b>0.1842</b> | <b>0.0000</b> | <b>1,996.0269</b> |

**Mitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.5704        | 4.4044        | 6.5004        | 0.0215        | 2.3636        | 0.0298        | 2.3934        | 0.5996         | 0.0287        | 0.6282        | 0.0000        | 1,991.4223        | 1,991.4223        | 0.1842        | 0.0000        | 1,996.0264        |
| 2019           | 0.7124        | 2.1512        | 7.3178        | 0.0196        | 1.3711        | 0.0234        | 1.3945        | 0.3664         | 0.0223        | 0.3887        | 0.0000        | 1,780.2875        | 1,780.2875        | 0.1258        | 0.0000        | 1,783.4333        |
| 2020           | 9.9833        | 0.0592        | 0.6674        | 1.6600e-003   | 0.1363        | 1.4100e-003   | 0.1377        | 0.0363         | 1.3400e-003   | 0.0376        | 0.0000        | 149.0837          | 149.0837          | 8.3300e-003   | 0.0000        | 149.2918          |
| <b>Maximum</b> | <b>9.9833</b> | <b>4.4044</b> | <b>7.3178</b> | <b>0.0215</b> | <b>2.3636</b> | <b>0.0298</b> | <b>2.3934</b> | <b>0.5996</b>  | <b>0.0287</b> | <b>0.6282</b> | <b>0.0000</b> | <b>1,991.4223</b> | <b>1,991.4223</b> | <b>0.1842</b> | <b>0.0000</b> | <b>1,996.0264</b> |

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|                   | ROG  | NOx   | CO    | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 5.34 | 49.38 | -1.39 | 0.00 | 0.00          | 87.68        | 9.01       | 0.00           | 87.40         | 25.58       | 0.00     | 0.00     | 0.00      | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date   | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|--|--|
| 1       | 1-1-2018   | 3-31-2018  | 3.3074                                       | 1.9597                                     |
| 2       | 4-1-2018   | 6-30-2018  | 2.5722                                       | 1.2011                                     |
| 3       | 7-1-2018   | 9-30-2018  | 1.6361                                       | 0.8637                                     |
| 4       | 10-1-2018  | 12-31-2018 | 1.6852                                       | 0.9129                                     |
| 5       | 1-1-2019   | 3-31-2019  | 1.5001                                       | 0.8291                                     |
| 6       | 4-1-2019   | 6-30-2019  | 1.4743                                       | 0.7958                                     |
| 7       | 7-1-2019   | 9-30-2019  | 1.4905                                       | 0.8045                                     |
| 8       | 10-1-2019  | 12-31-2019 | 0.9996                                       | 0.4454                                     |
| 9       | 1-1-2020   | 3-31-2020  | 4.9715                                       | 4.8491                                     |
| 10      | 4-1-2020   | 6-30-2020  | 5.2832                                       | 5.1970                                     |
|         |            | Highest    | 5.2832                                       | 5.1970                                     |

## 2100 Telegraph Avenue Project: Maximum Office Scenario - Alameda County, Annual

**2.2 Overall Operational****Unmitigated Operational**

|              | ROG            | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2          | Total CO2          | CH4            | N2O           | CO2e               |
|--------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|--------------------|--------------------|----------------|---------------|--------------------|
| Category     | tons/yr        |                |                |               |               |               |               |                |               |               | MT/yr           |                    |                    |                |               |                    |
| Area         | 10.3521        | 5.1000e-004    | 0.0556         | 0.0000        |               | 2.0000e-004   | 2.0000e-004   |                | 2.0000e-004   | 2.0000e-004   | 0.0000          | 0.1075             | 0.1075             | 2.9000e-004    | 0.0000        | 0.1147             |
| Energy       | 0.2838         | 2.5795         | 2.1668         | 0.0155        |               | 0.1960        | 0.1960        |                | 0.1960        | 0.1960        | 0.0000          | 11,330.2108        | 11,330.2108        | 0.6326         | 0.1712        | 11,397.0526        |
| Mobile       | 2.1668         | 12.2034        | 19.6095        | 0.0587        | 4.0715        | 0.0589        | 4.1304        | 1.0901         | 0.0553        | 1.1454        | 0.0000          | 5,402.4966         | 5,402.4966         | 0.3006         | 0.0000        | 5,410.0110         |
| Stationary   | 0.2751         | 1.2303         | 0.7015         | 1.3200e-003   |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000          | 127.6813           | 127.6813           | 0.0179         | 0.0000        | 128.1288           |
| Waste        |                |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 526.1769        | 0.0000             | 526.1769           | 31.0962        | 0.0000        | 1,303.5811         |
| Water        |                |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 171.3710        | 661.5968           | 832.9678           | 0.6348         | 0.3820        | 962.6649           |
| <b>Total</b> | <b>13.0778</b> | <b>16.0137</b> | <b>22.5334</b> | <b>0.0755</b> | <b>4.0715</b> | <b>0.2956</b> | <b>4.3671</b> | <b>1.0901</b>  | <b>0.2920</b> | <b>1.3821</b> | <b>697.5479</b> | <b>17,522.0930</b> | <b>18,219.6409</b> | <b>32.6823</b> | <b>0.5532</b> | <b>19,201.5531</b> |

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**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG            | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2          | Total CO2          | CH4            | N2O           | CO2e               |
|--------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|--------------------|--------------------|----------------|---------------|--------------------|
| Category     | tons/yr        |                |                |               |               |               |               |                |               |               | MT/yr           |                    |                    |                |               |                    |
| Area         | 10.3521        | 5.1000e-004    | 0.0556         | 0.0000        |               | 2.0000e-004   | 2.0000e-004   |                | 2.0000e-004   | 2.0000e-004   | 0.0000          | 0.1075             | 0.1075             | 2.9000e-004    | 0.0000        | 0.1147             |
| Energy       | 0.2838         | 2.5795         | 2.1668         | 0.0155        |               | 0.1960        | 0.1960        |                | 0.1960        | 0.1960        | 0.0000          | 11,330.2108        | 11,330.2108        | 0.6326         | 0.1712        | 11,397.0526        |
| Mobile       | 2.1668         | 12.2034        | 19.6095        | 0.0587        | 4.0715        | 0.0589        | 4.1304        | 1.0901         | 0.0553        | 1.1454        | 0.0000          | 5,402.4966         | 5,402.4966         | 0.3006         | 0.0000        | 5,410.0110         |
| Stationary   | 0.2751         | 1.2303         | 0.7015         | 1.3200e-003   |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000          | 127.6813           | 127.6813           | 0.0179         | 0.0000        | 128.1288           |
| Waste        |                |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 526.1769        | 0.0000             | 526.1769           | 31.0962        | 0.0000        | 1,303.5811         |
| Water        |                |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 137.0968        | 569.5270           | 706.6238           | 0.5106         | 0.3061        | 810.6184           |
| <b>Total</b> | <b>13.0778</b> | <b>16.0137</b> | <b>22.5334</b> | <b>0.0755</b> | <b>4.0715</b> | <b>0.2956</b> | <b>4.3671</b> | <b>1.0901</b>  | <b>0.2920</b> | <b>1.3821</b> | <b>663.2737</b> | <b>17,430.0232</b> | <b>18,093.2969</b> | <b>32.5581</b> | <b>0.4774</b> | <b>19,049.5066</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio-CO2    | Total CO2   | CH4         | N2O          | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>4.91</b> | <b>0.53</b> | <b>0.69</b> | <b>0.38</b> | <b>13.71</b> | <b>0.79</b> |

**3.0 Construction Detail**

**Construction Phase**



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| Phase Number | Phase Name                                      | Phase Type            | Start Date | End Date   | Num Days Week | Num Days | Phase Description |
|--------------|---|-----------------------|------------|------------|---------------|----------|-------------------|
| 1            | Demolition                                      | Demolition            | 1/1/2018   | 2/23/2018  | 5             | 40       |                   |
| 2            | Site Preparation                                | Site Preparation      | 2/24/2018  | 3/9/2018   | 5             | 10       |                   |
| 3            | Grading, Excavation, Shoring, and Trenching     | Grading               | 3/10/2018  | 6/29/2018  | 5             | 80       |                   |
| 4            | Building Construction                           | Building Construction | 6/30/2018  | 11/15/2019 | 5             | 360      |                   |
| 5            | Paving  | Paving                | 11/16/2019 | 1/10/2020  | 5             | 40       |                   |
| 6            | Architectural Coatings and General Construction | Architectural Coating | 1/11/2020  | 6/26/2020  | 5             | 120      |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 4,164,000; Non-Residential Outdoor: 0; Striped Parking Area: 77,712 (Architectural Coating – sqft)**

**OffRoad Equipment**

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| Phase Name                                      | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---|---------------------------|--------|-------------|-------------|-------------|
| Demolition                                      | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Demolition                                      | Excavators                | 3      | 8.00        | 158         | 0.38        |
| Demolition                                      | Rubber Tired Dozers       | 2      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Tractors/Loaders/Backhoes | 4      | 8.00        | 97          | 0.37        |
| Grading, Excavation, Shoring, and Trenching     | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Grading, Excavation, Shoring, and Trenching     | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Grading, Excavation, Shoring, and Trenching     | Excavators                | 1      | 8.00        | 158         | 0.38        |
| Grading, Excavation, Shoring, and Trenching     | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading, Excavation, Shoring, and Trenching     | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Grading, Excavation, Shoring, and Trenching     | Tractors/Loaders/Backhoes | 3      | 8.00        | 97          | 0.37        |
| Building Construction                           | Cranes                    | 1      | 7.00        | 231         | 0.29        |
| Building Construction                           | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction                           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Building Construction                           | Tractors/Loaders/Backhoes | 3      | 7.00        | 97          | 0.37        |
| Building Construction                           | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Paving  | Cement and Mortar Mixers  | 2      | 6.00        | 9           | 0.56        |
| Paving  | Pavers                    | 1      | 8.00        | 130         | 0.42        |
| Paving  | Paving Equipment          | 2      | 6.00        | 132         | 0.36        |
| Paving  | Rollers                   | 2      | 6.00        | 80          | 0.38        |
| Paving  | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Architectural Coatings and General Construction | Air Compressors           | 1      | 6.00        | 78          | 0.48        |
| Architectural Coatings and General Construction | Forklifts                 | 1      | 6.00        | 89          | 0.20        |

**Trips and VMT**

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| Phase Name                                      | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition                                      | 6                       | 15.00              | 0.00               | 9,816.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation                                | 7                       | 18.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading, Excavation, Shoring, and Trenching     | 8                       | 20.00              | 0.00               | 8,250.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction                           | 9                       | 1,432.00           | 96.00              | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving  | 8                       | 20.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coatings and General Construction | 2                       | 286.00             | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Demolition - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |               |               |               |                    | 1.0621        | 0.0000        | 1.0621        | 0.1608         | 0.0000        | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 0.0744        | 0.7665        | 0.4461        | 7.8000e-004        |               | 0.0388        | 0.0388        |                | 0.0361        | 0.0361        | 0.0000        | 70.2482        | 70.2482        | 0.0194        | 0.0000        | 70.7320        |
| <b>Total</b>  | <b>0.0744</b> | <b>0.7665</b> | <b>0.4461</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>0.0388</b> | <b>1.1009</b> | <b>0.1608</b>  | <b>0.0361</b> | <b>0.1969</b> | <b>0.0000</b> | <b>70.2482</b> | <b>70.2482</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7320</b> |

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**3.2 Demolition - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |                    |               |               |                    | 1.0621        | 0.0000             | 1.0621        | 0.1608         | 0.0000             | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 9.2500e-003        | 0.0401        | 0.4656        | 7.8000e-004        |               | 1.2300e-003        | 1.2300e-003   |                | 1.2300e-003        | 1.2300e-003   | 0.0000        | 70.2481        | 70.2481        | 0.0194        | 0.0000        | 70.7319        |
| <b>Total</b>  | <b>9.2500e-003</b> | <b>0.0401</b> | <b>0.4656</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>1.2300e-003</b> | <b>1.0634</b> | <b>0.1608</b>  | <b>1.2300e-003</b> | <b>0.1620</b> | <b>0.0000</b> | <b>70.2481</b> | <b>70.2481</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7319</b> |

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**3.2 Demolition - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**3.3 Site Preparation - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |               |               |               |                    | 0.0903        | 0.0000        | 0.0903        | 0.0497         | 0.0000        | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 0.0228        | 0.2410        | 0.1124        | 1.9000e-004        |               | 0.0129        | 0.0129        |                | 0.0119        | 0.0119        | 0.0000        | 17.3800        | 17.3800        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>0.0228</b> | <b>0.2410</b> | <b>0.1124</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>0.0129</b> | <b>0.1032</b> | <b>0.0497</b>  | <b>0.0119</b> | <b>0.0615</b> | <b>0.0000</b> | <b>17.3800</b> | <b>17.3800</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |                    |               |               |                    | 0.0903        | 0.0000             | 0.0903        | 0.0497         | 0.0000             | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 2.3300e-003        | 0.0101        | 0.1043        | 1.9000e-004        |               | 3.1000e-004        | 3.1000e-004   |                | 3.1000e-004        | 3.1000e-004   | 0.0000        | 17.3799        | 17.3799        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>2.3300e-003</b> | <b>0.0101</b> | <b>0.1043</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>3.1000e-004</b> | <b>0.0906</b> | <b>0.0497</b>  | <b>3.1000e-004</b> | <b>0.0500</b> | <b>0.0000</b> | <b>17.3799</b> | <b>17.3799</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000        | 0.2658        | 0.1353         | 0.0000        | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.1458        | 1.6676        | 0.8476        | 1.7900e-003        |               | 0.0786        | 0.0786        |                | 0.0723        | 0.0723        | 0.0000        | 163.7640        | 163.7640        | 0.0510        | 0.0000        | 165.0386        |
| <b>Total</b>  | <b>0.1458</b> | <b>1.6676</b> | <b>0.8476</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>0.0786</b> | <b>0.3444</b> | <b>0.1353</b>  | <b>0.0723</b> | <b>0.2076</b> | <b>0.0000</b> | <b>163.7640</b> | <b>163.7640</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0386</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000             | 0.2658        | 0.1353         | 0.0000             | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.0220        | 0.0955        | 0.9856        | 1.7900e-003        |               | 2.9400e-003        | 2.9400e-003   |                | 2.9400e-003        | 2.9400e-003   | 0.0000        | 163.7638        | 163.7638        | 0.0510        | 0.0000        | 165.0384        |
| <b>Total</b>  | <b>0.0220</b> | <b>0.0955</b> | <b>0.9856</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>2.9400e-003</b> | <b>0.2688</b> | <b>0.1353</b>  | <b>2.9400e-003</b> | <b>0.1382</b> | <b>0.0000</b> | <b>163.7638</b> | <b>163.7638</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0384</b> |



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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**3.5 Building Construction - 2018**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.1755        | 1.5321        | 1.1515        | 1.7600e-003        |               | 0.0982        | 0.0982        |                | 0.0924        | 0.0924        | 0.0000        | 155.7375        | 155.7375        | 0.0382        | 0.0000        | 156.6914        |
| <b>Total</b> | <b>0.1755</b> | <b>1.5321</b> | <b>1.1515</b> | <b>1.7600e-003</b> |               | <b>0.0982</b> | <b>0.0982</b> |                | <b>0.0924</b> | <b>0.0924</b> | <b>0.0000</b> | <b>155.7375</b> | <b>155.7375</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6914</b> |

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**3.5 Building Construction - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003   | 0.0473        | 0.0120         | 5.7900e-003   | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.3931        | 0.3086        | 3.0797        | 7.7600e-003        | 0.7416        | 5.4100e-003   | 0.7470        | 0.1973         | 4.9900e-003   | 0.2023        | 0.0000        | 700.7858        | 700.7858        | 0.0220        | 0.0000        | 701.3353        |
| <b>Total</b> | <b>0.4243</b> | <b>1.1562</b> | <b>3.2733</b> | <b>9.5200e-003</b> | <b>0.7829</b> | <b>0.0115</b> | <b>0.7944</b> | <b>0.2092</b>  | <b>0.0108</b> | <b>0.2200</b> | <b>0.0000</b> | <b>869.4302</b> | <b>869.4302</b> | <b>0.0328</b> | <b>0.0000</b> | <b>870.2495</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0215        | 0.1464        | 1.1436        | 1.7600e-003        |               | 2.6700e-003        | 2.6700e-003        |                | 2.6700e-003        | 2.6700e-003        | 0.0000        | 155.7374        | 155.7374        | 0.0382        | 0.0000        | 156.6912        |
| <b>Total</b> | <b>0.0215</b> | <b>0.1464</b> | <b>1.1436</b> | <b>1.7600e-003</b> |               | <b>2.6700e-003</b> | <b>2.6700e-003</b> |                | <b>2.6700e-003</b> | <b>2.6700e-003</b> | <b>0.0000</b> | <b>155.7374</b> | <b>155.7374</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6912</b> |

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**3.5 Building Construction - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003   | 0.0473        | 0.0120         | 5.7900e-003   | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.3931        | 0.3086        | 3.0797        | 7.7600e-003        | 0.7416        | 5.4100e-003   | 0.7470        | 0.1973         | 4.9900e-003   | 0.2023        | 0.0000        | 700.7858        | 700.7858        | 0.0220        | 0.0000        | 701.3353        |
| <b>Total</b> | <b>0.4243</b> | <b>1.1562</b> | <b>3.2733</b> | <b>9.5200e-003</b> | <b>0.7829</b> | <b>0.0115</b> | <b>0.7944</b> | <b>0.2092</b>  | <b>0.0108</b> | <b>0.2200</b> | <b>0.0000</b> | <b>869.4302</b> | <b>869.4302</b> | <b>0.0328</b> | <b>0.0000</b> | <b>870.2495</b> |

**3.5 Building Construction - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.2704        | 2.4135        | 1.9653        | 3.0800e-003        |               | 0.1477        | 0.1477        |                | 0.1389        | 0.1389        | 0.0000        | 269.1943        | 269.1943        | 0.0656        | 0.0000        | 270.8338        |
| <b>Total</b> | <b>0.2704</b> | <b>2.4135</b> | <b>1.9653</b> | <b>3.0800e-003</b> |               | <b>0.1477</b> | <b>0.1477</b> |                | <b>0.1389</b> | <b>0.1389</b> | <b>0.0000</b> | <b>269.1943</b> | <b>269.1943</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8338</b> |

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**3.5 Building Construction - 2019**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.6206        | 0.4734        | 4.7819        | 0.0132        | 1.2964        | 9.2400e-003   | 1.3057        | 0.3449         | 8.5100e-003   | 0.3534        | 0.0000        | 1,189.2176        | 1,189.2176        | 0.0339        | 0.0000        | 1,190.0654        |
| <b>Total</b> | <b>0.6701</b> | <b>1.8792</b> | <b>5.0928</b> | <b>0.0162</b> | <b>1.3686</b> | <b>0.0182</b> | <b>1.3868</b> | <b>0.3658</b>  | <b>0.0171</b> | <b>0.3829</b> | <b>0.0000</b> | <b>1,482.0170</b> | <b>1,482.0170</b> | <b>0.0520</b> | <b>0.0000</b> | <b>1,483.3158</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0375        | 0.2559        | 1.9992        | 3.0800e-003        |               | 4.6700e-003        | 4.6700e-003        |                | 4.6700e-003        | 4.6700e-003        | 0.0000        | 269.1940        | 269.1940        | 0.0656        | 0.0000        | 270.8334        |
| <b>Total</b> | <b>0.0375</b> | <b>0.2559</b> | <b>1.9992</b> | <b>3.0800e-003</b> |               | <b>4.6700e-003</b> | <b>4.6700e-003</b> |                | <b>4.6700e-003</b> | <b>4.6700e-003</b> | <b>0.0000</b> | <b>269.1940</b> | <b>269.1940</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8334</b> |

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**3.5 Building Construction - 2019**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993          | 292.7993          | 0.0180        | 0.0000        | 293.2504          |
| Worker       | 0.6206        | 0.4734        | 4.7819        | 0.0132        | 1.2964        | 9.2400e-003   | 1.3057        | 0.3449         | 8.5100e-003   | 0.3534        | 0.0000        | 1,189.2176        | 1,189.2176        | 0.0339        | 0.0000        | 1,190.0654        |
| <b>Total</b> | <b>0.6701</b> | <b>1.8792</b> | <b>5.0928</b> | <b>0.0162</b> | <b>1.3686</b> | <b>0.0182</b> | <b>1.3868</b> | <b>0.3658</b>  | <b>0.0171</b> | <b>0.3829</b> | <b>0.0000</b> | <b>1,482.0170</b> | <b>1,482.0170</b> | <b>0.0520</b> | <b>0.0000</b> | <b>1,483.3158</b> |

**3.6 Paving - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0203        | 0.2042        | 0.1970        | 3.0000e-004        |               | 0.0115        | 0.0115        |                | 0.0106        | 0.0106        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>0.0203</b> | <b>0.2042</b> | <b>0.1970</b> | <b>3.0000e-004</b> |               | <b>0.0115</b> | <b>0.0115</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Off-Road     | 3.5100e-003        | 0.0152        | 0.2165        | 3.0000e-004        |               | 4.7000e-004        | 4.7000e-004        |                | 4.7000e-004        | 4.7000e-004        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>3.5100e-003</b> | <b>0.0152</b> | <b>0.2165</b> | <b>3.0000e-004</b> |               | <b>4.7000e-004</b> | <b>4.7000e-004</b> |                | <b>4.7000e-004</b> | <b>4.7000e-004</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 4.7300e-003        | 0.0472        | 0.0491        | 8.0000e-005        |               | 2.6000e-003        | 2.6000e-003        |                | 2.4000e-003        | 2.4000e-003        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6003        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>4.7300e-003</b> | <b>0.0472</b> | <b>0.0491</b> | <b>8.0000e-005</b> |               | <b>2.6000e-003</b> | <b>2.6000e-003</b> |                | <b>2.4000e-003</b> | <b>2.4000e-003</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6003</b> |

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**3.6 Paving - 2020**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 8.8000e-004        | 3.8000e-003        | 0.0541        | 8.0000e-005        |               | 1.2000e-004        | 1.2000e-004        |                | 1.2000e-004        | 1.2000e-004        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6002        |
| Paving       | 0.0000             |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>8.8000e-004</b> | <b>3.8000e-003</b> | <b>0.0541</b> | <b>8.0000e-005</b> |               | <b>1.2000e-004</b> | <b>1.2000e-004</b> |                | <b>1.2000e-004</b> | <b>1.2000e-004</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6002</b> |



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**3.6 Paving - 2020**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 9.9202        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 0.0210        | 0.1594        | 0.1630        | 2.5000e-004        |               | 0.0110        | 0.0110        |                | 0.0107        | 0.0107        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4412        |
| <b>Total</b>    | <b>9.9412</b> | <b>0.1594</b> | <b>0.1630</b> | <b>2.5000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0107</b> | <b>0.0107</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4412</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |                    |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0593        | 0.0438        | 0.4490        | 1.3300e-003        | 0.1357        | 9.4000e-004        | 0.1366        | 0.0361         | 8.7000e-004        | 0.0370        | 0.0000        | 120.6100        | 120.6100        | 3.1100e-003        | 0.0000        | 120.6878        |
| <b>Total</b> | <b>0.0593</b> | <b>0.0438</b> | <b>0.4490</b> | <b>1.3300e-003</b> | <b>0.1357</b> | <b>9.4000e-004</b> | <b>0.1366</b> | <b>0.0361</b>  | <b>8.7000e-004</b> | <b>0.0370</b> | <b>0.0000</b> | <b>120.6100</b> | <b>120.6100</b> | <b>3.1100e-003</b> | <b>0.0000</b> | <b>120.6878</b> |

**Mitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 9.9202        |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 2.6300e-003   | 0.0114        | 0.1622        | 2.5000e-004        |               | 3.5000e-004        | 3.5000e-004        |                | 3.5000e-004        | 3.5000e-004        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4411        |
| <b>Total</b>    | <b>9.9229</b> | <b>0.0114</b> | <b>0.1622</b> | <b>2.5000e-004</b> |               | <b>3.5000e-004</b> | <b>3.5000e-004</b> |                | <b>3.5000e-004</b> | <b>3.5000e-004</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4411</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4                | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|--------------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |                    |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000             | 0.0000        | 0.0000          |
| Worker       | 0.0593        | 0.0438        | 0.4490        | 1.3300e-003        | 0.1357        | 9.4000e-004        | 0.1366        | 0.0361         | 8.7000e-004        | 0.0370        | 0.0000        | 120.6100        | 120.6100        | 3.1100e-003        | 0.0000        | 120.6878        |
| <b>Total</b> | <b>0.0593</b> | <b>0.0438</b> | <b>0.4490</b> | <b>1.3300e-003</b> | <b>0.1357</b> | <b>9.4000e-004</b> | <b>0.1366</b> | <b>0.0361</b>  | <b>8.7000e-004</b> | <b>0.0370</b> | <b>0.0000</b> | <b>120.6100</b> | <b>120.6100</b> | <b>3.1100e-003</b> | <b>0.0000</b> | <b>120.6878</b> |

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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|             | ROG     | NOx     | CO      | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------|---------|---------|---------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Category    | tons/yr |         |         |        |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Mitigated   | 2.1668  | 12.2034 | 19.6095 | 0.0587 | 4.0715        | 0.0589       | 4.1304     | 1.0901         | 0.0553        | 1.1454      | 0.0000   | 5,402.4966 | 5,402.4966 | 0.3006 | 0.0000 | 5,410.0110 |
| Unmitigated | 2.1668  | 12.2034 | 19.6095 | 0.0587 | 4.0715        | 0.0589       | 4.1304     | 1.0901         | 0.0553        | 1.1454      | 0.0000   | 5,402.4966 | 5,402.4966 | 0.3006 | 0.0000 | 5,410.0110 |

4.2 Trip Summary Information

| Land Use                       | Average Daily Trip Rate |          |          | Unmitigated | Mitigated  |
|--------------------------------|-------------------------|----------|----------|-------------|------------|
|                                | Weekday                 | Saturday | Sunday   | Annual VMT  | Annual VMT |
| Enclosed Parking with Elevator | 0.00                    | 0.00     | 0.00     |             |            |
| General Office Building        | 7,314.08                | 3,011.68 | 1290.72  | 8,376,315   | 8,376,315  |
| Regional Shopping Center       | 2,784.70                | 1,982.21 | 1001.54  | 2,584,706   | 2,584,706  |
| Total                          | 10,098.78               | 4,993.89 | 2,292.26 | 10,961,021  | 10,961,021 |

4.3 Trip Type Information

| Land Use                       | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|--------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary        | Diverted | Pass-by |
| Enclosed Parking with Elevator | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |
| General Office Building        | 8.40       | 2.20       | 5.20        | 33.00      | 48.00      | 19.00       | 77             | 19       | 4       |
| Regional Shopping Center       | 6.30       | 4.10       | 5.20        | 16.30      | 64.70      | 19.00       | 54             | 35       | 11      |

4.4 Fleet Mix

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| Land Use                       | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Office Building        | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Enclosed Parking with Elevator | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Regional Shopping Center       | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                         | ROG     | NOx    | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------------------|---------|--------|--------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Category                | tons/yr |        |        |        |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Electricity Mitigated   |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 8,522.0834 | 8,522.0834 | 0.5788 | 0.1198 | 8,572.2379 |
| Electricity Unmitigated |         |        |        |        |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 8,522.0834 | 8,522.0834 | 0.5788 | 0.1198 | 8,572.2379 |
| NaturalGas Mitigated    | 0.2838  | 2.5795 | 2.1668 | 0.0155 |               | 0.1960       | 0.1960     |                | 0.1960        | 0.1960      | 0.0000   | 2,808.1274 | 2,808.1274 | 0.0538 | 0.0515 | 2,824.8147 |
| NaturalGas Unmitigated  | 0.2838  | 2.5795 | 2.1668 | 0.0155 |               | 0.1960       | 0.1960     |                | 0.1960        | 0.1960      | 0.0000   | 2,808.1274 | 2,808.1274 | 0.0538 | 0.0515 | 2,824.8147 |

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**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 5.22204e+007   | 0.2816        | 2.5598        | 2.1503        | 0.0154        |               | 0.1946        | 0.1946        |                | 0.1946        | 0.1946        | 0.0000        | 2,786.6783        | 2,786.6783        | 0.0534        | 0.0511        | 2,803.2382        |
| Regional Shopping Center       | 401940         | 2.1700e-003   | 0.0197        | 0.0166        | 1.2000e-004   |               | 1.5000e-003   | 1.5000e-003   |                | 1.5000e-003   | 1.5000e-003   | 0.0000        | 21.4491           | 21.4491           | 4.1000e-004   | 3.9000e-004   | 21.5765           |
| <b>Total</b>                   |                | <b>0.2838</b> | <b>2.5795</b> | <b>2.1668</b> | <b>0.0155</b> |               | <b>0.1961</b> | <b>0.1961</b> |                | <b>0.1961</b> | <b>0.1961</b> | <b>0.0000</b> | <b>2,808.1274</b> | <b>2,808.1274</b> | <b>0.0538</b> | <b>0.0515</b> | <b>2,824.8147</b> |

**Mitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000        |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 5.22204e+007   | 0.2816        | 2.5598        | 2.1503        | 0.0154        |               | 0.1946        | 0.1946        |                | 0.1946        | 0.1946        | 0.0000        | 2,786.6783        | 2,786.6783        | 0.0534        | 0.0511        | 2,803.2382        |
| Regional Shopping Center       | 401940         | 2.1700e-003   | 0.0197        | 0.0166        | 1.2000e-004   |               | 1.5000e-003   | 1.5000e-003   |                | 1.5000e-003   | 1.5000e-003   | 0.0000        | 21.4491           | 21.4491           | 4.1000e-004   | 3.9000e-004   | 21.5765           |
| <b>Total</b>                   |                | <b>0.2838</b> | <b>2.5795</b> | <b>2.1668</b> | <b>0.0155</b> |               | <b>0.1961</b> | <b>0.1961</b> |                | <b>0.1961</b> | <b>0.1961</b> | <b>0.0000</b> | <b>2,808.1274</b> | <b>2,808.1274</b> | <b>0.0538</b> | <b>0.0515</b> | <b>2,824.8147</b> |

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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Enclosed Parking with Elevator | 8.72965e+006    | 1,690.7926        | 0.1148        | 0.0238        | 1,700.7434        |
| General Office Building        | 3.43385e+007    | 6,650.8219        | 0.4517        | 0.0935        | 6,689.9636        |
| Regional Shopping Center       | 931770          | 180.4689          | 0.0123        | 2.5400e-003   | 181.5310          |
| <b>Total</b>                   |                 | <b>8,522.0834</b> | <b>0.5788</b> | <b>0.1198</b> | <b>8,572.2379</b> |

**Mitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Enclosed Parking with Elevator | 8.72965e+006    | 1,690.7926        | 0.1148        | 0.0238        | 1,700.7434        |
| General Office Building        | 3.43385e+007    | 6,650.8219        | 0.4517        | 0.0935        | 6,689.9636        |
| Regional Shopping Center       | 931770          | 180.4689          | 0.0123        | 2.5400e-003   | 181.5310          |
| <b>Total</b>                   |                 | <b>8,522.0834</b> | <b>0.5788</b> | <b>0.1198</b> | <b>8,572.2379</b> |

**6.0 Area Detail**

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**6.1 Mitigation Measures Area**

|             | ROG     | NOx         | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4         | N2O    | CO2e   |
|-------------|---------|-------------|--------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category    | tons/yr |             |        |        |               |              |             |                |               |             | MT/yr    |           |           |             |        |        |
| Mitigated   | 10.3521 | 5.1000e-004 | 0.0556 | 0.0000 |               | 2.0000e-004  | 2.0000e-004 |                | 2.0000e-004   | 2.0000e-004 | 0.0000   | 0.1075    | 0.1075    | 2.9000e-004 | 0.0000 | 0.1147 |
| Unmitigated | 10.3521 | 5.1000e-004 | 0.0556 | 0.0000 |               | 2.0000e-004  | 2.0000e-004 |                | 2.0000e-004   | 2.0000e-004 | 0.0000   | 0.1075    | 0.1075    | 2.9000e-004 | 0.0000 | 0.1147 |

**6.2 Area by SubCategory**

Unmitigated

|                       | ROG            | NOx                | CO            | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|----------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr        |                    |               |               |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.9920         |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 9.3549         |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 5.2300e-003    | 5.1000e-004        | 0.0556        | 0.0000        |               | 2.0000e-004        | 2.0000e-004        |                | 2.0000e-004        | 2.0000e-004        | 0.0000        | 0.1075        | 0.1075        | 2.9000e-004        | 0.0000        | 0.1147        |
| <b>Total</b>          | <b>10.3521</b> | <b>5.1000e-004</b> | <b>0.0556</b> | <b>0.0000</b> |               | <b>2.0000e-004</b> | <b>2.0000e-004</b> |                | <b>2.0000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> | <b>0.1075</b> | <b>0.1075</b> | <b>2.9000e-004</b> | <b>0.0000</b> | <b>0.1147</b> |



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**6.2 Area by SubCategory**

**Mitigated**

|                       | ROG            | NOx                | CO            | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|----------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr        |                    |               |               |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.9920         |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 9.3549         |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 5.2300e-003    | 5.1000e-004        | 0.0556        | 0.0000        |               | 2.0000e-004        | 2.0000e-004        |                | 2.0000e-004        | 2.0000e-004        | 0.0000        | 0.1075        | 0.1075        | 2.9000e-004        | 0.0000        | 0.1147        |
| <b>Total</b>          | <b>10.3521</b> | <b>5.1000e-004</b> | <b>0.0556</b> | <b>0.0000</b> |               | <b>2.0000e-004</b> | <b>2.0000e-004</b> |                | <b>2.0000e-004</b> | <b>2.0000e-004</b> | <b>0.0000</b> | <b>0.1075</b> | <b>0.1075</b> | <b>2.9000e-004</b> | <b>0.0000</b> | <b>0.1147</b> |

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

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|             | Total CO2 | CH4    | N2O    | CO2e     |
|-------------|-----------|--------|--------|----------|
| Category    | MT/yr     |        |        |          |
| Mitigated   | 706.6238  | 0.5106 | 0.3061 | 810.6184 |
| Unmitigated | 832.9678  | 0.6348 | 0.3820 | 962.6649 |

**7.2 Water by Land Use**

**Unmitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 477.926 / 292.922  | 821.8856        | 0.6263        | 0.3769        | 949.8571        |
| Regional Shopping Center       | 6.44431 / 3.94974  | 11.0822         | 8.4500e-003   | 5.0800e-003   | 12.8078         |
| <b>Total</b>                   |                    | <b>832.9678</b> | <b>0.6348</b> | <b>0.3820</b> | <b>962.6649</b> |

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**7.2 Water by Land Use**

**Mitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 382.341 / 292.922  | 697.2225        | 0.5038        | 0.3021        | 799.8335        |
| Regional Shopping Center       | 5.15545 / 3.94974  | 9.4013          | 6.7900e-003   | 4.0700e-003   | 10.7849         |
| <b>Total</b>                   |                    | <b>706.6238</b> | <b>0.5106</b> | <b>0.3061</b> | <b>810.6184</b> |

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste**

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**Category/Year**

|             | Total CO2 | CH4     | N2O    | CO2e           |
|-------------|-----------|---------|--------|----------------|
|             | MT/yr     |         |        |                |
| Mitigated   | 526.1769  | 31.0962 | 0.0000 | 1,303.581<br>1 |
| Unmitigated | 526.1769  | 31.0962 | 0.0000 | 1,303.581<br>1 |

**8.2 Waste by Land Use**

**Unmitigated**

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e                   |
|--------------------------------|----------------|-----------------|----------------|---------------|------------------------|
| Land Use                       | tons           | MT/yr           |                |               |                        |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000                 |
| General Office Building        | 2500.77        | 507.6337        | 30.0003        | 0.0000        | 1,257.641<br>0         |
| Regional Shopping Center       | 91.35          | 18.5432         | 1.0959         | 0.0000        | 45.9401                |
| <b>Total</b>                   |                | <b>526.1769</b> | <b>31.0962</b> | <b>0.0000</b> | <b>1,303.581<br/>1</b> |

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**8.2 Waste by Land Use**

Mitigated

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e              |
|--------------------------------|----------------|-----------------|----------------|---------------|-------------------|
| Land Use                       | tons           | MT/yr           |                |               |                   |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000            |
| General Office Building        | 2500.77        | 507.6337        | 30.0003        | 0.0000        | 1,257.6410        |
| Regional Shopping Center       | 91.35          | 18.5432         | 1.0959         | 0.0000        | 45.9401           |
| <b>Total</b>                   |                | <b>526.1769</b> | <b>31.0962</b> | <b>0.0000</b> | <b>1,303.5811</b> |

**9.0 Operational Offroad**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

| Equipment Type      | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---------------------|--------|-----------|------------|-------------|-------------|-----------|
| Emergency Generator | 2      | 1         | 50         | 3353        | 0.73        | Diesel    |

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

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|                |        |
|----------------|--------|
| Equipment Type | Number |
|----------------|--------|

**10.1 Stationary Sources**

**Unmitigated/Mitigated**

|  | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Equipment Type                               | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Emergency Generator - Diesel (750 - 9999 HP) | 0.2751        | 1.2303        | 0.7015        | 1.3200e-003        |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000        | 127.6813        | 127.6813        | 0.0179        | 0.0000        | 128.1288        |
| <b>Total</b>                                 | <b>0.2751</b> | <b>1.2303</b> | <b>0.7015</b> | <b>1.3200e-003</b> |               | <b>0.0405</b> | <b>0.0405</b> |                | <b>0.0405</b> | <b>0.0405</b> | <b>0.0000</b> | <b>127.6813</b> | <b>127.6813</b> | <b>0.0179</b> | <b>0.0000</b> | <b>128.1288</b> |

**11.0 Vegetation**

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**2100 Telegraph Avenue Project: All Office Scenario  
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**1.0 Project Characteristics**

**1.1 Land Usage**

| Land Uses                      | Size     | Metric   | Lot Acreage | Floor Surface Area | Population |
|--------------------------------|----------|----------|-------------|--------------------|------------|
| General Office Building        | 1,450.00 | 1000sqft | 3.14        | 1,450,000.00       | 4350       |
| Enclosed Parking with Elevator | 1,750.00 | Space    | 0.00        | 700,000.00         | 0          |
| Regional Shopping Center       | 80.00    | 1000sqft | 0.00        | 80,000.00          | 200        |

**1.2 Other Project Characteristics**

|                                |                                |                                |       |                                  |       |
|--------------------------------|--------------------------------|--------------------------------|-------|----------------------------------|-------|
| <b>Urbanization</b>            | Urban                          | <b>Wind Speed (m/s)</b>        | 2.2   | <b>Precipitation Freq (Days)</b> | 63    |
| <b>Climate Zone</b>            | 5                              |                                |       | <b>Operational Year</b>          | 2020  |
| <b>Utility Company</b>         | Pacific Gas & Electric Company |                                |       |                                  |       |
| <b>CO2 Intensity (lb/MWhr)</b> | 427                            | <b>CH4 Intensity (lb/MWhr)</b> | 0.029 | <b>N2O Intensity (lb/MWhr)</b>   | 0.006 |

**1.3 User Entered Comments & Non-Default Data**

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Project Characteristics - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Land Use - Square footage updated based on project design. Population estimates based on 2.1 persons/residential unit, 3 persons/KSF office, 2.5 persons/KSF retail.

Construction Phase - According to project sponsor, construction expected to last up to 30 months.

Off-road Equipment - Added forklift for general construction activities.

Off-road Equipment - Added crane and drill rig for shoring and piles.

Trips and VMT - Conservatively assuming 1 vendor truck every 5 minutes (96 vendor trucks/8-hour day)

Demolition - Asphalt demo assumption: (Area of pavement)(Depth of pavement)(Density asphalt) = (33 KSF)(0.25 ft)(0.0725 tons/ft<sup>3</sup>) = 598 tons

Building demo assumption: (Area of buildings)(CalEEMod conversion factor) = (214.5 KSF)(0.046 tons/ft<sup>2</sup>) = 98,670 tons

Grading - Project sponsor anticipates up to 66,000 CY of material export.

Architectural Coating - No exterior paint in the project design.

Vehicle Trips - Trip rates adjusted based on Fehr & Peers (2016) traffic analysis and SCA-TRANS-4 . Average travel distances adjusted based on MTC Travel Model results for project vicinity (TAZ 970).

Consumer Products - ROG emission factor for consumer products reduced by 14.6% based on CARB's 2012 Statewide inventory.

Area Coating - No exterior paint included in the project design.

Energy Use - PG&E's default 2008 CO2 intensity factor updated to the most recent (2013) emission factor verified by a 3rd party in PG&E's (2015) Greenhouse Gas Emission Factors: Guidance for PG&E Customers.

Water And Wastewater - EBMUD would service the proposed project and applies 100 percent aerobic process and 100 percent cogeneration.

Construction Off-road Equipment Mitigation - SCA-AIR-1 (#19) Enhanced Controls require use of Tier 4 engines. These emission reductions are considered part of the project's unmitigated emissions.

Water Mitigation - CALGreen Code mandatory requirement. These emission reductions are considered part of the project's unmitigated emissions.

Fleet Mix - Project is not expected to generate new bus or mobile home trips.

Stationary Sources - Emergency Generators and Fire Pumps - Emergency generator for elevator. Limited to 50 hours of testing/maintenance per year. Assume maximum 1 hour operation/test day. Maximum Office Scenario = 3,353 HP (2,500kW)

| Table Name              | Column Name                       | Default Value | New Value |
|-------------------------|-----------------------------------|---------------|-----------|
| tblArchitecturalCoating | ConstArea_Nonresidential_Exterior | 765,000.00    | 0.00      |
| tblAreaCoating          | Area_Nonresidential_Exterior      | 765000        | 0         |
| tblConstEquipMitigation | NumberOfEquipmentMitigated        | 0.00          | 1.00      |
| tblConstEquipMitigation | NumberOfEquipmentMitigated        | 0.00          | 1.00      |





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| tblConstEquipMitigation | Tier    | No Change   | Tier 4 Final |
|-------------------------|---------|-------------|--------------|
| tblConstructionPhase    | NumDays | 18.00       | 120.00       |
| tblConstructionPhase    | NumDays | 230.00      | 360.00       |
| tblConstructionPhase    | NumDays | 20.00       | 40.00        |
| tblConstructionPhase    | NumDays | 8.00        | 80.00        |
| tblConstructionPhase    | NumDays | 18.00       | 40.00        |
| tblConstructionPhase    | NumDays | 5.00        | 10.00        |
| tblConsumerProducts     | ROG_EF  | 2.14E-05    | 1.83E-05     |
| tblFleetMix             | HHD     | 0.04        | 0.04         |
| tblFleetMix             | HHD     | 0.04        | 0.04         |
| tblFleetMix             | LDA     | 0.56        | 0.56         |
| tblFleetMix             | LDA     | 0.56        | 0.56         |
| tblFleetMix             | LDT1    | 0.04        | 0.04         |
| tblFleetMix             | LDT1    | 0.04        | 0.04         |
| tblFleetMix             | LDT2    | 0.19        | 0.19         |
| tblFleetMix             | LDT2    | 0.19        | 0.19         |
| tblFleetMix             | LHD1    | 0.02        | 0.02         |
| tblFleetMix             | LHD1    | 0.02        | 0.02         |
| tblFleetMix             | LHD2    | 5.2280e-003 | 5.2600e-003  |
| tblFleetMix             | LHD2    | 5.2280e-003 | 5.2600e-003  |
| tblFleetMix             | MCY     | 5.5690e-003 | 5.6030e-003  |
| tblFleetMix             | MCY     | 5.5690e-003 | 5.6030e-003  |
| tblFleetMix             | MDV     | 0.11        | 0.11         |
| tblFleetMix             | MDV     | 0.11        | 0.11         |
| tblFleetMix             | MH      | 7.5900e-004 | 0.00         |
| tblFleetMix             | MH      | 7.5900e-004 | 0.00         |
| tblFleetMix             | MHD     | 0.02        | 0.02         |

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|                           |                    |             |           |
|---------------------------|--------------------|-------------|-----------|
| tblFleetMix               | MHD                | 0.02        | 0.02      |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00      |
| tblFleetMix               | OBUS               | 2.1180e-003 | 0.00      |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00      |
| tblFleetMix               | SBUS               | 3.0800e-004 | 0.00      |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00      |
| tblFleetMix               | UBUS               | 2.8050e-003 | 0.00      |
| tblGrading                | MaterialExported   | 0.00        | 66,000.00 |
| tblLandUse                | LotAcreage         | 33.29       | 3.14      |
| tblLandUse                | LotAcreage         | 15.75       | 0.00      |
| tblLandUse                | LotAcreage         | 1.84        | 0.00      |
| tblLandUse                | Population         | 0.00        | 4,350.00  |
| tblLandUse                | Population         | 0.00        | 200.00    |
| tblProjectCharacteristics | CO2IntensityFactor | 641.35      | 427       |
| tblProjectCharacteristics | OperationalYear    | 2018        | 2020      |
| tblTripsAndVMT            | VendorTripNumber   | 365.00      | 96.00     |
| tblVehicleTrips           | CC_TL              | 7.30        | 2.20      |
| tblVehicleTrips           | CC_TL              | 7.30        | 4.10      |
| tblVehicleTrips           | CNW_TL             | 7.30        | 5.20      |
| tblVehicleTrips           | CNW_TL             | 7.30        | 5.20      |
| tblVehicleTrips           | CW_TL              | 9.50        | 8.40      |
| tblVehicleTrips           | CW_TL              | 9.50        | 6.30      |
| tblVehicleTrips           | ST_TR              | 2.46        | 1.12      |
| tblVehicleTrips           | ST_TR              | 49.97       | 22.78     |
| tblVehicleTrips           | SU_TR              | 1.05        | 0.48      |
| tblVehicleTrips           | SU_TR              | 25.24       | 11.51     |
| tblVehicleTrips           | WD_TR              | 11.03       | 2.72      |

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|                 |                                       |        |        |
|-----------------|---------------------------------------|--------|--------|
| tblVehicleTrips | WD_TR                                 | 42.70  | 32.01  |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AerobicPercent                        | 87.46  | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCogenCombDigestGasPercent    | 0.00   | 100.00 |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaDigestCombDigestGasPercent         | 100.00 | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | AnaerobicandFacultativeLagoonsPercent | 2.21   | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |
| tblWater        | SepticTankPercent                     | 10.33  | 0.00   |

**2.0 Emissions Summary**

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**2.1 Overall Construction**

**Unmitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.7559        | 8.1798        | 4.9653        | 0.0180        | 2.0280        | 0.2487        | 2.2767        | 0.5103         | 0.2319        | 0.7422        | 0.0000        | 1,674.3074        | 1,674.3074        | 0.1742        | 0.0000        | 1,678.6629        |
| 2019           | 0.6812        | 4.2836        | 5.1005        | 0.0137        | 0.7845        | 0.1733        | 0.9578        | 0.2104         | 0.1628        | 0.3731        | 0.0000        | 1,242.1503        | 1,242.1503        | 0.1105        | 0.0000        | 1,244.9124        |
| 2020           | 5.5233        | 0.2309        | 0.4607        | 1.0600e-003   | 0.0751        | 0.0141        | 0.0892        | 0.0200         | 0.0135        | 0.0335        | 0.0000        | 94.6827           | 94.6827           | 6.9200e-003   | 0.0000        | 94.8558           |
| <b>Maximum</b> | <b>5.5233</b> | <b>8.1798</b> | <b>5.1005</b> | <b>0.0180</b> | <b>2.0280</b> | <b>0.2487</b> | <b>2.2767</b> | <b>0.5103</b>  | <b>0.2319</b> | <b>0.7422</b> | <b>0.0000</b> | <b>1,674.3074</b> | <b>1,674.3074</b> | <b>0.1742</b> | <b>0.0000</b> | <b>1,678.6629</b> |

**Mitigated Construction**

|                | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Year           | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| 2018           | 0.3925        | 4.2647        | 5.1068        | 0.0180        | 2.0280        | 0.0274        | 2.0554        | 0.5103         | 0.0264        | 0.5367        | 0.0000        | 1,674.3069        | 1,674.3069        | 0.1742        | 0.0000        | 1,678.6624        |
| 2019           | 0.4316        | 1.9370        | 5.1540        | 0.0137        | 0.7845        | 0.0192        | 0.8037        | 0.2104         | 0.0184        | 0.2288        | 0.0000        | 1,242.1500        | 1,242.1500        | 0.1105        | 0.0000        | 1,244.9121        |
| 2020           | 5.5010        | 0.0394        | 0.4649        | 1.0600e-003   | 0.0751        | 9.9000e-004   | 0.0761        | 0.0200         | 9.5000e-004   | 0.0209        | 0.0000        | 94.6827           | 94.6827           | 6.9200e-003   | 0.0000        | 94.8557           |
| <b>Maximum</b> | <b>5.5010</b> | <b>4.2647</b> | <b>5.1540</b> | <b>0.0180</b> | <b>2.0280</b> | <b>0.0274</b> | <b>2.0554</b> | <b>0.5103</b>  | <b>0.0264</b> | <b>0.5367</b> | <b>0.0000</b> | <b>1,674.3069</b> | <b>1,674.3069</b> | <b>0.1742</b> | <b>0.0000</b> | <b>1,678.6624</b> |

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|                   | ROG  | NOx   | CO    | SO2  | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4  | N2O  | CO2e |
|-------------------|------|-------|-------|------|---------------|--------------|------------|----------------|---------------|-------------|----------|----------|-----------|------|------|------|
| Percent Reduction | 9.13 | 50.83 | -1.89 | 0.00 | 0.00          | 89.09        | 11.69      | 0.00           | 88.79         | 31.54       | 0.00     | 0.00     | 0.00      | 0.00 | 0.00 | 0.00 |

| Quarter | Start Date | End Date   | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---------|------------|------------|--|--|
| 1       | 1-1-2018   | 3-31-2018  | 3.3074                                       | 1.9597                                     |
| 2       | 4-1-2018   | 6-30-2018  | 2.5705                                       | 1.1994                                     |
| 3       | 7-1-2018   | 9-30-2018  | 1.4801                                       | 0.7077                                     |
| 4       | 10-1-2018  | 12-31-2018 | 1.5098                                       | 0.7375                                     |
| 5       | 1-1-2019   | 3-31-2019  | 1.3471                                       | 0.6760                                     |
| 6       | 4-1-2019   | 6-30-2019  | 1.3364                                       | 0.6579                                     |
| 7       | 7-1-2019   | 9-30-2019  | 1.3511                                       | 0.6651                                     |
| 8       | 10-1-2019  | 12-31-2019 | 0.9214                                       | 0.3672                                     |
| 9       | 1-1-2020   | 3-31-2020  | 2.7986                                       | 2.6762                                     |
| 10      | 4-1-2020   | 6-30-2020  | 2.9522                                       | 2.8660                                     |
|         |            | Highest    | 3.3074                                       | 2.8660                                     |

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**2.2 Overall Operational**

**Unmitigated Operational**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2          | Total CO2          | CH4            | N2O           | CO2e               |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|--------------------|--------------------|----------------|---------------|--------------------|
| Category     | tons/yr       |                |                |               |               |               |               |                |               |               | MT/yr           |                    |                    |                |               |                    |
| Area         | 5.7044        | 2.8000e-004    | 0.0303         | 0.0000        |               | 1.1000e-004   | 1.1000e-004   |                | 1.1000e-004   | 1.1000e-004   | 0.0000          | 0.0586             | 0.0586             | 1.6000e-004    | 0.0000        | 0.0625             |
| Energy       | 0.1538        | 1.3985         | 1.1747         | 8.3900e-003   |               | 0.1063        | 0.1063        |                | 0.1063        | 0.1063        | 0.0000          | 6,188.4927         | 6,188.4927         | 0.3461         | 0.0935        | 6,225.0007         |
| Mobile       | 1.3986        | 7.8438         | 12.5087        | 0.0371        | 2.5607        | 0.0373        | 2.5979        | 0.6856         | 0.0350        | 0.7206        | 0.0000          | 3,416.6785         | 3,416.6785         | 0.1929         | 0.0000        | 3,421.4996         |
| Stationary   | 0.2751        | 1.2303         | 0.7015         | 1.3200e-003   |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000          | 127.6813           | 127.6813           | 0.0179         | 0.0000        | 128.1288           |
| Waste        |               |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 290.7846        | 0.0000             | 290.7846           | 17.1849        | 0.0000        | 720.4064           |
| Water        |               |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 93.2762         | 360.1030           | 453.3791           | 0.3455         | 0.2079        | 523.9725           |
| <b>Total</b> | <b>7.5319</b> | <b>10.4729</b> | <b>14.4153</b> | <b>0.0468</b> | <b>2.5607</b> | <b>0.1841</b> | <b>2.7448</b> | <b>0.6856</b>  | <b>0.1819</b> | <b>0.8674</b> | <b>384.0607</b> | <b>10,093.0140</b> | <b>10,477.0747</b> | <b>18.0874</b> | <b>0.3014</b> | <b>11,019.0705</b> |

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**2.2 Overall Operational**

**Mitigated Operational**

|              | ROG           | NOx            | CO             | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2        | NBio- CO2          | Total CO2          | CH4            | N2O           | CO2e               |
|--------------|---------------|----------------|----------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|-----------------|--------------------|--------------------|----------------|---------------|--------------------|
| Category     | tons/yr       |                |                |               |               |               |               |                |               |               | MT/yr           |                    |                    |                |               |                    |
| Area         | 5.7044        | 2.8000e-004    | 0.0303         | 0.0000        |               | 1.1000e-004   | 1.1000e-004   |                | 1.1000e-004   | 1.1000e-004   | 0.0000          | 0.0586             | 0.0586             | 1.6000e-004    | 0.0000        | 0.0625             |
| Energy       | 0.1538        | 1.3985         | 1.1747         | 8.3900e-003   |               | 0.1063        | 0.1063        |                | 0.1063        | 0.1063        | 0.0000          | 6,188.4927         | 6,188.4927         | 0.3461         | 0.0935        | 6,225.0007         |
| Mobile       | 1.3986        | 7.8438         | 12.5087        | 0.0371        | 2.5607        | 0.0373        | 2.5979        | 0.6856         | 0.0350        | 0.7206        | 0.0000          | 3,416.6785         | 3,416.6785         | 0.1929         | 0.0000        | 3,421.4996         |
| Stationary   | 0.2751        | 1.2303         | 0.7015         | 1.3200e-003   |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000          | 127.6813           | 127.6813           | 0.0179         | 0.0000        | 128.1288           |
| Waste        |               |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 290.7846        | 0.0000             | 290.7846           | 17.1849        | 0.0000        | 720.4064           |
| Water        |               |                |                |               |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 74.6209         | 309.9900           | 384.6109           | 0.2779         | 0.1666        | 441.2145           |
| <b>Total</b> | <b>7.5319</b> | <b>10.4729</b> | <b>14.4153</b> | <b>0.0468</b> | <b>2.5607</b> | <b>0.1841</b> | <b>2.7448</b> | <b>0.6856</b>  | <b>0.1819</b> | <b>0.8674</b> | <b>365.4055</b> | <b>10,042.9010</b> | <b>10,408.3065</b> | <b>18.0198</b> | <b>0.2601</b> | <b>10,936.3126</b> |

|                          | ROG         | NOx         | CO          | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2    | NBio-CO2    | Total CO2   | CH4         | N2O          | CO2e        |
|--------------------------|-------------|-------------|-------------|-------------|---------------|--------------|-------------|----------------|---------------|-------------|-------------|-------------|-------------|-------------|--------------|-------------|
| <b>Percent Reduction</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b> | <b>0.00</b>   | <b>0.00</b>  | <b>0.00</b> | <b>0.00</b>    | <b>0.00</b>   | <b>0.00</b> | <b>4.86</b> | <b>0.50</b> | <b>0.66</b> | <b>0.37</b> | <b>13.70</b> | <b>0.75</b> |

**3.0 Construction Detail**

**Construction Phase**



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| Phase Number | Phase Name                                      | Phase Type            | Start Date | End Date   | Num Days Week | Num Days | Phase Description |
|--------------|---|-----------------------|------------|------------|---------------|----------|-------------------|
| 1            | Demolition                                      | Demolition            | 1/1/2018   | 2/23/2018  | 5             | 40       |                   |
| 2            | Site Preparation                                | Site Preparation      | 2/24/2018  | 3/9/2018   | 5             | 10       |                   |
| 3            | Grading, Excavation, Shoring, and Trenching     | Grading               | 3/10/2018  | 6/29/2018  | 5             | 80       |                   |
| 4            | Building Construction                           | Building Construction | 6/30/2018  | 11/15/2019 | 5             | 360      |                   |
| 5            | Paving  | Paving                | 11/16/2019 | 1/10/2020  | 5             | 40       |                   |
| 6            | Architectural Coatings and General Construction | Architectural Coating | 1/11/2020  | 6/26/2020  | 5             | 120      |                   |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 2,295,000; Non-Residential Outdoor: 0; Striped Parking Area: 42,000 (Architectural Coating – sqft)**

**OffRoad Equipment**

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| Phase Name                                      | Offroad Equipment Type    | Amount | Usage Hours | Horse Power | Load Factor |
|---|---------------------------|--------|-------------|-------------|-------------|
| Demolition                                      | Concrete/Industrial Saws  | 1      | 8.00        | 81          | 0.73        |
| Demolition                                      | Excavators                | 3      | 8.00        | 158         | 0.38        |
| Demolition                                      | Rubber Tired Dozers       | 2      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Rubber Tired Dozers       | 3      | 8.00        | 247         | 0.40        |
| Site Preparation                                | Tractors/Loaders/Backhoes | 4      | 8.00        | 97          | 0.37        |
| Grading, Excavation, Shoring, and Trenching     | Bore/Drill Rigs           | 1      | 8.00        | 221         | 0.50        |
| Grading, Excavation, Shoring, and Trenching     | Cranes                    | 1      | 8.00        | 231         | 0.29        |
| Grading, Excavation, Shoring, and Trenching     | Excavators                | 1      | 8.00        | 158         | 0.38        |
| Grading, Excavation, Shoring, and Trenching     | Graders                   | 1      | 8.00        | 187         | 0.41        |
| Grading, Excavation, Shoring, and Trenching     | Rubber Tired Dozers       | 1      | 8.00        | 247         | 0.40        |
| Grading, Excavation, Shoring, and Trenching     | Tractors/Loaders/Backhoes | 3      | 8.00        | 97          | 0.37        |
| Building Construction                           | Cranes                    | 1      | 7.00        | 231         | 0.29        |
| Building Construction                           | Forklifts                 | 3      | 8.00        | 89          | 0.20        |
| Building Construction                           | Generator Sets            | 1      | 8.00        | 84          | 0.74        |
| Building Construction                           | Tractors/Loaders/Backhoes | 3      | 7.00        | 97          | 0.37        |
| Building Construction                           | Welders                   | 1      | 8.00        | 46          | 0.45        |
| Paving  | Cement and Mortar Mixers  | 2      | 6.00        | 9           | 0.56        |
| Paving  | Pavers                    | 1      | 8.00        | 130         | 0.42        |
| Paving  | Paving Equipment          | 2      | 6.00        | 132         | 0.36        |
| Paving  | Rollers                   | 2      | 6.00        | 80          | 0.38        |
| Paving  | Tractors/Loaders/Backhoes | 1      | 8.00        | 97          | 0.37        |
| Architectural Coatings and General Construction | Air Compressors           | 1      | 6.00        | 78          | 0.48        |
| Architectural Coatings and General Construction | Forklifts                 | 1      | 6.00        | 89          | 0.20        |

**Trips and VMT**

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| Phase Name                                      | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|-------------------------|--------------------|--------------------|---------------------|--------------------|--------------------|---------------------|----------------------|----------------------|-----------------------|
| Demolition                                      | 6                       | 15.00              | 0.00               | 9,816.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Site Preparation                                | 7                       | 18.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Grading, Excavation, Shoring, and Trenching     | 8                       | 20.00              | 0.00               | 8,250.00            | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Building Construction                           | 9                       | 784.00             | 96.00              | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Paving  | 8                       | 20.00              | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |
| Architectural Coatings and General Construction | 2                       | 157.00             | 0.00               | 0.00                | 10.80              | 7.30               | 20.00               | LD_Mix               | HDT_Mix              | HHDT                  |

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

**3.2 Demolition - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |               |               |               |                    | 1.0621        | 0.0000        | 1.0621        | 0.1608         | 0.0000        | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 0.0744        | 0.7665        | 0.4461        | 7.8000e-004        |               | 0.0388        | 0.0388        |                | 0.0361        | 0.0361        | 0.0000        | 70.2482        | 70.2482        | 0.0194        | 0.0000        | 70.7320        |
| <b>Total</b>  | <b>0.0744</b> | <b>0.7665</b> | <b>0.4461</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>0.0388</b> | <b>1.1009</b> | <b>0.1608</b>  | <b>0.0361</b> | <b>0.1969</b> | <b>0.0000</b> | <b>70.2482</b> | <b>70.2482</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7320</b> |

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**3.2 Demolition - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4           | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |               |               |                |
| Fugitive Dust |                    |               |               |                    | 1.0621        | 0.0000             | 1.0621        | 0.1608         | 0.0000             | 0.1608        | 0.0000        | 0.0000         | 0.0000         | 0.0000        | 0.0000        | 0.0000         |
| Off-Road      | 9.2500e-003        | 0.0401        | 0.4656        | 7.8000e-004        |               | 1.2300e-003        | 1.2300e-003   |                | 1.2300e-003        | 1.2300e-003   | 0.0000        | 70.2481        | 70.2481        | 0.0194        | 0.0000        | 70.7319        |
| <b>Total</b>  | <b>9.2500e-003</b> | <b>0.0401</b> | <b>0.4656</b> | <b>7.8000e-004</b> | <b>1.0621</b> | <b>1.2300e-003</b> | <b>1.0634</b> | <b>0.1608</b>  | <b>1.2300e-003</b> | <b>0.1620</b> | <b>0.0000</b> | <b>70.2481</b> | <b>70.2481</b> | <b>0.0194</b> | <b>0.0000</b> | <b>70.7319</b> |

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**3.2 Demolition - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0467        | 1.6041        | 0.2657        | 3.9900e-003        | 0.0831        | 6.0600e-003        | 0.0892        | 0.0229         | 5.8000e-003        | 0.0287        | 0.0000        | 383.5836        | 383.5836        | 0.0202        | 0.0000        | 384.0891        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 1.2600e-003   | 9.9000e-004   | 9.8500e-003   | 2.0000e-005        | 2.3700e-003   | 2.0000e-005        | 2.3900e-003   | 6.3000e-004    | 2.0000e-005        | 6.5000e-004   | 0.0000        | 2.2414          | 2.2414          | 7.0000e-005   | 0.0000        | 2.2432          |
| <b>Total</b> | <b>0.0480</b> | <b>1.6051</b> | <b>0.2755</b> | <b>4.0100e-003</b> | <b>0.0855</b> | <b>6.0800e-003</b> | <b>0.0916</b> | <b>0.0235</b>  | <b>5.8200e-003</b> | <b>0.0293</b> | <b>0.0000</b> | <b>385.8250</b> | <b>385.8250</b> | <b>0.0203</b> | <b>0.0000</b> | <b>386.3322</b> |

**3.3 Site Preparation - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |               |               |               |                    | 0.0903        | 0.0000        | 0.0903        | 0.0497         | 0.0000        | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 0.0228        | 0.2410        | 0.1124        | 1.9000e-004        |               | 0.0129        | 0.0129        |                | 0.0119        | 0.0119        | 0.0000        | 17.3800        | 17.3800        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>0.0228</b> | <b>0.2410</b> | <b>0.1124</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>0.0129</b> | <b>0.1032</b> | <b>0.0497</b>  | <b>0.0119</b> | <b>0.0615</b> | <b>0.0000</b> | <b>17.3800</b> | <b>17.3800</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**Mitigated Construction On-Site**

|               | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|---------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category      | tons/yr            |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Fugitive Dust |                    |               |               |                    | 0.0903        | 0.0000             | 0.0903        | 0.0497         | 0.0000             | 0.0497        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road      | 2.3300e-003        | 0.0101        | 0.1043        | 1.9000e-004        |               | 3.1000e-004        | 3.1000e-004   |                | 3.1000e-004        | 3.1000e-004   | 0.0000        | 17.3799        | 17.3799        | 5.4100e-003        | 0.0000        | 17.5152        |
| <b>Total</b>  | <b>2.3300e-003</b> | <b>0.0101</b> | <b>0.1043</b> | <b>1.9000e-004</b> | <b>0.0903</b> | <b>3.1000e-004</b> | <b>0.0906</b> | <b>0.0497</b>  | <b>3.1000e-004</b> | <b>0.0500</b> | <b>0.0000</b> | <b>17.3799</b> | <b>17.3799</b> | <b>5.4100e-003</b> | <b>0.0000</b> | <b>17.5152</b> |

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**3.3 Site Preparation - 2018**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 3.8000e-004        | 3.0000e-004        | 2.9600e-003        | 1.0000e-005        | 7.1000e-004        | 1.0000e-005        | 7.2000e-004        | 1.9000e-004        | 0.0000        | 1.9000e-004        | 0.0000        | 0.6724        | 0.6724        | 2.0000e-005        | 0.0000        | 0.6730        |
| <b>Total</b> | <b>3.8000e-004</b> | <b>3.0000e-004</b> | <b>2.9600e-003</b> | <b>1.0000e-005</b> | <b>7.1000e-004</b> | <b>1.0000e-005</b> | <b>7.2000e-004</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>1.9000e-004</b> | <b>0.0000</b> | <b>0.6724</b> | <b>0.6724</b> | <b>2.0000e-005</b> | <b>0.0000</b> | <b>0.6730</b> |

**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000        | 0.2658        | 0.1353         | 0.0000        | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.1458        | 1.6676        | 0.8476        | 1.7900e-003        |               | 0.0786        | 0.0786        |                | 0.0723        | 0.0723        | 0.0000        | 163.7640        | 163.7640        | 0.0510        | 0.0000        | 165.0386        |
| <b>Total</b>  | <b>0.1458</b> | <b>1.6676</b> | <b>0.8476</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>0.0786</b> | <b>0.3444</b> | <b>0.1353</b>  | <b>0.0723</b> | <b>0.2076</b> | <b>0.0000</b> | <b>163.7640</b> | <b>163.7640</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0386</b> |

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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**Mitigated Construction On-Site**

|               | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|---------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category      | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Fugitive Dust |               |               |               |                    | 0.2658        | 0.0000             | 0.2658        | 0.1353         | 0.0000             | 0.1353        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Off-Road      | 0.0220        | 0.0955        | 0.9856        | 1.7900e-003        |               | 2.9400e-003        | 2.9400e-003   |                | 2.9400e-003        | 2.9400e-003   | 0.0000        | 163.7638        | 163.7638        | 0.0510        | 0.0000        | 165.0384        |
| <b>Total</b>  | <b>0.0220</b> | <b>0.0955</b> | <b>0.9856</b> | <b>1.7900e-003</b> | <b>0.2658</b> | <b>2.9400e-003</b> | <b>0.2688</b> | <b>0.1353</b>  | <b>2.9400e-003</b> | <b>0.1382</b> | <b>0.0000</b> | <b>163.7638</b> | <b>163.7638</b> | <b>0.0510</b> | <b>0.0000</b> | <b>165.0384</b> |



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**3.4 Grading, Excavation, Shoring, and Trenching - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0393        | 1.3482        | 0.2233        | 3.3500e-003        | 0.0699        | 5.0900e-003        | 0.0750        | 0.0192         | 4.8700e-003        | 0.0241        | 0.0000        | 322.3884        | 322.3884        | 0.0170        | 0.0000        | 322.8133        |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Worker       | 3.3500e-003   | 2.6300e-003   | 0.0263        | 7.0000e-005        | 6.3300e-003   | 5.0000e-005        | 6.3700e-003   | 1.6800e-003    | 4.0000e-005        | 1.7300e-003   | 0.0000        | 5.9771          | 5.9771          | 1.9000e-004   | 0.0000        | 5.9818          |
| <b>Total</b> | <b>0.0426</b> | <b>1.3508</b> | <b>0.2495</b> | <b>3.4200e-003</b> | <b>0.0762</b> | <b>5.1400e-003</b> | <b>0.0813</b> | <b>0.0209</b>  | <b>4.9100e-003</b> | <b>0.0258</b> | <b>0.0000</b> | <b>328.3655</b> | <b>328.3655</b> | <b>0.0172</b> | <b>0.0000</b> | <b>328.7950</b> |

**3.5 Building Construction - 2018**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.1755        | 1.5321        | 1.1515        | 1.7600e-003        |               | 0.0982        | 0.0982        |                | 0.0924        | 0.0924        | 0.0000        | 155.7375        | 155.7375        | 0.0382        | 0.0000        | 156.6914        |
| <b>Total</b> | <b>0.1755</b> | <b>1.5321</b> | <b>1.1515</b> | <b>1.7600e-003</b> |               | <b>0.0982</b> | <b>0.0982</b> |                | <b>0.0924</b> | <b>0.0924</b> | <b>0.0000</b> | <b>155.7375</b> | <b>155.7375</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6914</b> |

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**3.5 Building Construction - 2018**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003        | 0.0473        | 0.0120         | 5.7900e-003        | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.2152        | 0.1690        | 1.6861        | 4.2500e-003        | 0.4060        | 2.9600e-003        | 0.4090        | 0.1080         | 2.7300e-003        | 0.1107        | 0.0000        | 383.6705        | 383.6705        | 0.0120        | 0.0000        | 383.9713        |
| <b>Total</b> | <b>0.2465</b> | <b>1.0166</b> | <b>1.8797</b> | <b>6.0100e-003</b> | <b>0.4473</b> | <b>9.0100e-003</b> | <b>0.4563</b> | <b>0.1200</b>  | <b>8.5200e-003</b> | <b>0.1285</b> | <b>0.0000</b> | <b>552.3148</b> | <b>552.3148</b> | <b>0.0228</b> | <b>0.0000</b> | <b>552.8855</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0215        | 0.1464        | 1.1436        | 1.7600e-003        |               | 2.6700e-003        | 2.6700e-003        |                | 2.6700e-003        | 2.6700e-003        | 0.0000        | 155.7374        | 155.7374        | 0.0382        | 0.0000        | 156.6912        |
| <b>Total</b> | <b>0.0215</b> | <b>0.1464</b> | <b>1.1436</b> | <b>1.7600e-003</b> |               | <b>2.6700e-003</b> | <b>2.6700e-003</b> |                | <b>2.6700e-003</b> | <b>2.6700e-003</b> | <b>0.0000</b> | <b>155.7374</b> | <b>155.7374</b> | <b>0.0382</b> | <b>0.0000</b> | <b>156.6912</b> |

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**3.5 Building Construction - 2018**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0312        | 0.8476        | 0.1936        | 1.7600e-003        | 0.0413        | 6.0500e-003        | 0.0473        | 0.0120         | 5.7900e-003        | 0.0177        | 0.0000        | 168.6444        | 168.6444        | 0.0108        | 0.0000        | 168.9142        |
| Worker       | 0.2152        | 0.1690        | 1.6861        | 4.2500e-003        | 0.4060        | 2.9600e-003        | 0.4090        | 0.1080         | 2.7300e-003        | 0.1107        | 0.0000        | 383.6705        | 383.6705        | 0.0120        | 0.0000        | 383.9713        |
| <b>Total</b> | <b>0.2465</b> | <b>1.0166</b> | <b>1.8797</b> | <b>6.0100e-003</b> | <b>0.4473</b> | <b>9.0100e-003</b> | <b>0.4563</b> | <b>0.1200</b>  | <b>8.5200e-003</b> | <b>0.1285</b> | <b>0.0000</b> | <b>552.3148</b> | <b>552.3148</b> | <b>0.0228</b> | <b>0.0000</b> | <b>552.8855</b> |

**3.5 Building Construction - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.2704        | 2.4135        | 1.9653        | 3.0800e-003        |               | 0.1477        | 0.1477        |                | 0.1389        | 0.1389        | 0.0000        | 269.1943        | 269.1943        | 0.0656        | 0.0000        | 270.8338        |
| <b>Total</b> | <b>0.2704</b> | <b>2.4135</b> | <b>1.9653</b> | <b>3.0800e-003</b> |               | <b>0.1477</b> | <b>0.1477</b> |                | <b>0.1389</b> | <b>0.1389</b> | <b>0.0000</b> | <b>269.1943</b> | <b>269.1943</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8338</b> |

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**3.5 Building Construction - 2019**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993        | 292.7993        | 0.0180        | 0.0000        | 293.2504        |
| Worker       | 0.3398        | 0.2592        | 2.6180        | 7.2100e-003   | 0.7098        | 5.0600e-003   | 0.7148        | 0.1888         | 4.6600e-003   | 0.1935        | 0.0000        | 651.0800        | 651.0800        | 0.0186        | 0.0000        | 651.5442        |
| <b>Total</b> | <b>0.3893</b> | <b>1.6649</b> | <b>2.9289</b> | <b>0.0103</b> | <b>0.7820</b> | <b>0.0140</b> | <b>0.7960</b> | <b>0.2097</b>  | <b>0.0133</b> | <b>0.2230</b> | <b>0.0000</b> | <b>943.8794</b> | <b>943.8794</b> | <b>0.0366</b> | <b>0.0000</b> | <b>944.7946</b> |

**Mitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                 |                 |               |               |                 |
| Off-Road     | 0.0375        | 0.2559        | 1.9992        | 3.0800e-003        |               | 4.6700e-003        | 4.6700e-003        |                | 4.6700e-003        | 4.6700e-003        | 0.0000        | 269.1940        | 269.1940        | 0.0656        | 0.0000        | 270.8334        |
| <b>Total</b> | <b>0.0375</b> | <b>0.2559</b> | <b>1.9992</b> | <b>3.0800e-003</b> |               | <b>4.6700e-003</b> | <b>4.6700e-003</b> |                | <b>4.6700e-003</b> | <b>4.6700e-003</b> | <b>0.0000</b> | <b>269.1940</b> | <b>269.1940</b> | <b>0.0656</b> | <b>0.0000</b> | <b>270.8334</b> |

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**3.5 Building Construction - 2019**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2           | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Category     | tons/yr       |               |               |               |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000        | 0.0000        | 0.0000        | 0.0000          | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| Vendor       | 0.0495        | 1.4058        | 0.3110        | 3.0600e-003   | 0.0722        | 8.9800e-003   | 0.0812        | 0.0209         | 8.5900e-003   | 0.0295        | 0.0000        | 292.7993        | 292.7993        | 0.0180        | 0.0000        | 293.2504        |
| Worker       | 0.3398        | 0.2592        | 2.6180        | 7.2100e-003   | 0.7098        | 5.0600e-003   | 0.7148        | 0.1888         | 4.6600e-003   | 0.1935        | 0.0000        | 651.0800        | 651.0800        | 0.0186        | 0.0000        | 651.5442        |
| <b>Total</b> | <b>0.3893</b> | <b>1.6649</b> | <b>2.9289</b> | <b>0.0103</b> | <b>0.7820</b> | <b>0.0140</b> | <b>0.7960</b> | <b>0.2097</b>  | <b>0.0133</b> | <b>0.2230</b> | <b>0.0000</b> | <b>943.8794</b> | <b>943.8794</b> | <b>0.0366</b> | <b>0.0000</b> | <b>944.7946</b> |

**3.6 Paving - 2019**

**Unmitigated Construction On-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Off-Road     | 0.0203        | 0.2042        | 0.1970        | 3.0000e-004        |               | 0.0115        | 0.0115        |                | 0.0106        | 0.0106        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>0.0203</b> | <b>0.2042</b> | <b>0.1970</b> | <b>3.0000e-004</b> |               | <b>0.0115</b> | <b>0.0115</b> |                | <b>0.0106</b> | <b>0.0106</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Off-Road     | 3.5100e-003        | 0.0152        | 0.2165        | 3.0000e-004        |               | 4.7000e-004        | 4.7000e-004        |                | 4.7000e-004        | 4.7000e-004        | 0.0000        | 26.7557        | 26.7557        | 8.2300e-003        | 0.0000        | 26.9615        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| <b>Total</b> | <b>3.5100e-003</b> | <b>0.0152</b> | <b>0.2165</b> | <b>3.0000e-004</b> |               | <b>4.7000e-004</b> | <b>4.7000e-004</b> |                | <b>4.7000e-004</b> | <b>4.7000e-004</b> | <b>0.0000</b> | <b>26.7557</b> | <b>26.7557</b> | <b>8.2300e-003</b> | <b>0.0000</b> | <b>26.9615</b> |

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**3.6 Paving - 2019**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10       | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |                    |                    |                    |                    |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 1.2100e-003        | 9.2000e-004        | 9.3300e-003        | 3.0000e-005        | 2.5300e-003        | 2.0000e-005        | 2.5500e-003        | 6.7000e-004        | 2.0000e-005        | 6.9000e-004        | 0.0000        | 2.3209        | 2.3209        | 7.0000e-005        | 0.0000        | 2.3226        |
| <b>Total</b> | <b>1.2100e-003</b> | <b>9.2000e-004</b> | <b>9.3300e-003</b> | <b>3.0000e-005</b> | <b>2.5300e-003</b> | <b>2.0000e-005</b> | <b>2.5500e-003</b> | <b>6.7000e-004</b> | <b>2.0000e-005</b> | <b>6.9000e-004</b> | <b>0.0000</b> | <b>2.3209</b> | <b>2.3209</b> | <b>7.0000e-005</b> | <b>0.0000</b> | <b>2.3226</b> |

**3.6 Paving - 2020**

**Unmitigated Construction On-Site**

|              | ROG                | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 4.7300e-003        | 0.0472        | 0.0491        | 8.0000e-005        |               | 2.6000e-003        | 2.6000e-003        |                | 2.4000e-003        | 2.4000e-003        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6003        |
| Paving       | 0.0000             |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>4.7300e-003</b> | <b>0.0472</b> | <b>0.0491</b> | <b>8.0000e-005</b> |               | <b>2.6000e-003</b> | <b>2.6000e-003</b> |                | <b>2.4000e-003</b> | <b>2.4000e-003</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6003</b> |

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**3.6 Paving - 2020**

**Unmitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**Mitigated Construction On-Site**

|              | ROG                | NOx                | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |               |                    |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Off-Road     | 8.8000e-004        | 3.8000e-003        | 0.0541        | 8.0000e-005        |               | 1.2000e-004        | 1.2000e-004        |                | 1.2000e-004        | 1.2000e-004        | 0.0000        | 6.5488        | 6.5488        | 2.0600e-003        | 0.0000        | 6.6002        |
| Paving       | 0.0000             |                    |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| <b>Total</b> | <b>8.8000e-004</b> | <b>3.8000e-003</b> | <b>0.0541</b> | <b>8.0000e-005</b> |               | <b>1.2000e-004</b> | <b>1.2000e-004</b> |                | <b>1.2000e-004</b> | <b>1.2000e-004</b> | <b>0.0000</b> | <b>6.5488</b> | <b>6.5488</b> | <b>2.0600e-003</b> | <b>0.0000</b> | <b>6.6002</b> |



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**3.6 Paving - 2020**

**Mitigated Construction Off-Site**

|              | ROG                | NOx                | CO                 | SO2                | Fugitive PM10      | Exhaust PM10  | PM10 Total         | Fugitive PM2.5     | Exhaust PM2.5 | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|--------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------|--------------------|--------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| Category     | tons/yr            |                    |                    |                    |                    |               |                    |                    |               |                    | MT/yr         |               |               |                    |               |               |
| Hauling      | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Vendor       | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Worker       | 2.8000e-004        | 2.0000e-004        | 2.0900e-003        | 1.0000e-005        | 6.3000e-004        | 0.0000        | 6.4000e-004        | 1.7000e-004        | 0.0000        | 1.7000e-004        | 0.0000        | 0.5623        | 0.5623        | 1.0000e-005        | 0.0000        | 0.5627        |
| <b>Total</b> | <b>2.8000e-004</b> | <b>2.0000e-004</b> | <b>2.0900e-003</b> | <b>1.0000e-005</b> | <b>6.3000e-004</b> | <b>0.0000</b> | <b>6.4000e-004</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>1.7000e-004</b> | <b>0.0000</b> | <b>0.5623</b> | <b>0.5623</b> | <b>1.0000e-005</b> | <b>0.0000</b> | <b>0.5627</b> |

**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 5.4647        |               |               |                    |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 0.0210        | 0.1594        | 0.1630        | 2.5000e-004        |               | 0.0110        | 0.0110        |                | 0.0107        | 0.0107        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4412        |
| <b>Total</b>    | <b>5.4857</b> | <b>0.1594</b> | <b>0.1630</b> | <b>2.5000e-004</b> |               | <b>0.0110</b> | <b>0.0110</b> |                | <b>0.0107</b> | <b>0.0107</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4412</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Unmitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Worker       | 0.0326        | 0.0240        | 0.2465        | 7.3000e-004        | 0.0745        | 5.2000e-004        | 0.0750        | 0.0198         | 4.8000e-004        | 0.0203        | 0.0000        | 66.2090        | 66.2090        | 1.7100e-003        | 0.0000        | 66.2517        |
| <b>Total</b> | <b>0.0326</b> | <b>0.0240</b> | <b>0.2465</b> | <b>7.3000e-004</b> | <b>0.0745</b> | <b>5.2000e-004</b> | <b>0.0750</b> | <b>0.0198</b>  | <b>4.8000e-004</b> | <b>0.0203</b> | <b>0.0000</b> | <b>66.2090</b> | <b>66.2090</b> | <b>1.7100e-003</b> | <b>0.0000</b> | <b>66.2517</b> |

**Mitigated Construction On-Site**

|                 | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|-----------------|---------------|---------------|---------------|--------------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category        | tons/yr       |               |               |                    |               |                    |                    |                |                    |                    | MT/yr         |                |                |                    |               |                |
| Archit. Coating | 5.4647        |               |               |                    |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Off-Road        | 2.6300e-003   | 0.0114        | 0.1622        | 2.5000e-004        |               | 3.5000e-004        | 3.5000e-004        |                | 3.5000e-004        | 3.5000e-004        | 0.0000        | 21.3626        | 21.3626        | 3.1400e-003        | 0.0000        | 21.4411        |
| <b>Total</b>    | <b>5.4673</b> | <b>0.0114</b> | <b>0.1622</b> | <b>2.5000e-004</b> |               | <b>3.5000e-004</b> | <b>3.5000e-004</b> |                | <b>3.5000e-004</b> | <b>3.5000e-004</b> | <b>0.0000</b> | <b>21.3626</b> | <b>21.3626</b> | <b>3.1400e-003</b> | <b>0.0000</b> | <b>21.4411</b> |

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**3.7 Architectural Coatings and General Construction - 2020**

**Mitigated Construction Off-Site**

|              | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10       | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total   | Bio- CO2      | NBio- CO2      | Total CO2      | CH4                | N2O           | CO2e           |
|--------------|---------------|---------------|---------------|--------------------|---------------|--------------------|---------------|----------------|--------------------|---------------|---------------|----------------|----------------|--------------------|---------------|----------------|
| Category     | tons/yr       |               |               |                    |               |                    |               |                |                    |               | MT/yr         |                |                |                    |               |                |
| Hauling      | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Vendor       | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000             | 0.0000        | 0.0000         | 0.0000             | 0.0000        | 0.0000        | 0.0000         | 0.0000         | 0.0000             | 0.0000        | 0.0000         |
| Worker       | 0.0326        | 0.0240        | 0.2465        | 7.3000e-004        | 0.0745        | 5.2000e-004        | 0.0750        | 0.0198         | 4.8000e-004        | 0.0203        | 0.0000        | 66.2090        | 66.2090        | 1.7100e-003        | 0.0000        | 66.2517        |
| <b>Total</b> | <b>0.0326</b> | <b>0.0240</b> | <b>0.2465</b> | <b>7.3000e-004</b> | <b>0.0745</b> | <b>5.2000e-004</b> | <b>0.0750</b> | <b>0.0198</b>  | <b>4.8000e-004</b> | <b>0.0203</b> | <b>0.0000</b> | <b>66.2090</b> | <b>66.2090</b> | <b>1.7100e-003</b> | <b>0.0000</b> | <b>66.2517</b> |

**4.0 Operational Detail - Mobile**

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**4.1 Mitigation Measures Mobile**

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|             | ROG     | NOx    | CO      | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------|---------|--------|---------|--------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Category    | tons/yr |        |         |        |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Mitigated   | 1.3986  | 7.8438 | 12.5087 | 0.0371 | 2.5607        | 0.0373       | 2.5979     | 0.6856         | 0.0350        | 0.7206      | 0.0000   | 3,416.6785 | 3,416.6785 | 0.1929 | 0.0000 | 3,421.4996 |
| Unmitigated | 1.3986  | 7.8438 | 12.5087 | 0.0371 | 2.5607        | 0.0373       | 2.5979     | 0.6856         | 0.0350        | 0.7206      | 0.0000   | 3,416.6785 | 3,416.6785 | 0.1929 | 0.0000 | 3,421.4996 |

4.2 Trip Summary Information

| Land Use                       | Average Daily Trip Rate |          |          | Unmitigated | Mitigated  |
|--------------------------------|-------------------------|----------|----------|-------------|------------|
|                                | Weekday                 | Saturday | Sunday   | Annual VMT  | Annual VMT |
| Enclosed Parking with Elevator | 0.00                    | 0.00     | 0.00     |             |            |
| General Office Building        | 3,944.00                | 1,624.00 | 696.00   | 4,516,793   | 4,516,793  |
| Regional Shopping Center       | 2,560.80                | 1,822.40 | 920.80   | 2,376,790   | 2,376,790  |
| Total                          | 6,504.80                | 3,446.40 | 1,616.80 | 6,893,583   | 6,893,583  |

4.3 Trip Type Information

| Land Use                       | Miles      |            |             | Trip %     |            |             | Trip Purpose % |          |         |
|--------------------------------|------------|------------|-------------|------------|------------|-------------|----------------|----------|---------|
|                                | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary        | Diverted | Pass-by |
| Enclosed Parking with Elevator | 9.50       | 7.30       | 7.30        | 0.00       | 0.00       | 0.00        | 0              | 0        | 0       |
| General Office Building        | 8.40       | 2.20       | 5.20        | 33.00      | 48.00      | 19.00       | 77             | 19       | 4       |
| Regional Shopping Center       | 6.30       | 4.10       | 5.20        | 16.30      | 64.70      | 19.00       | 54             | 35       | 11      |

4.4 Fleet Mix

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| Land Use                       | LDA      | LDT1     | LDT2     | MDV      | LHD1     | LHD2     | MHD      | HHD      | OBUS     | UBUS     | MCY      | SBUS     | MH       |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| General Office Building        | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |
| Enclosed Parking with Elevator | 0.558186 | 0.040947 | 0.190770 | 0.110456 | 0.017401 | 0.005228 | 0.022658 | 0.042795 | 0.002118 | 0.002805 | 0.005569 | 0.000308 | 0.000759 |
| Regional Shopping Center       | 0.561550 | 0.041194 | 0.191920 | 0.111122 | 0.017506 | 0.005260 | 0.022795 | 0.043053 | 0.000000 | 0.000000 | 0.005603 | 0.000000 | 0.000000 |

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

|                         | ROG     | NOx    | CO     | SO2         | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2  | Total CO2  | CH4    | N2O    | CO2e       |
|-------------------------|---------|--------|--------|-------------|---------------|--------------|------------|----------------|---------------|-------------|----------|------------|------------|--------|--------|------------|
| Category                | tons/yr |        |        |             |               |              |            |                |               |             | MT/yr    |            |            |        |        |            |
| Electricity Mitigated   |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 4,666.0980 | 4,666.0980 | 0.3169 | 0.0656 | 4,693.5591 |
| Electricity Unmitigated |         |        |        |             |               | 0.0000       | 0.0000     |                | 0.0000        | 0.0000      | 0.0000   | 4,666.0980 | 4,666.0980 | 0.3169 | 0.0656 | 4,693.5591 |
| NaturalGas Mitigated    | 0.1538  | 1.3985 | 1.1747 | 8.3900e-003 |               | 0.1063       | 0.1063     |                | 0.1063        | 0.1063      | 0.0000   | 1,522.3947 | 1,522.3947 | 0.0292 | 0.0279 | 1,531.4416 |
| NaturalGas Unmitigated  | 0.1538  | 1.3985 | 1.1747 | 8.3900e-003 |               | 0.1063       | 0.1063     |                | 0.1063        | 0.1063      | 0.0000   | 1,522.3947 | 1,522.3947 | 0.0292 | 0.0279 | 1,531.4416 |

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**5.2 Energy by Land Use - NaturalGas**

**Unmitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 2.8159e+007    | 0.1518        | 1.3803        | 1.1595        | 8.2800e-003        |               | 0.1049        | 0.1049        |                | 0.1049        | 0.1049        | 0.0000        | 1,502.6715        | 1,502.6715        | 0.0288        | 0.0276        | 1,511.6011        |
| Regional Shopping Center       | 369600         | 1.9900e-003   | 0.0181        | 0.0152        | 1.1000e-004        |               | 1.3800e-003   | 1.3800e-003   |                | 1.3800e-003   | 1.3800e-003   | 0.0000        | 19.7233           | 19.7233           | 3.8000e-004   | 3.6000e-004   | 19.8405           |
| <b>Total</b>                   |                | <b>0.1538</b> | <b>1.3985</b> | <b>1.1747</b> | <b>8.3900e-003</b> |               | <b>0.1063</b> | <b>0.1063</b> |                | <b>0.1063</b> | <b>0.1063</b> | <b>0.0000</b> | <b>1,522.3947</b> | <b>1,522.3947</b> | <b>0.0292</b> | <b>0.0279</b> | <b>1,531.4416</b> |

**Mitigated**

|                                | NaturalGas Use | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2         | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|----------------|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-------------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kBTU/yr        | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                   |                   |               |               |                   |
| Enclosed Parking with Elevator | 0              | 0.0000        | 0.0000        | 0.0000        | 0.0000             |               | 0.0000        | 0.0000        |                | 0.0000        | 0.0000        | 0.0000        | 0.0000            | 0.0000            | 0.0000        | 0.0000        | 0.0000            |
| General Office Building        | 2.8159e+007    | 0.1518        | 1.3803        | 1.1595        | 8.2800e-003        |               | 0.1049        | 0.1049        |                | 0.1049        | 0.1049        | 0.0000        | 1,502.6715        | 1,502.6715        | 0.0288        | 0.0276        | 1,511.6011        |
| Regional Shopping Center       | 369600         | 1.9900e-003   | 0.0181        | 0.0152        | 1.1000e-004        |               | 1.3800e-003   | 1.3800e-003   |                | 1.3800e-003   | 1.3800e-003   | 0.0000        | 19.7233           | 19.7233           | 3.8000e-004   | 3.6000e-004   | 19.8405           |
| <b>Total</b>                   |                | <b>0.1538</b> | <b>1.3985</b> | <b>1.1747</b> | <b>8.3900e-003</b> |               | <b>0.1063</b> | <b>0.1063</b> |                | <b>0.1063</b> | <b>0.1063</b> | <b>0.0000</b> | <b>1,522.3947</b> | <b>1,522.3947</b> | <b>0.0292</b> | <b>0.0279</b> | <b>1,531.4416</b> |

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**5.3 Energy by Land Use - Electricity**

**Unmitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Enclosed Parking with Elevator | 4.718e+006      | 913.8008          | 0.0621        | 0.0128        | 919.1788          |
| General Office Building        | 1.85165e+007    | 3,586.3487        | 0.2436        | 0.0504        | 3,607.4553        |
| Regional Shopping Center       | 856800          | 165.9484          | 0.0113        | 2.3300e-003   | 166.9251          |
| <b>Total</b>                   |                 | <b>4,666.0980</b> | <b>0.3169</b> | <b>0.0656</b> | <b>4,693.5591</b> |

**Mitigated**

|                                | Electricity Use | Total CO2         | CH4           | N2O           | CO2e              |
|--------------------------------|-----------------|-------------------|---------------|---------------|-------------------|
| Land Use                       | kWh/yr          | MT/yr             |               |               |                   |
| Enclosed Parking with Elevator | 4.718e+006      | 913.8008          | 0.0621        | 0.0128        | 919.1788          |
| General Office Building        | 1.85165e+007    | 3,586.3487        | 0.2436        | 0.0504        | 3,607.4553        |
| Regional Shopping Center       | 856800          | 165.9484          | 0.0113        | 2.3300e-003   | 166.9251          |
| <b>Total</b>                   |                 | <b>4,666.0980</b> | <b>0.3169</b> | <b>0.0656</b> | <b>4,693.5591</b> |

**6.0 Area Detail**

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**6.1 Mitigation Measures Area**

|             | ROG     | NOx         | CO     | SO2    | Fugitive PM10 | Exhaust PM10 | PM10 Total  | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4         | N2O    | CO2e   |
|-------------|---------|-------------|--------|--------|---------------|--------------|-------------|----------------|---------------|-------------|----------|-----------|-----------|-------------|--------|--------|
| Category    | tons/yr |             |        |        |               |              |             |                |               |             | MT/yr    |           |           |             |        |        |
| Mitigated   | 5.7044  | 2.8000e-004 | 0.0303 | 0.0000 |               | 1.1000e-004  | 1.1000e-004 |                | 1.1000e-004   | 1.1000e-004 | 0.0000   | 0.0586    | 0.0586    | 1.6000e-004 | 0.0000 | 0.0625 |
| Unmitigated | 5.7044  | 2.8000e-004 | 0.0303 | 0.0000 |               | 1.1000e-004  | 1.1000e-004 |                | 1.1000e-004   | 1.1000e-004 | 0.0000   | 0.0586    | 0.0586    | 1.6000e-004 | 0.0000 | 0.0625 |

**6.2 Area by SubCategory**

Unmitigated

|                       | ROG           | NOx                | CO            | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr       |                    |               |               |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.5465        |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 5.1551        |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 2.8500e-003   | 2.8000e-004        | 0.0303        | 0.0000        |               | 1.1000e-004        | 1.1000e-004        |                | 1.1000e-004        | 1.1000e-004        | 0.0000        | 0.0586        | 0.0586        | 1.6000e-004        | 0.0000        | 0.0625        |
| <b>Total</b>          | <b>5.7044</b> | <b>2.8000e-004</b> | <b>0.0303</b> | <b>0.0000</b> |               | <b>1.1000e-004</b> | <b>1.1000e-004</b> |                | <b>1.1000e-004</b> | <b>1.1000e-004</b> | <b>0.0000</b> | <b>0.0586</b> | <b>0.0586</b> | <b>1.6000e-004</b> | <b>0.0000</b> | <b>0.0625</b> |



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**6.2 Area by SubCategory**

**Mitigated**

|                       | ROG           | NOx                | CO            | SO2           | Fugitive PM10 | Exhaust PM10       | PM10 Total         | Fugitive PM2.5 | Exhaust PM2.5      | PM2.5 Total        | Bio- CO2      | NBio- CO2     | Total CO2     | CH4                | N2O           | CO2e          |
|-----------------------|---------------|--------------------|---------------|---------------|---------------|--------------------|--------------------|----------------|--------------------|--------------------|---------------|---------------|---------------|--------------------|---------------|---------------|
| SubCategory           | tons/yr       |                    |               |               |               |                    |                    |                |                    |                    | MT/yr         |               |               |                    |               |               |
| Architectural Coating | 0.5465        |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Consumer Products     | 5.1551        |                    |               |               |               | 0.0000             | 0.0000             |                | 0.0000             | 0.0000             | 0.0000        | 0.0000        | 0.0000        | 0.0000             | 0.0000        | 0.0000        |
| Landscaping           | 2.8500e-003   | 2.8000e-004        | 0.0303        | 0.0000        |               | 1.1000e-004        | 1.1000e-004        |                | 1.1000e-004        | 1.1000e-004        | 0.0000        | 0.0586        | 0.0586        | 1.6000e-004        | 0.0000        | 0.0625        |
| <b>Total</b>          | <b>5.7044</b> | <b>2.8000e-004</b> | <b>0.0303</b> | <b>0.0000</b> |               | <b>1.1000e-004</b> | <b>1.1000e-004</b> |                | <b>1.1000e-004</b> | <b>1.1000e-004</b> | <b>0.0000</b> | <b>0.0586</b> | <b>0.0586</b> | <b>1.6000e-004</b> | <b>0.0000</b> | <b>0.0625</b> |

**7.0 Water Detail**

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**7.1 Mitigation Measures Water**

Apply Water Conservation Strategy

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|             | Total CO2 | CH4    | N2O    | CO2e     |
|-------------|-----------|--------|--------|----------|
| Category    | MT/yr     |        |        |          |
| Mitigated   | 384.6109  | 0.2779 | 0.1666 | 441.2145 |
| Unmitigated | 453.3791  | 0.3455 | 0.2079 | 523.9725 |

**7.2 Water by Land Use**

**Unmitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 257.714 / 157.954  | 443.1886        | 0.3377        | 0.2032        | 512.1952        |
| Regional Shopping Center       | 5.9258 / 3.63194   | 10.1906         | 7.7700e-003   | 4.6700e-003   | 11.7773         |
| <b>Total</b>                   |                    | <b>453.3791</b> | <b>0.3455</b> | <b>0.2079</b> | <b>523.9725</b> |

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**7.2 Water by Land Use****Mitigated**

|                                | Indoor/Outdoor Use | Total CO2       | CH4           | N2O           | CO2e            |
|--------------------------------|--------------------|-----------------|---------------|---------------|-----------------|
| Land Use                       | Mgal               | MT/yr           |               |               |                 |
| Enclosed Parking with Elevator | 0 / 0              | 0.0000          | 0.0000        | 0.0000        | 0.0000          |
| General Office Building        | 206.171 / 157.954  | 375.9660        | 0.2716        | 0.1629        | 431.2974        |
| Regional Shopping Center       | 4.74064 / 3.63194  | 8.6449          | 6.2500e-003   | 3.7500e-003   | 9.9171          |
| <b>Total</b>                   |                    | <b>384.6109</b> | <b>0.2779</b> | <b>0.1666</b> | <b>441.2145</b> |

**8.0 Waste Detail****8.1 Mitigation Measures Waste**

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**Category/Year**

|             | Total CO2 | CH4     | N2O    | CO2e     |
|-------------|-----------|---------|--------|----------|
|             | MT/yr     |         |        |          |
| Mitigated   | 290.7846  | 17.1849 | 0.0000 | 720.4064 |
| Unmitigated | 290.7846  | 17.1849 | 0.0000 | 720.4064 |

**8.2 Waste by Land Use**

**Unmitigated**

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| General Office Building        | 1348.5         | 273.7333        | 16.1772        | 0.0000        | 678.1627        |
| Regional Shopping Center       | 84             | 17.0512         | 1.0077         | 0.0000        | 42.2437         |
| <b>Total</b>                   |                | <b>290.7846</b> | <b>17.1849</b> | <b>0.0000</b> | <b>720.4064</b> |

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**8.2 Waste by Land Use**

Mitigated

|                                | Waste Disposed | Total CO2       | CH4            | N2O           | CO2e            |
|--------------------------------|----------------|-----------------|----------------|---------------|-----------------|
| Land Use                       | tons           | MT/yr           |                |               |                 |
| Enclosed Parking with Elevator | 0              | 0.0000          | 0.0000         | 0.0000        | 0.0000          |
| General Office Building        | 1348.5         | 273.7333        | 16.1772        | 0.0000        | 678.1627        |
| Regional Shopping Center       | 84             | 17.0512         | 1.0077         | 0.0000        | 42.2437         |
| <b>Total</b>                   |                | <b>290.7846</b> | <b>17.1849</b> | <b>0.0000</b> | <b>720.4064</b> |

**9.0 Operational Offroad**

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|----------------|--------|-----------|-----------|-------------|-------------|-----------|
|----------------|--------|-----------|-----------|-------------|-------------|-----------|

**10.0 Stationary Equipment**

Fire Pumps and Emergency Generators

| Equipment Type      | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---------------------|--------|-----------|------------|-------------|-------------|-----------|
| Emergency Generator | 2      | 1         | 50         | 3353        | 0.73        | Diesel    |

Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|----------------|--------|----------------|-----------------|---------------|-----------|
|----------------|--------|----------------|-----------------|---------------|-----------|

User Defined Equipment

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|                |        |
|----------------|--------|
| Equipment Type | Number |
|----------------|--------|

**10.1 Stationary Sources**

**Unmitigated/Mitigated**

|  | ROG           | NOx           | CO            | SO2                | Fugitive PM10 | Exhaust PM10  | PM10 Total    | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total   | Bio- CO2      | NBio- CO2       | Total CO2       | CH4           | N2O           | CO2e            |
|--|---------------|---------------|---------------|--------------------|---------------|---------------|---------------|----------------|---------------|---------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|
| Equipment Type                               | tons/yr       |               |               |                    |               |               |               |                |               |               | MT/yr         |                 |                 |               |               |                 |
| Emergency Generator - Diesel (750 - 9999 HP) | 0.2751        | 1.2303        | 0.7015        | 1.3200e-003        |               | 0.0405        | 0.0405        |                | 0.0405        | 0.0405        | 0.0000        | 127.6813        | 127.6813        | 0.0179        | 0.0000        | 128.1288        |
| <b>Total</b>                                 | <b>0.2751</b> | <b>1.2303</b> | <b>0.7015</b> | <b>1.3200e-003</b> |               | <b>0.0405</b> | <b>0.0405</b> |                | <b>0.0405</b> | <b>0.0405</b> | <b>0.0000</b> | <b>127.6813</b> | <b>127.6813</b> | <b>0.0179</b> | <b>0.0000</b> | <b>128.1288</b> |

**11.0 Vegetation**

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## Summary of ISCST3 Model Parameters, Assumptions, and Results for DPM and PM<sub>2.5</sub> Emissions during Construction

| ISCST3 Model Parameters and Assumptions                              |                                  |  |  |                       |
|--|----------------------------------|--|--|-----------------------|
| Source Type  | Units                            | Value                                  | Notes  |                       |
| <b>Volume Source: Off-Road Equipment Exhaust (without SCA-AIR-1)</b> |                                  |  |  |                       |
| Hours/Work Day   | hours/day                        | 8                                      |  |                       |
| DPM Emission Rate  | gram/second                      | 0.01946                                | Exhaust PM <sub>10</sub> from off-road equipment |                       |
| Number of Sources  | count                            | 66                                     | SMAQMD, 2015                                     |                       |
| Emission Rate/Source   | gram/second                      | 0.00029                                |  |                       |
| Release Height   | meters                           | 5.0                                    | SMAQMD, 2015                                     |                       |
| Length of Side   | meters                           | 10.0                                   | SMAQMD, 2015                                     |                       |
| Initial Lateral Dimension  | meters                           | 2.3                                    | ISCST3 Calculator                                |                       |
| Initial Vertical Dimension   | meters                           | 1.0                                    | SMAQMD, 2015                                     |                       |
| <b>Volume Source: Off-Road Equipment Exhaust (with SCA-AIR-1)</b>    |                                  |  |  |                       |
| Hours/Work Day   | hours/day                        | 8                                      |  |                       |
| DPM Emission Rate  | gram/second                      | 0.00062                                | Exhaust PM <sub>10</sub> from off-road equipment |                       |
| Number of Sources  | count                            | 66                                     | SMAQMD, 2015                                     |                       |
| Emission Rate/Source   | gram/second                      | 0.0000094                              |  |                       |
| Release Height   | meters                           | 5.0                                    | SMAQMD, 2015                                     |                       |
| Length of Side   | meters                           | 10.0                                   | SMAQMD, 2015                                     |                       |
| Initial Lateral Dimension  | meters                           | 2.3                                    | ISCST3 Calculator                                |                       |
| Initial Vertical Dimension   | meters                           | 1.0                                    | SMAQMD, 2015                                     |                       |
| <b>Line-Area Source: On-Road Vehicle Exhaust</b>                     |                                  |  |  |                       |
| Hours/Work Day   | hours/day                        | 8                                      |  |                       |
| DPM Emission Rate  | gram/second                      | 0.00014                                | Exhaust PM <sub>10</sub> from off-road vehicles  |                       |
| Number of Sources  | count                            | 4                                      | Based on maximum 1 width:10 length ratio         |                       |
| Length of Side   | meters                           | 9.0                                    | ISCST3 Calculator                                |                       |
| Release Height   | meters                           | 3.0                                    | BAAQMD, 2012                                     |                       |
| Initial Vertical Dimension   | meters                           | 2.8                                    | ISCST3 Calculator                                |                       |
| ISCST3 Model Results   |                                  |  |  |                       |
| Location Type  | Emissions Source                 | Pollutant                              | Annual Average Concentration                     | Notes                 |
| Residential (420 W Grand)  | Construction (without SCA-AIR-1) | DPM (µg/m <sup>3</sup> )               | 0.0560   | Second story receptor |
|  |                                  | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 0.0524   | Second story receptor |
|  | Construction (with SCA-AIR-1)    | DPM (µg/m <sup>3</sup> )               | 0.0028   | Second story receptor |
|  |                                  | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 0.0027   | Second story receptor |
| Pre-school (460 W Grand)   | Construction (without SCA-AIR-1) | DPM (µg/m <sup>3</sup> )               | 0.0601   | Ground level receptor |
|  |                                  | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 0.0562   | Ground level receptor |
|  | Construction (with SCA-AIR-1)    | DPM (µg/m <sup>3</sup> )               | 0.0036   | Ground level receptor |
|  |                                  | PM <sub>2.5</sub> (µg/m <sup>3</sup> ) | 0.0035   | Ground level receptor |

Notes:

DPM = diesel particulate matter

PM<sub>10</sub> = particulate matter with aerodynamic resistance diameters equal to or less than 10 microns

PM<sub>2.5</sub> = particulate matter with aerodynamic resistance diameters equal to or less than 2.5 microns

µg/m<sup>3</sup> = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2015. *Guide to Air Quality Assessment in Sacramento*

### Summary DPM Emissions from On-Road Vehicles Accessing the Project Site

| Phase Name                                      | Worker Vehicles |                   | Vendor Trucks |                   | Haul Trucks |                   | Total Emissions (grams) | Emission Rate (grams/day) |
|---|-----------------|-------------------|---------------|-------------------|-------------|-------------------|-------------------------|---------------------------|
|   | Total Trips     | Emissions (grams) | Total Trips   | Emissions (grams) | Total Trips | Emissions (grams) |                         |                           |
| Demolition                                      | 600             | 1.8               | 0             | 0                 | 9,816       | 237.4             | 239.2                   | 0.368                     |
| Site Preparation                                | 180             | 0.5               | 0             | 0                 | 0           | 0                 | 0.5                     | 0.001                     |
| Grading, Excavation, Shoring, and Trenching     | 1,600           | 4.7               | 0             | 0                 | 8,250       | 199.0             | 203.7                   | 0.313                     |
| Building Construction                           | 549,000         | 1,621.9           | 34,560.0      | 609.5             | 0           | 0                 | 2,231.5                 | 3.433                     |
| Paving  | 800             | 2.4               | 0             | 0                 | 0           | 0                 | 2.4                     | 0.004                     |
| Architectural Coatings and General Construction | 36,600          | 108.1             | 0             | 0                 | 0           | 0                 | 108.1                   | 0.166                     |
| <b>Grand Total</b>                              |                 |                   |               |                   |             |                   | <b>2,785.4</b>          | <b>4.3</b>                |

Notes:

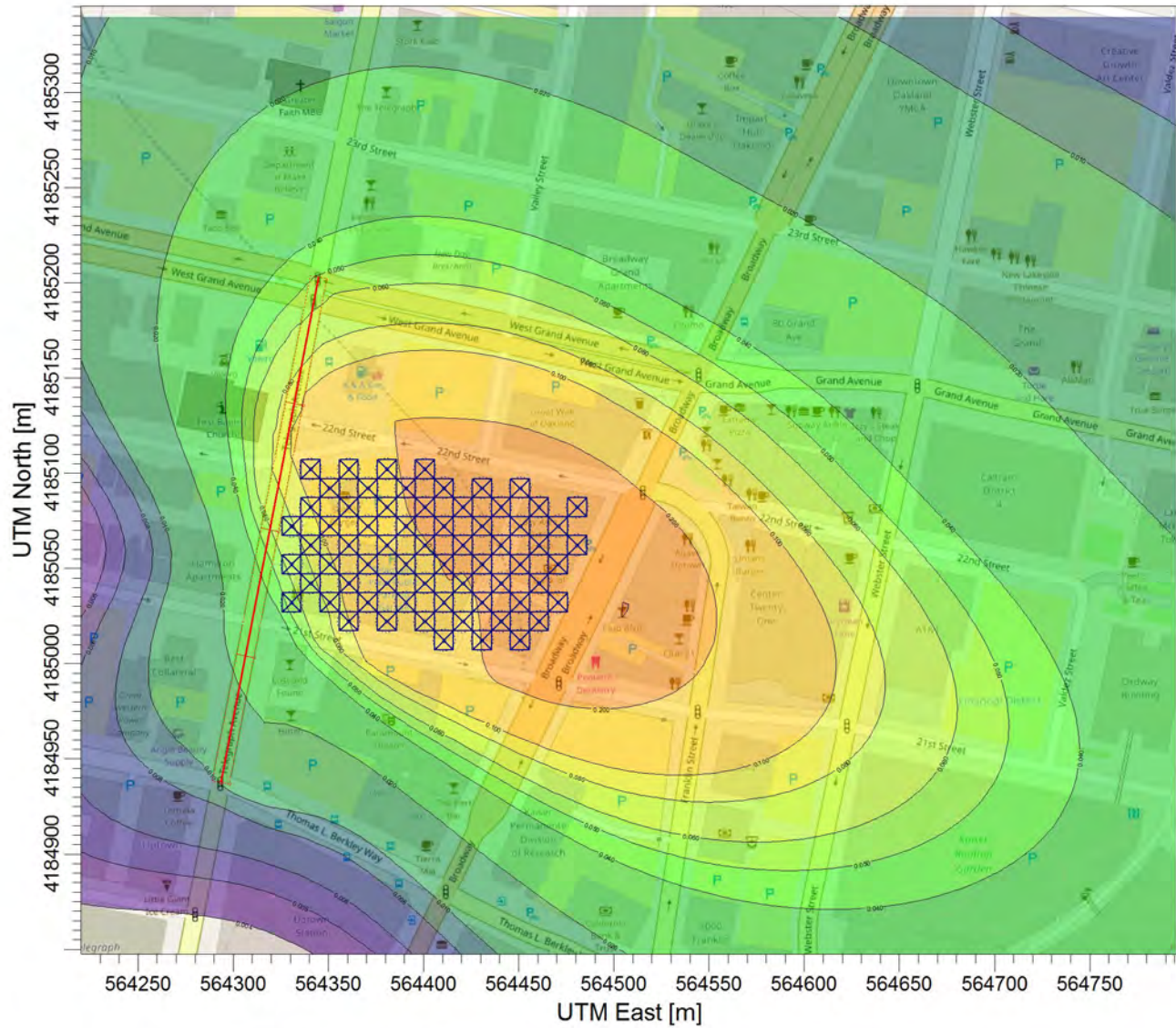
Emission estimates include vehicles traveling, idling, and stop/starting along a 0.16-mile segment of Telegraph Avenue adjacent to the project site.

Emission rates are based on total emissions averaged over 650 work days.



PROJECT TITLE:

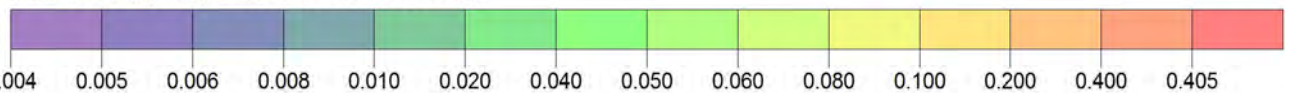
C:\tao\_work\_local\16211 UPP 2100 Telegraph\AERMOD\MaxOffice\_v2\MaxOf



PLOT FILE OF ANNUAL VALUES FOR SOURCE GROUP: ALL

ug/m<sup>3</sup>

Max: 0.405 [ug/m<sup>3</sup>] at (564506.69, 4185029.50)



|   |                                       |   |              |
|---|---------------------------------------|---|--------------|
| COMMENTS:<br>Maximum Residential Scenario | SOURCES:<br><b>67</b>                 | COMPANY NAME:<br><b>BASELINE Environmental Consulting</b> |              |
|   | RECEPTORS:<br><b>3447</b>             |   |              |
|   | OUTPUT TYPE:<br><b>Concentration</b>  | SCALE:<br>1:3,621   |              |
|   | MAX:<br><b>0.405 ug/m<sup>3</sup></b> | DATE:<br><b>5/22/2017</b>                                 | PROJECT NO.: |

**Summary of Health Risk Assessment for DPM Emissions during Construction**

| Health Risk Assessment Parameters and Results |                           |               |                  |           |   |
|---|---------------------------|---------------|------------------|-----------|---|
| DPM Emissions without SCA-AIR-1               |                           |               |                  |           |   |
| Inhalation Cancer Risk Assessment for DPM     | Units                     | Age Group     |                  |           | Notes   |
|   |                           | 3rd Trimester | 0-2 Years        | 2-9 Years |   |
| DPM Concentration (C)                         | µg/m <sup>3</sup>         | 0.056         | 0.056            | 0.056     | ISCST3 Annual Average                           |
| Daily Breathing Rate (DBR)                    | L/kg-day                  | 361           | 1090             | 861       | 95th percentile (OEHHA, 2015)                   |
| Inhalation absorption factor (A)              | unitless                  | 1.0           | 1.0              | 1.0       | OEHHA, 2015                                     |
| Exposure Frequency (EF)                       | unitless                  | 0.96          | 0.96             | 0.96      | 350 days/365 days in a year (OEHHA, 2015)       |
| Dose Conversion Factor (CF <sub>D</sub> )     | mg-m <sup>3</sup> /µg-L   | 0.000001      | 0.000001         | 0.000001  | Conversion of µg to mg and L to m <sup>3</sup>  |
| Dose  | mg/kg/day                 | 0.000019      | 0.000059         | 0.000046  | C*DBR*A*EF*CF <sub>D</sub> (OEHHA, 2015)        |
| Cancer Potency Factor (CPF)                   | (mg/kg/day) <sup>-1</sup> | 1.1           | 1.1              | 1.1       | OEHHA, 2015                                     |
| Age Sensitivity Factor (ASF)                  | unitless                  | 10            | 10               | 3         | OEHHA, 2015                                     |
| Annual Exposure Duration (ED)                 | years                     | 0.25          | 2.00             | 0.25      | Based on total construction period of 30 months |
| Averaging Time (AT)                           | years                     | 70            | 70               | 70        | 70 years for residents (OEHHA, 2015)            |
| Fraction of time at home (FAH)                | unitless                  | 0.85          | 0.85             | 0.72      | OEHHA, 2015                                     |
| Cancer Risk Conversion Factor (CF)            | m <sup>3</sup> /L         | 1000000       | 1000000          | 1000000   | Chances per million (OEHHA, 2015)               |
| Cancer Risk                                   | per million               | 0.65          | 15.64            | 0.39      | D*CPF*ASF*ED/AT*FAH*CF (OEHHA, 2015)            |
| Total Cancer Risk                             | per million               | 16.7          |                  |           | At MEIR location                                |
| Hazard Index for DPM                          | Units                     | Value         | Notes            |           |   |
| Chronic REL                                   | µg/m <sup>3</sup>         | 5.0           | OEHHA, 2015      |           |   |
| Chronic Hazard Index for DPM                  | unitless                  | 0.01          | At MEIR location |           |   |
| DPM Emissions with SCA-AIR-1                  |                           |               |                  |           |   |
| Inhalation Cancer Risk Assessment for DPM     | Units                     | Age Group     |                  |           | Notes   |
|   |                           | 3rd Trimester | 0-2 Years        | 2-9 Years |   |
| DPM Concentration (C)                         | µg/m <sup>3</sup>         | 0.003         | 0.003            | 0.003     | ISCST3 Annual Average                           |
| Daily Breathing Rate (DBR)                    | L/kg-day                  | 361           | 1090             | 861       | 95th percentile (OEHHA, 2015)                   |
| Inhalation absorption factor (A)              | unitless                  | 1.0           | 1.0              | 1.0       | OEHHA, 2015                                     |
| Exposure Frequency (EF)                       | unitless                  | 0.96          | 0.96             | 0.96      | 350 days/365 days in a year (OEHHA, 2015)       |
| Dose Conversion Factor (CF <sub>D</sub> )     | mg-m <sup>3</sup> /µg-L   | 0.000001      | 0.000001         | 0.000001  | Conversion of µg to mg and L to m <sup>3</sup>  |
| Dose  | mg/kg/day                 | 0.000001      | 0.000003         | 0.000002  | C*DBR*A*EF*CF <sub>D</sub> (OEHHA, 2015)        |
| Cancer Potency Factor (CPF)                   | (mg/kg/day) <sup>-1</sup> | 1.1           | 1.1              | 1.1       | OEHHA, 2015                                     |
| Age Sensitivity Factor (ASF)                  | unitless                  | 10            | 10               | 3         | OEHHA, 2015                                     |
| Annual Exposure Duration (ED)                 | years                     | 0.25          | 2.00             | 0.25      | Based on total construction period of 30 months |
| Averaging Time (AT)                           | years                     | 70            | 70               | 70        | 70 years for residents (OEHHA, 2015)            |
| Fraction of time at home (FAH)                | unitless                  | 0.85          | 0.85             | 0.72      | OEHHA, 2015                                     |
| Cancer Risk Conversion Factor (CF)            | m <sup>3</sup> /L         | 1000000       | 1000000          | 1000000   | Chances per million (OEHHA, 2015)               |
| Cancer Risk                                   | per million               | 0.03          | 0.78             | 0.02      | D*CPF*ASF*ED/AT*FAH*CF (OEHHA, 2015)            |
| Total Cancer Risk                             | per million               | 0.8           |                  |           | At MEIR location                                |
| Hazard Index for DPM                          | Units                     | Value         | Notes            |           |   |
| Chronic REL                                   | µg/m <sup>3</sup>         | 5.0           | OEHHA, 2015      |           |   |
| Chronic Hazard Index for DPM                  | unitless                  | 0.0006        | At MEIR location |           |   |

Notes:

DPM = diesel particulate matter

REL = reference exposure level

µg/m<sup>3</sup> = micrograms per cubic meter

L/kg-day = liters per kilogram-day

m<sup>3</sup>/L = cubic meters per liter

(mg/kg/day)<sup>-1</sup> = 1/milligrams per kilograms per day

MEIR = maximum exposed individual resident

Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. February.

**Summary of Health Risk Assessment for DPM Emissions during Construction**

| Health Risk Assessment Parameters and Results |                           |              |                  |
|---|---------------------------|--------------|------------------|
| <b>DPM Emissions without SCA-AIR-1</b>        |                           |              |                  |
| Inhalation Cancer Risk Assessment for DPM     | Units                     | Age Group    |                  |
|   |                           | 2-9 Years    |                  |
| Notes   |                           |              |                  |
| DPM Concentration (C)                         | µg/m <sup>3</sup>         | 0.060        |                  |
| Worker Adjustment Factor (WAF)                | unitless                  | 4.2          |                  |
| Daily Breathing Rate (DBR)                    | L/kg-8 Hr                 | 640          |                  |
| Inhalation absorption factor (A)              | unitless                  | 1.0          |                  |
| Exposure Frequency (EF)                       | unitless                  | 0.68         |                  |
| Dose Conversion Factor (CF <sub>D</sub> )     | mg-m <sup>3</sup> /µg-L   | 0.000001     |                  |
| Dose  | mg/kg/day                 | 0.000110     |                  |
| Cancer Potency Factor (CPF)                   | (mg/kg/day) <sup>-1</sup> | 1.1          |                  |
| Age Sensitivity Factor (ASF)                  | unitless                  | 3            |                  |
| Annual Exposure Duration (ED)                 | years                     | 2.50         |                  |
| Averaging Time (AT)                           | years                     | 70           |                  |
| Cancer Risk Conversion Factor (CF)            | m <sup>3</sup> /L         | 1000000      |                  |
| Cancer Risk                                   | per million               | 12.9         |                  |
| <b>Hazard Index for DPM</b>                   | <b>Units</b>              | <b>Value</b> | <b>Notes</b>     |
| Chronic REL                                   | µg/m <sup>3</sup>         | 5.0          | OEHHA, 2015      |
| Chronic Hazard Index for DPM                  | unitless                  | 0.01         | At MEIR location |
| <b>DPM Emissions with SCA-AIR-1</b>           |                           |              |                  |
| Inhalation Cancer Risk Assessment for DPM     | Units                     | Age Group    |                  |
|   |                           | 2-9 Years    |                  |
| Notes   |                           |              |                  |
| DPM Concentration (C)                         | µg/m <sup>3</sup>         | 0.004        |                  |
| Adjustment factor                             | unitless                  | 4.2          |                  |
| Daily Breathing Rate (DBR)                    | L/kg-day                  | 640          |                  |
| Inhalation absorption factor (A)              | unitless                  | 1.0          |                  |
| Exposure Frequency (EF)                       | unitless                  | 0.68         |                  |
| Dose Conversion Factor (CF <sub>D</sub> )     | mg-m <sup>3</sup> /µg-L   | 0.000001     |                  |
| Dose  | mg/kg/day                 | 0.000007     |                  |
| Cancer Potency Factor (CPF)                   | (mg/kg/day) <sup>-1</sup> | 1.1          |                  |
| Age Sensitivity Factor (ASF)                  | unitless                  | 3            |                  |
| Annual Exposure Duration (ED)                 | years                     | 2.50         |                  |
| Averaging Time (AT)                           | years                     | 70           |                  |
| Cancer Risk Conversion Factor (CF)            | m <sup>3</sup> /L         | 1000000      |                  |
| Cancer Risk                                   | per million               | 0.79         |                  |
| <b>Hazard Index for DPM</b>                   | <b>Units</b>              | <b>Value</b> | <b>Notes</b>     |
| Chronic REL                                   | µg/m <sup>3</sup>         | 5.0          | OEHHA, 2015      |
| Chronic Hazard Index for DPM                  | unitless                  | 0.0007       | At MEIR location |

Notes:

DPM = diesel particulate matter

REL = reference exposure level

µg/m<sup>3</sup> = micrograms per cubic meter

L/kg-day = liters per kilogram-day

m<sup>3</sup>/L = cubic meters per liter

(mg/kg/day)<sup>-1</sup> = 1/milligrams per kilograms per day

MEIR = maximum exposed individual resident

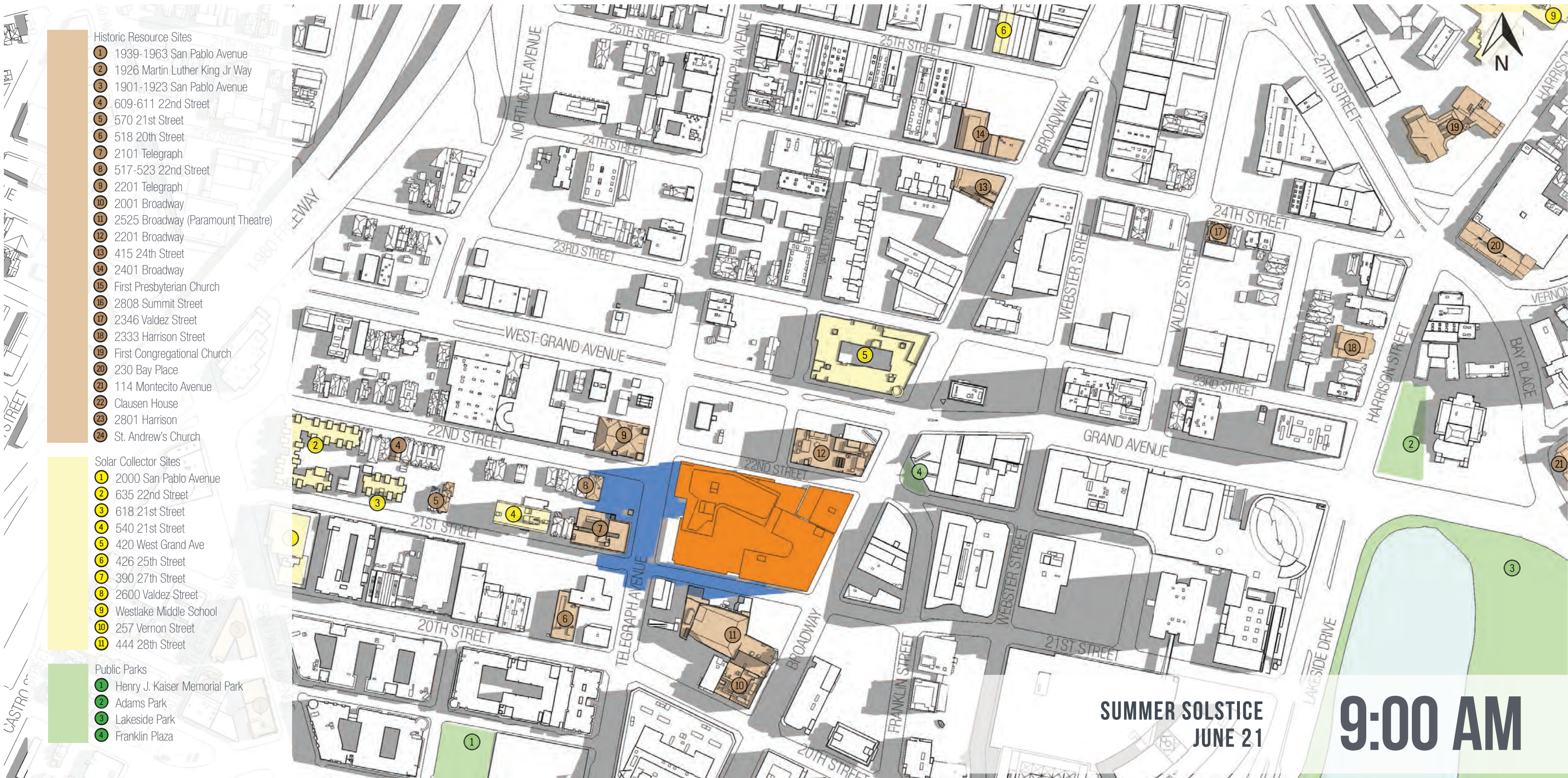
Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. February.



## **APPENDIX E: Shade and Shadow and Wind Study**







**Historic Resource Sites**

- 1 1939-1963 San Pablo Avenue
- 2 1926 Martin Luther King Jr Way
- 3 1901-1923 San Pablo Avenue
- 4 609-611 22nd Street
- 5 570 21st Street
- 6 518 20th Street
- 7 2101 Telegraph
- 8 517-523 22nd Street
- 9 2201 Telegraph
- 10 2001 Broadway
- 11 2525 Broadway (Paramount Theatre)
- 12 2201 Broadway
- 13 415 24th Street
- 14 2401 Broadway
- 15 First Presbyterian Church
- 16 2808 Summit Street
- 17 2346 Valdez Street
- 18 2333 Harrison Street
- 19 First Congregational Church
- 20 230 Bay Place
- 21 114 Montecito Avenue
- 22 Clausen House
- 23 2801 Harrison
- 24 St. Andrew's Church

**Solar Collector Sites**

- 1 2000 San Pablo Avenue
- 2 635 22nd Street
- 3 618 21st Street
- 4 540 21st Street
- 5 420 West Grand Ave
- 6 426 25th Street
- 7 390 27th Street
- 8 2600 Valdez Street
- 9 Westlake Middle School
- 10 257 Vernon Street
- 11 444 28th Street

**Public Parks**

- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
- 3 Lakeside Park
- 4 Franklin Plaza

**SUMMER SOLSTICE  
JUNE 21**

**9:00 AM**



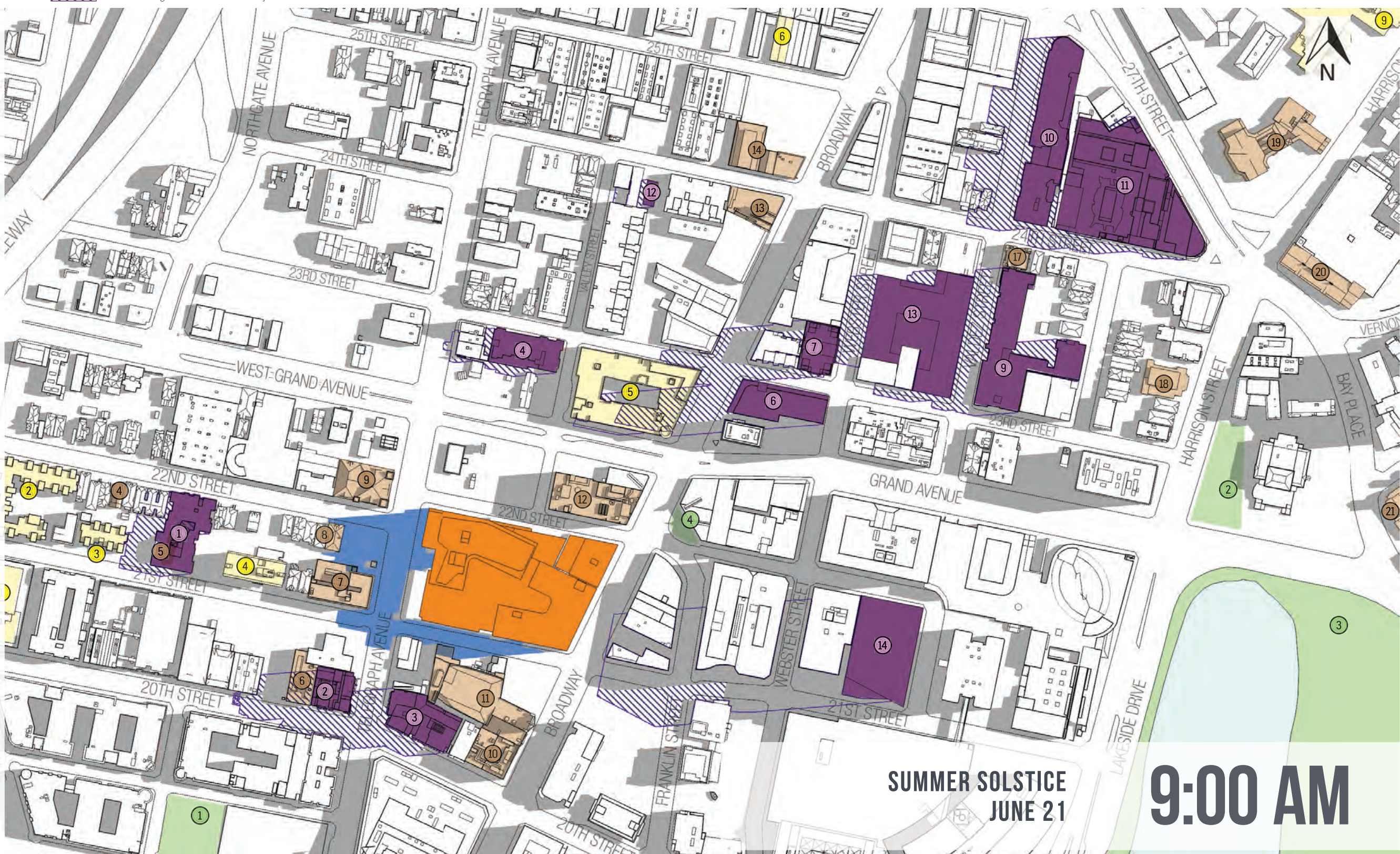
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# A.1-1C

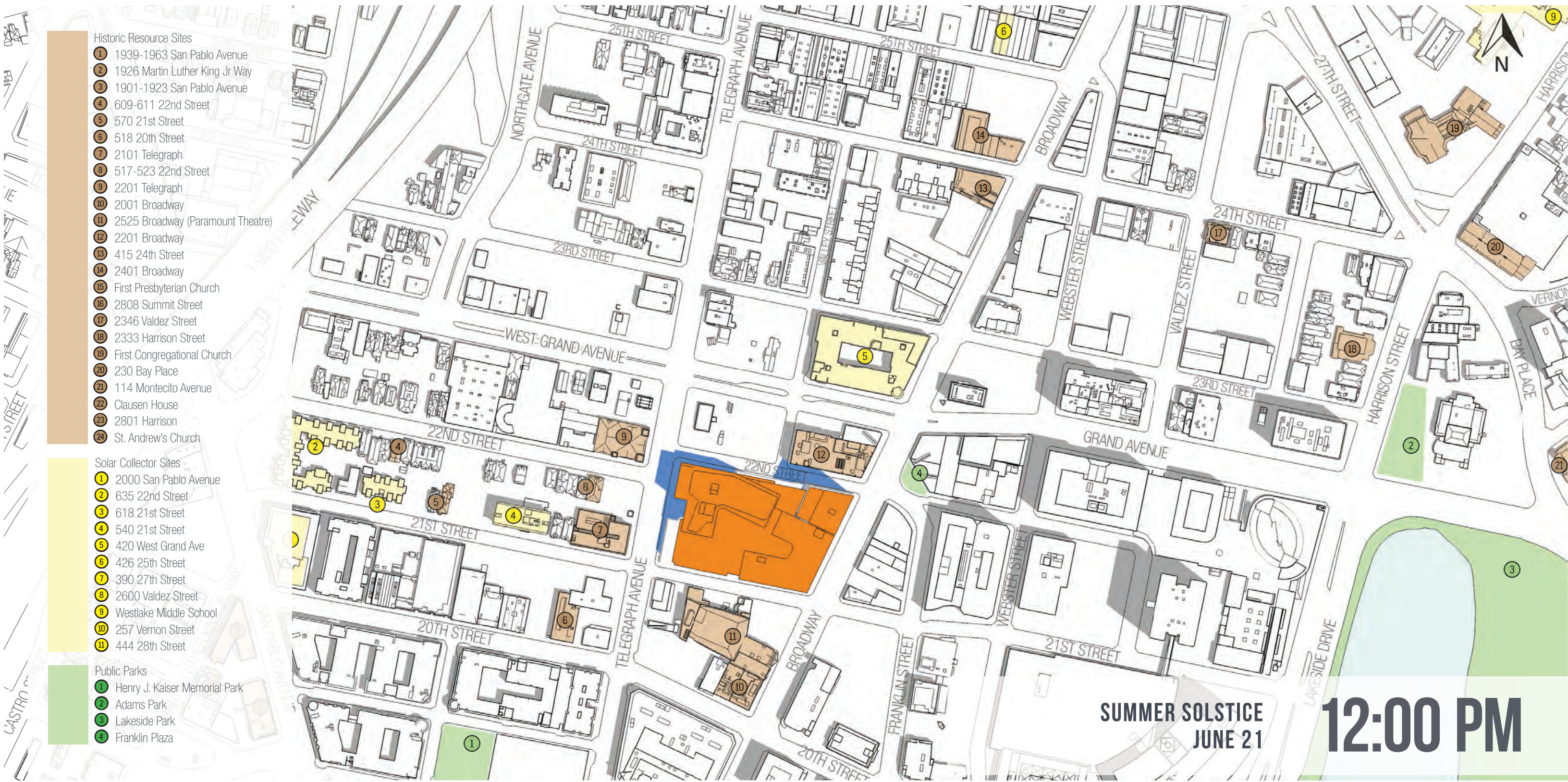
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- 10 257 Vernon Street
- 11 444 28th Street
- Public Parks**
- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
- 3 Lakeside Park
- 4 Franklin Plaza
- Cumulative Projects**
- 1 585 22nd Street
- 2 2015 Telegraph
- 3 2016 Telegraph
- 4 459 23rd Street
- 5 1900 Broadway
- 6 2270 Broadway
- 7 2305 Webster
- 8 2630 Broadway
- 9 2302 Valdez Street
- 10 2400 Valdez Street
- 11 24th & Harrison
- 12 2345 Broadway
- 13 2315 Valdez Street
- 14 2 Kaiser Plaza



SUMMER SOLSTICE  
JUNE 21

# 9:00 AM





- Historic Resource Sites**
- 1 1939-1963 San Pablo Avenue
  - 2 1926 Martin Luther King Jr Way
  - 3 1901-1923 San Pablo Avenue
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  - 11 444 28th Street

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  - 2 Adams Park
  - 3 Lakeside Park
  - 4 Franklin Plaza

**SUMMER SOLSTICE  
JUNE 21**

# 12:00 PM



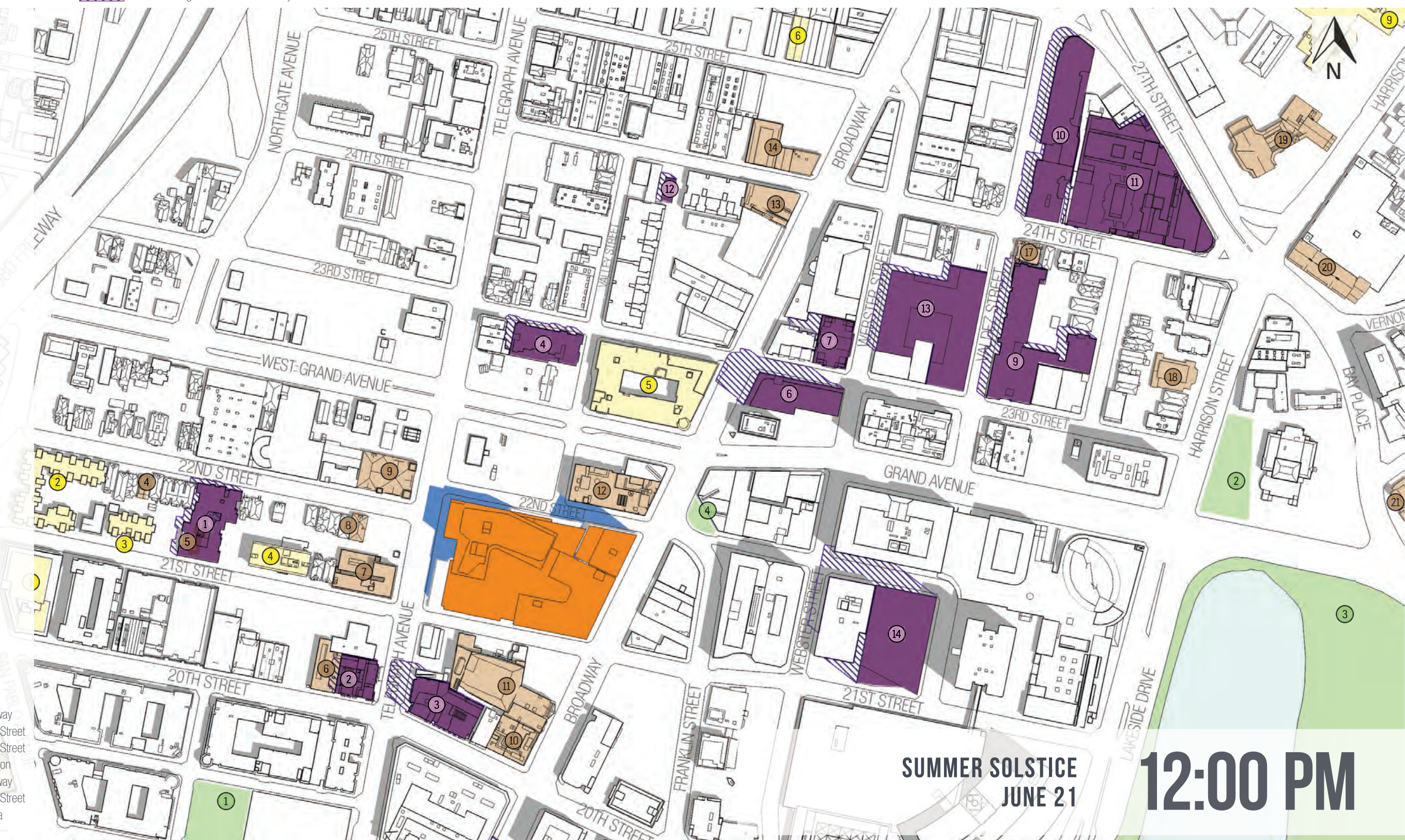
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# A.1-2C

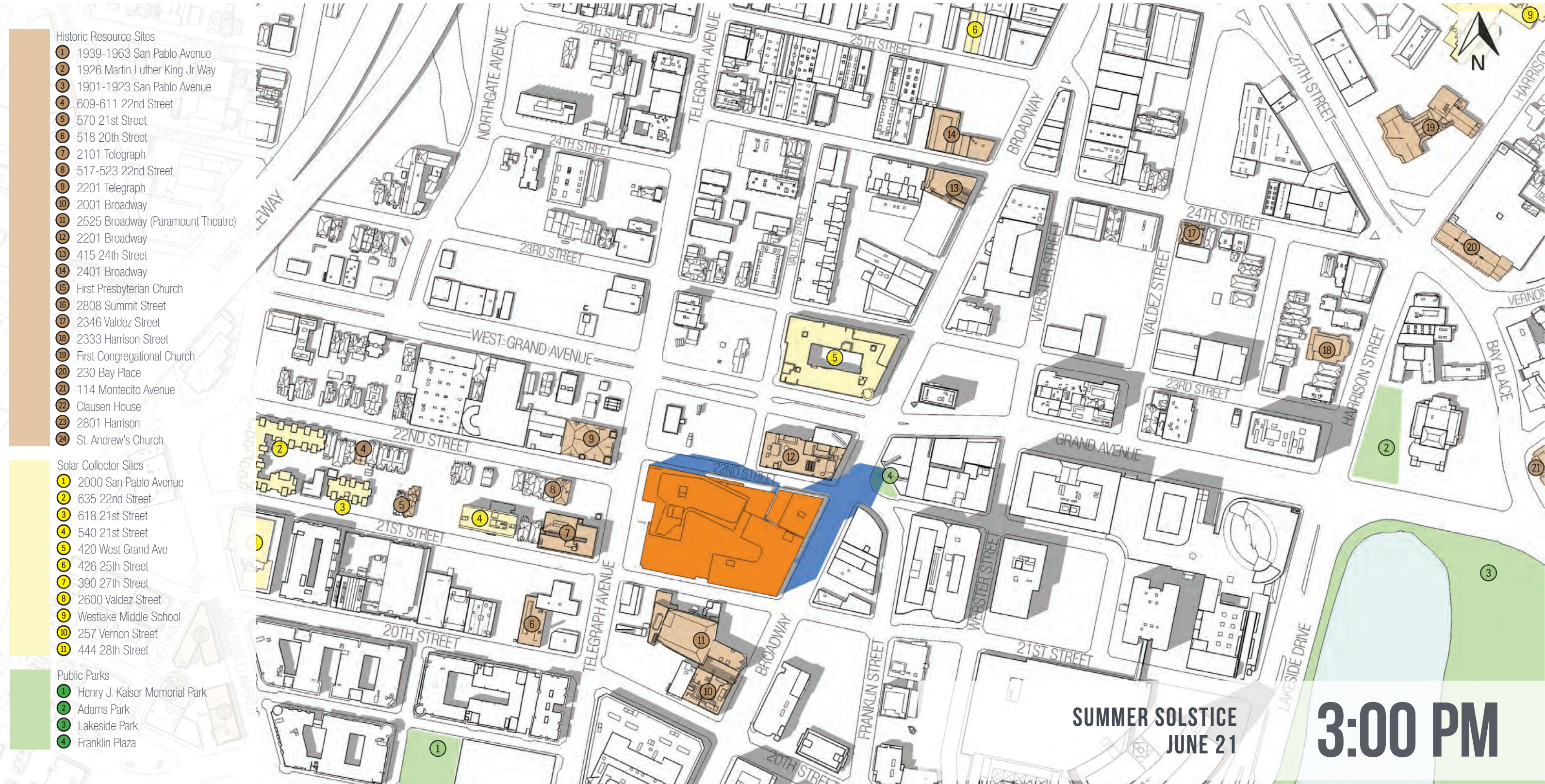
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- Public Parks**
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- 2 Adams Park
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- 4 Franklin Plaza
- Cumulative Projects**
- 1 585 22nd Street
- 2 2015 Telegraph
- 3 2016 Telegraph
- 4 459 23rd Street
- 5 1900 Broadway
- 6 2270 Broadway
- 7 2305 Webster
- 8 2630 Broadway
- 9 2302 Valdez Street
- 10 2400 Valdez Street
- 11 24th & Harrison
- 12 2345 Broadway
- 13 2315 Valdez Street
- 14 2 Kaiser Plaza



SUMMER SOLSTICE  
JUNE 21

# 12:00 PM





- Historic Resource Sites**
- 1 1939-1963 San Pablo Avenue
  - 2 1926 Martin Luther King Jr Way
  - 3 1901-1923 San Pablo Avenue
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- Public Parks**
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  - 2 Adams Park
  - 3 Lakeside Park
  - 4 Franklin Plaza

**SUMMER SOLSTICE  
JUNE 21**

**3:00 PM**



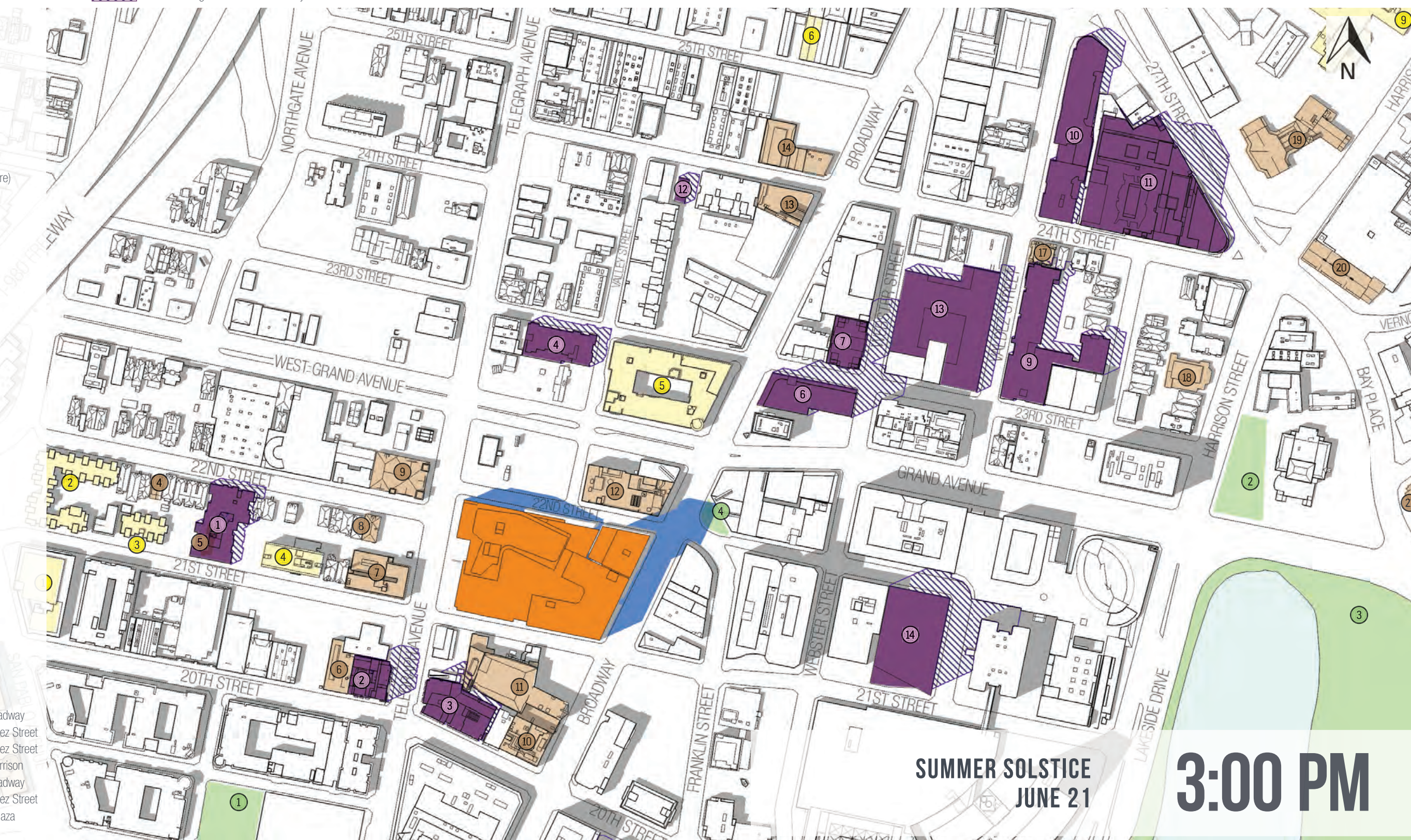
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# A.1-3C

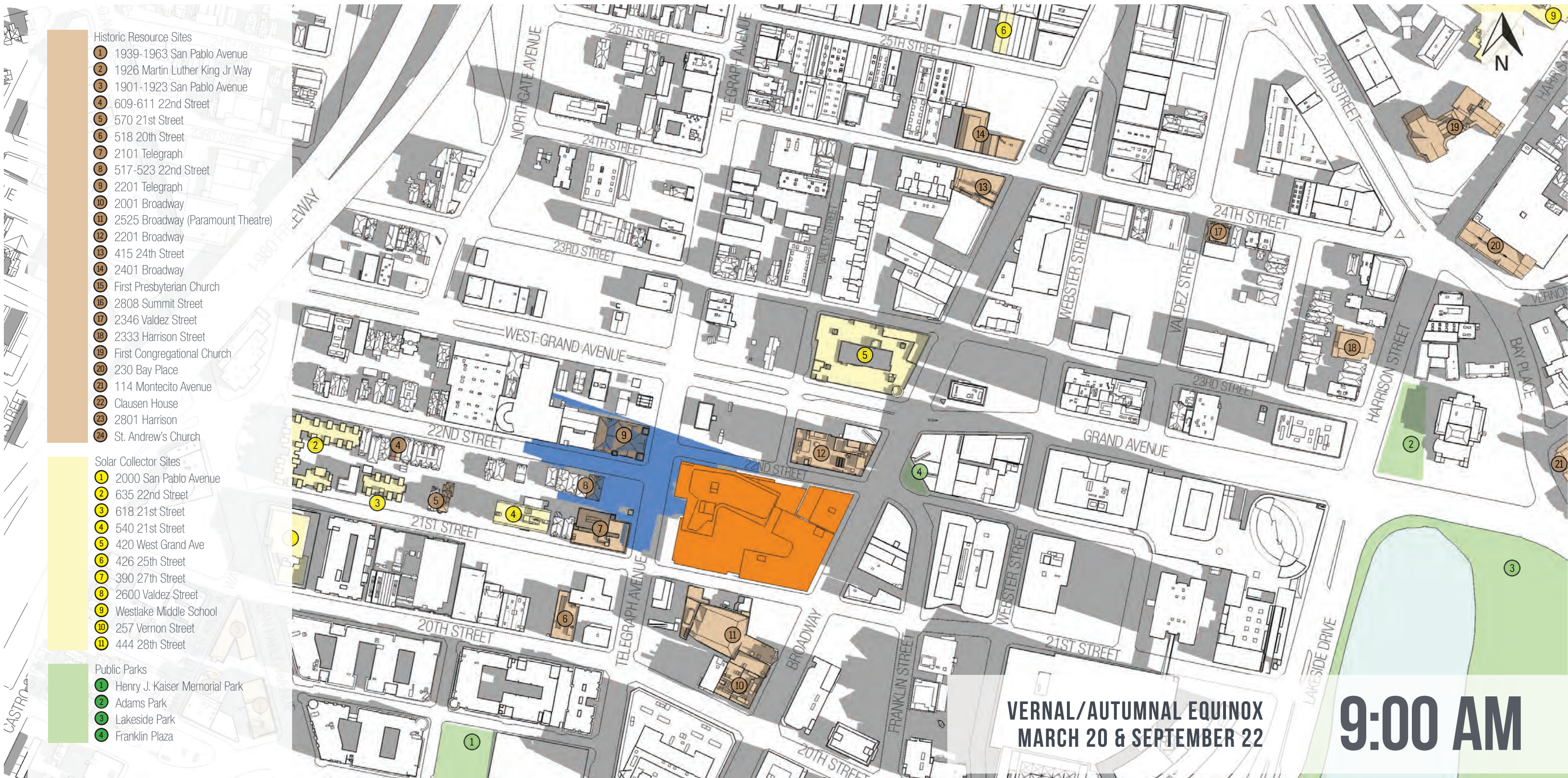
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SUMMER SOLSTICE  
JUNE 21

# 3:00 PM





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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

9:00 AM



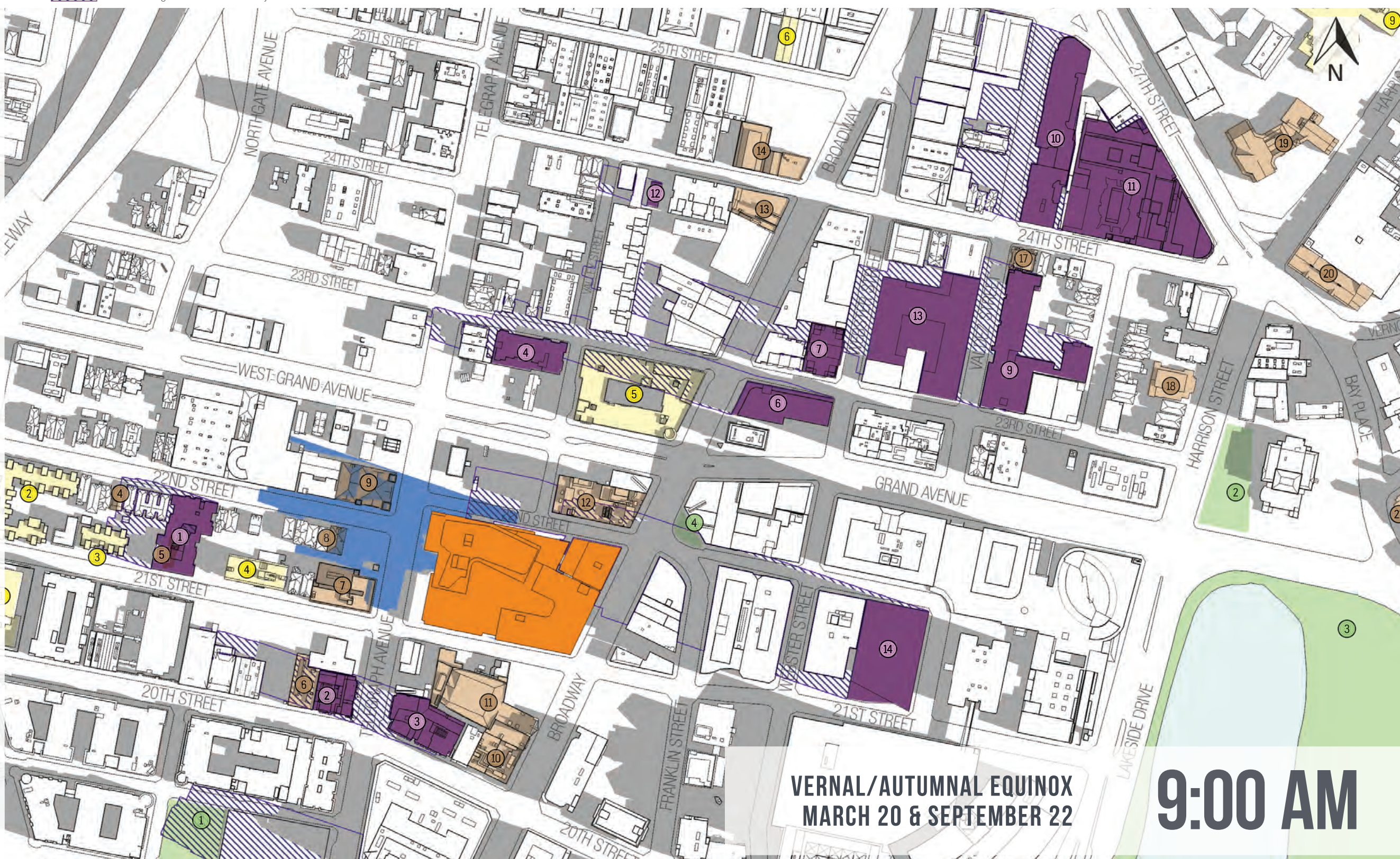
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- Existing (current) Shadows
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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# A.2-1C

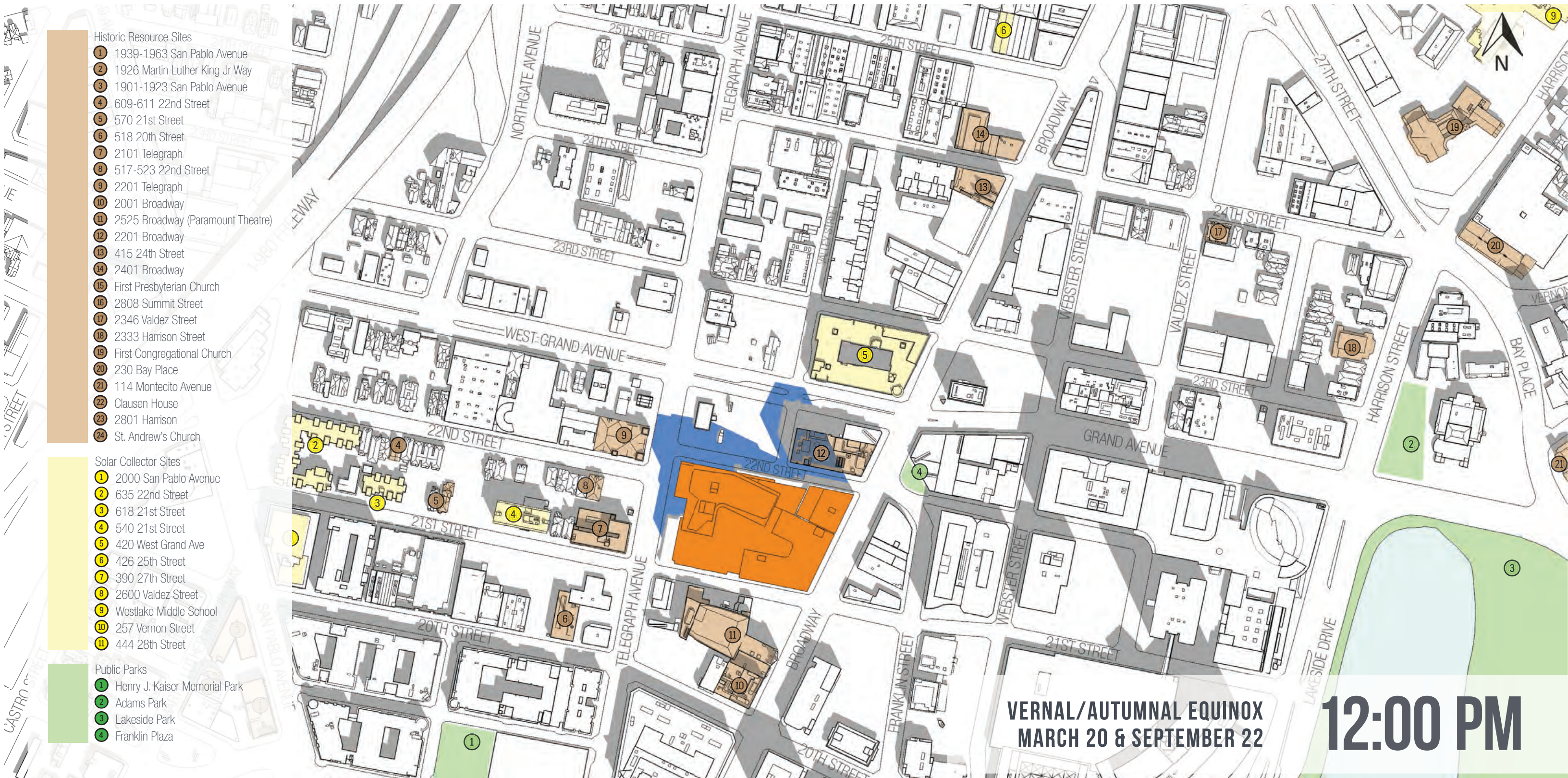
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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 9:00 AM





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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

**12:00 PM**



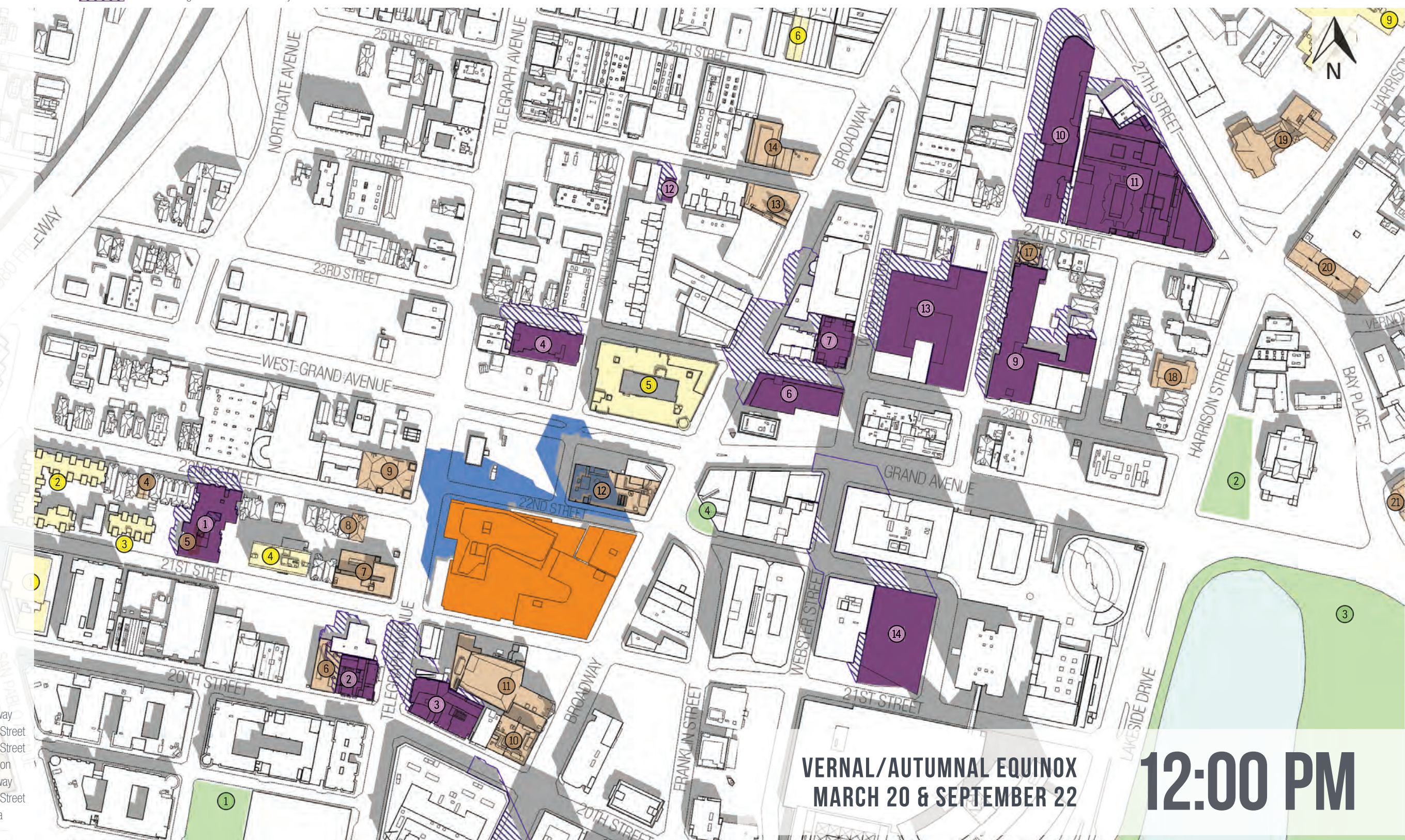
- Proposed Project
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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# A.2-2C

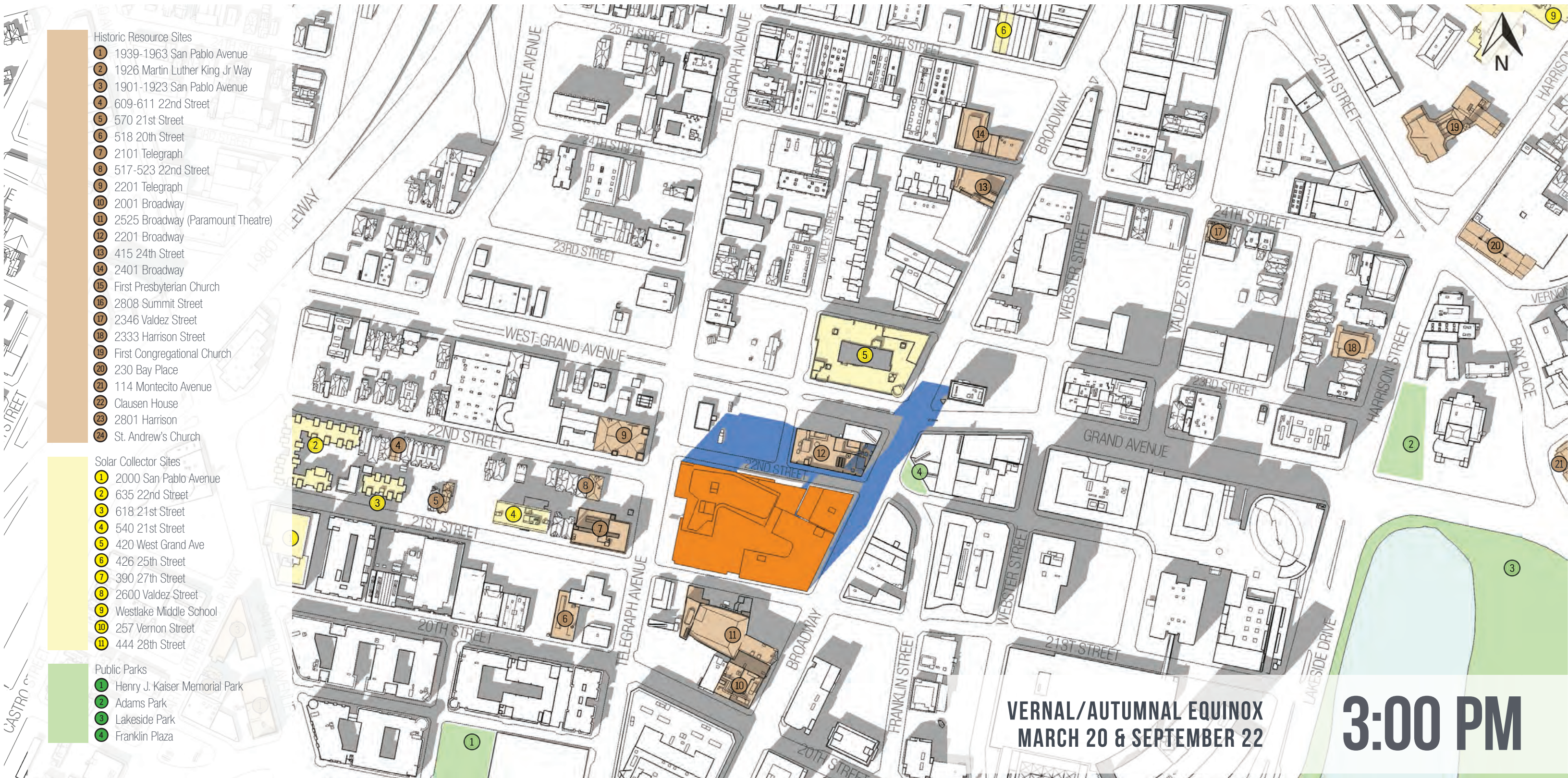
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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 12:00 PM







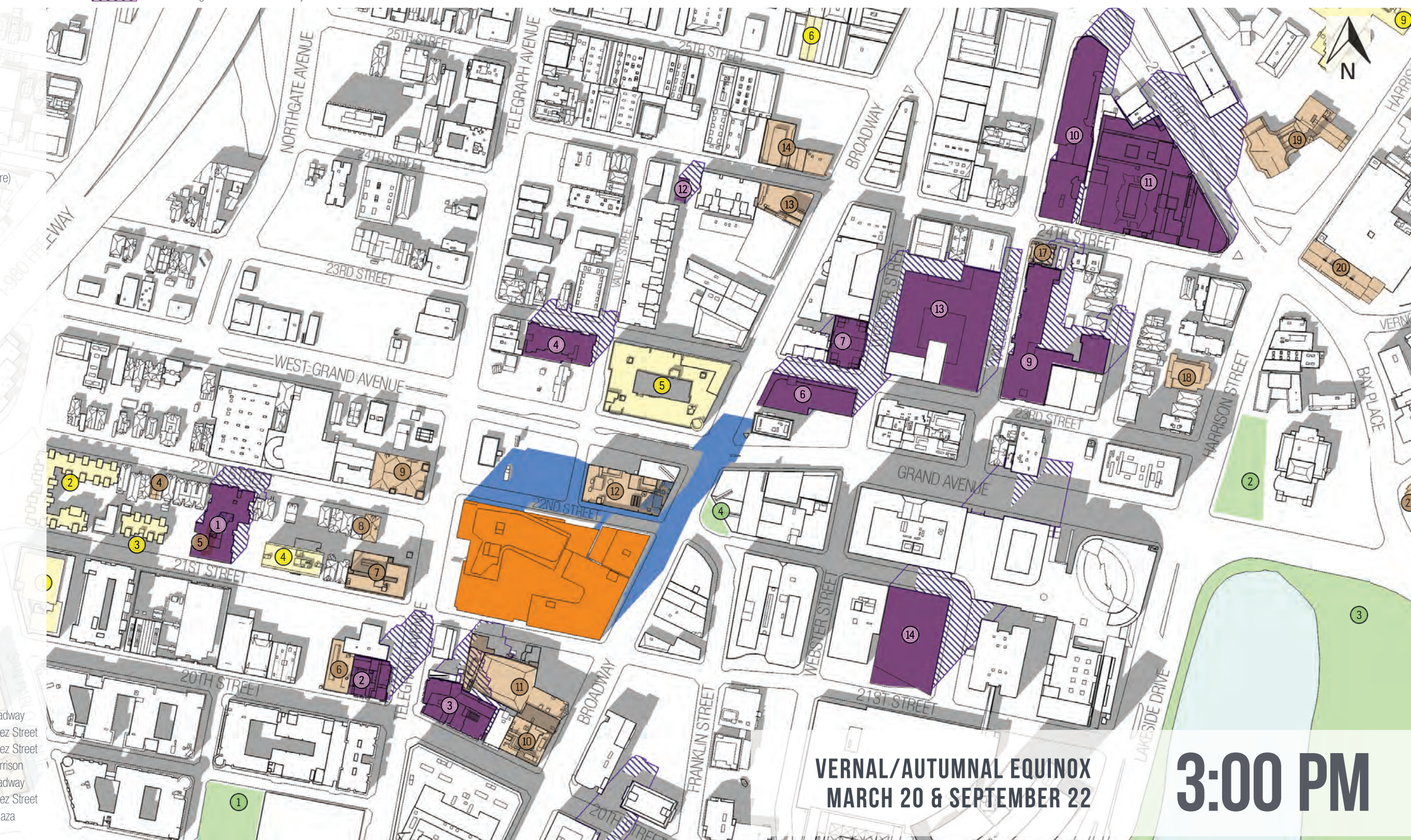
- Proposed Project
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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# A.2-3C

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 3:00 PM



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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM



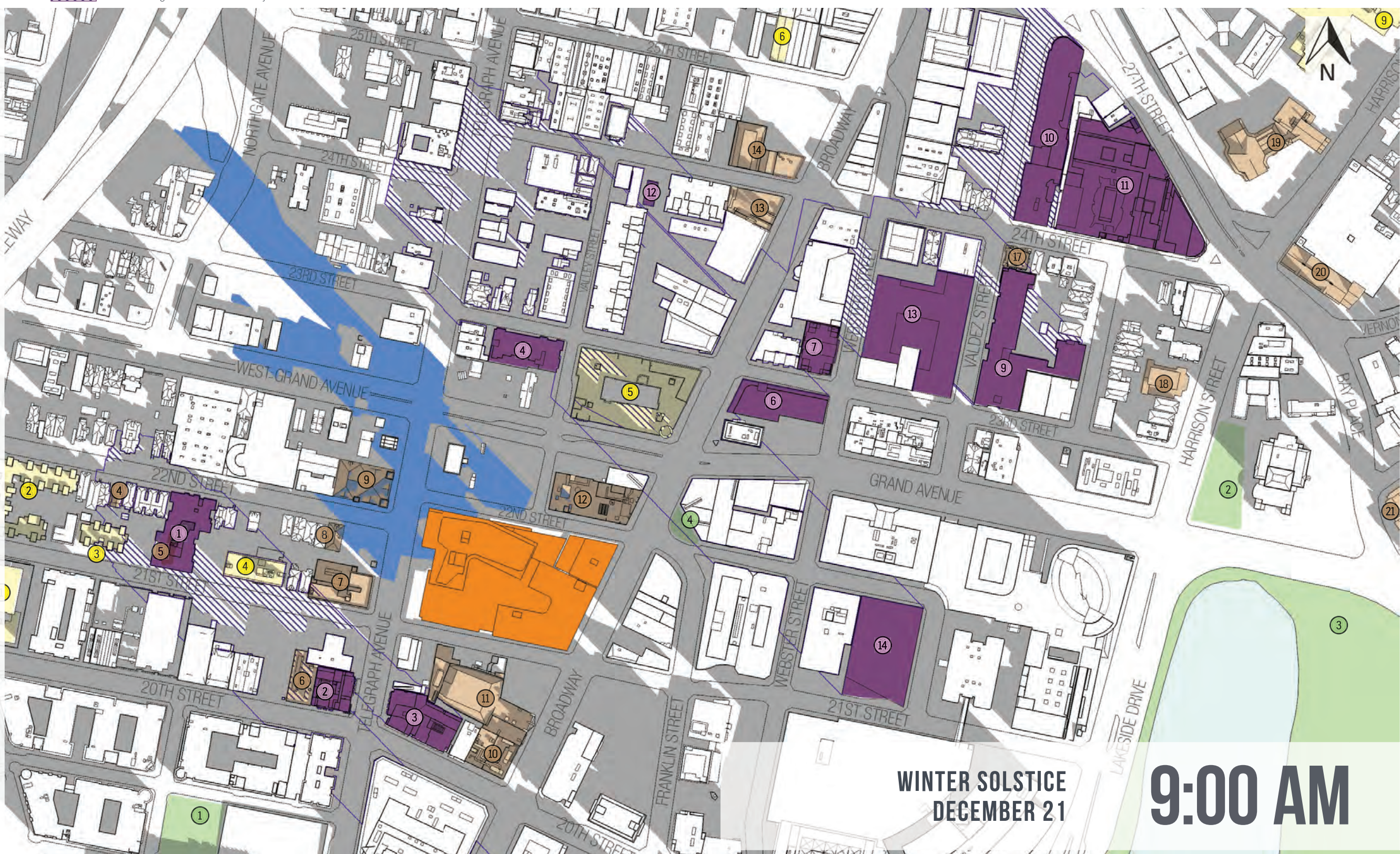
- Proposed Project
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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# A.3-1C

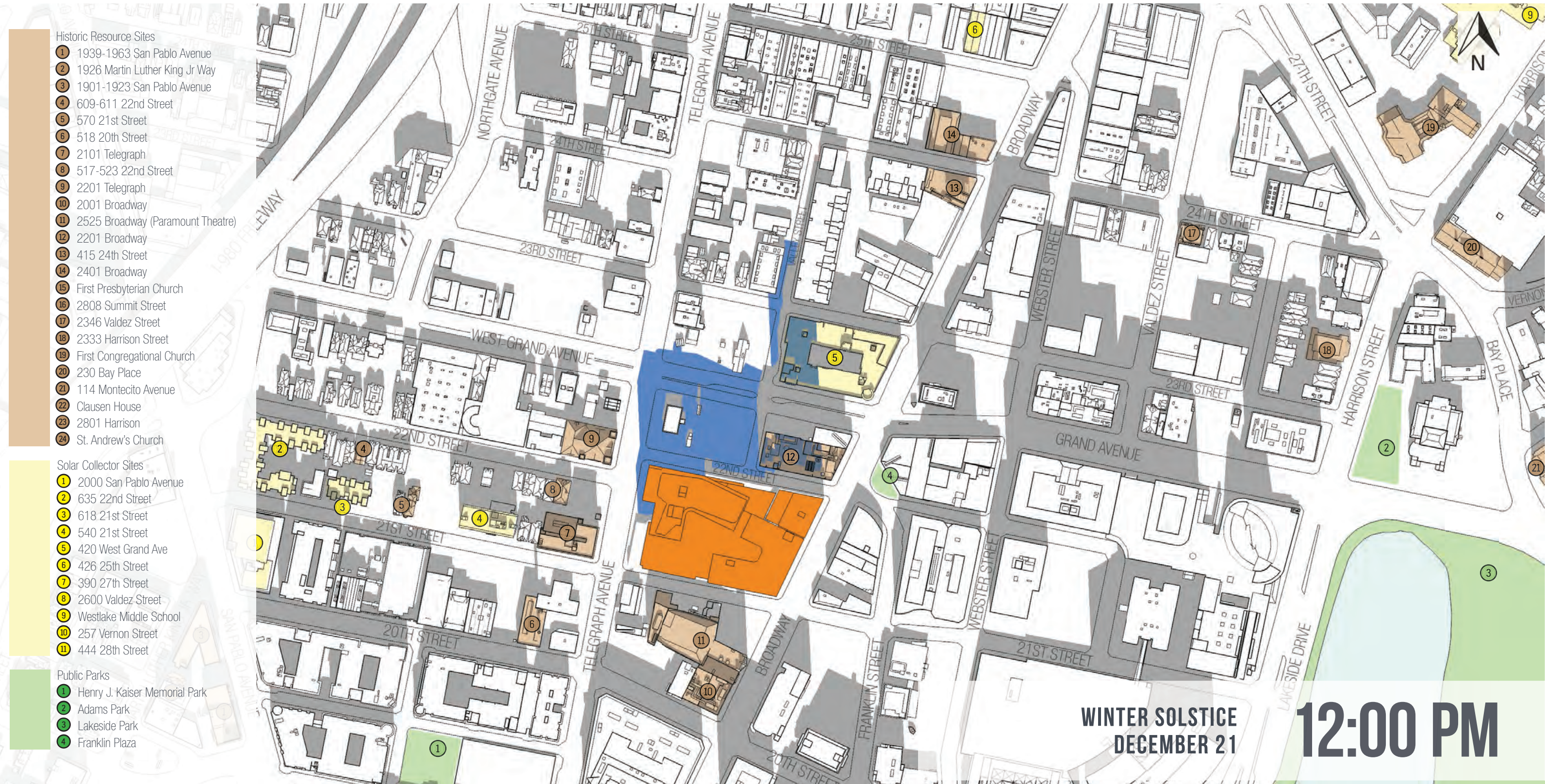
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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM





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WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM



- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# A.3-2C

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WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM





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**WINTER SOLSTICE  
DECEMBER 21**

**3:00 PM**



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# 2100 TELEGRAPH: FINAL DEVELOPMENT PLAN + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

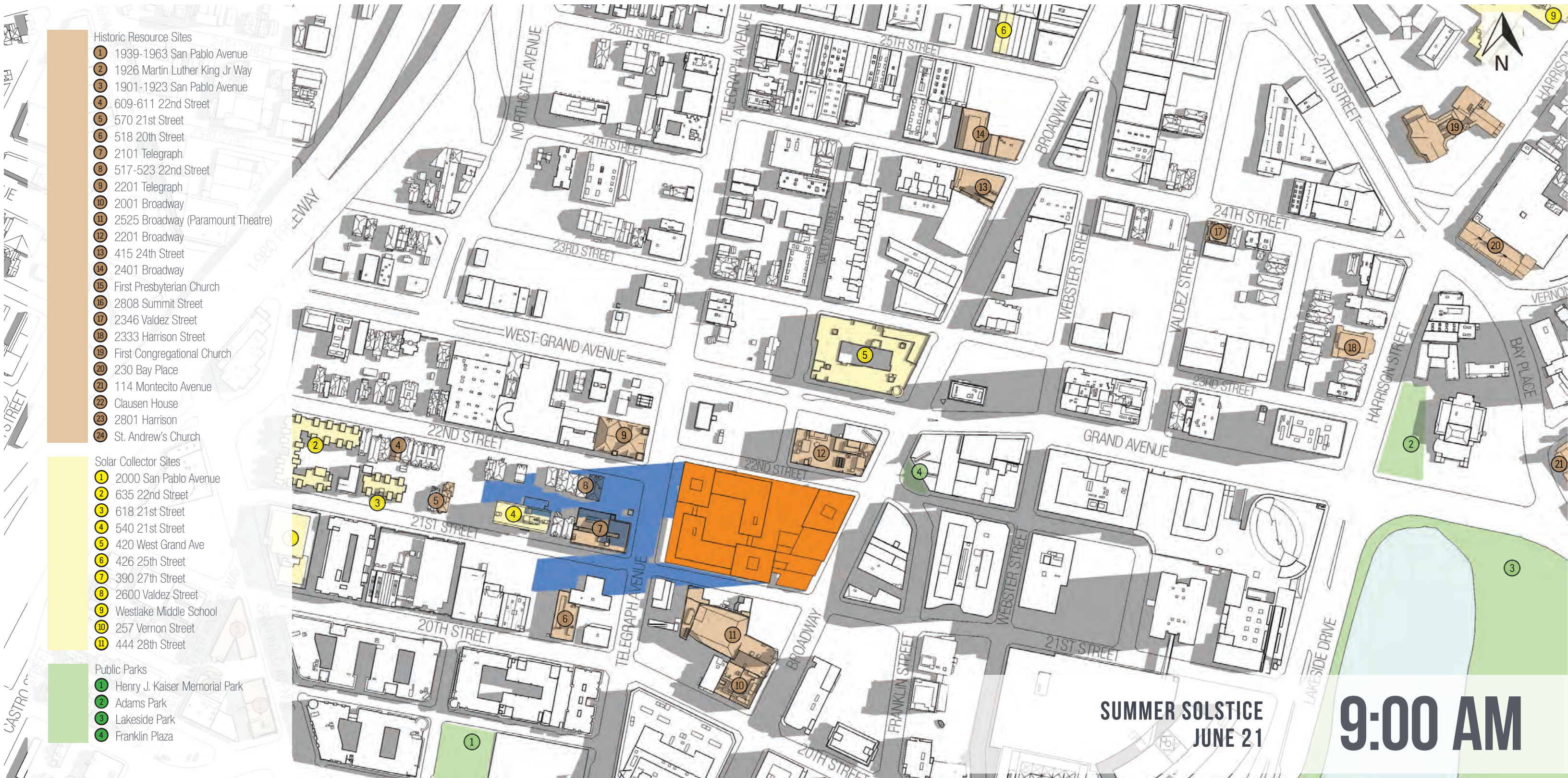
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Summer Solstice

# B.1-1



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SUMMER SOLSTICE  
JUNE 21

# 9:00 AM



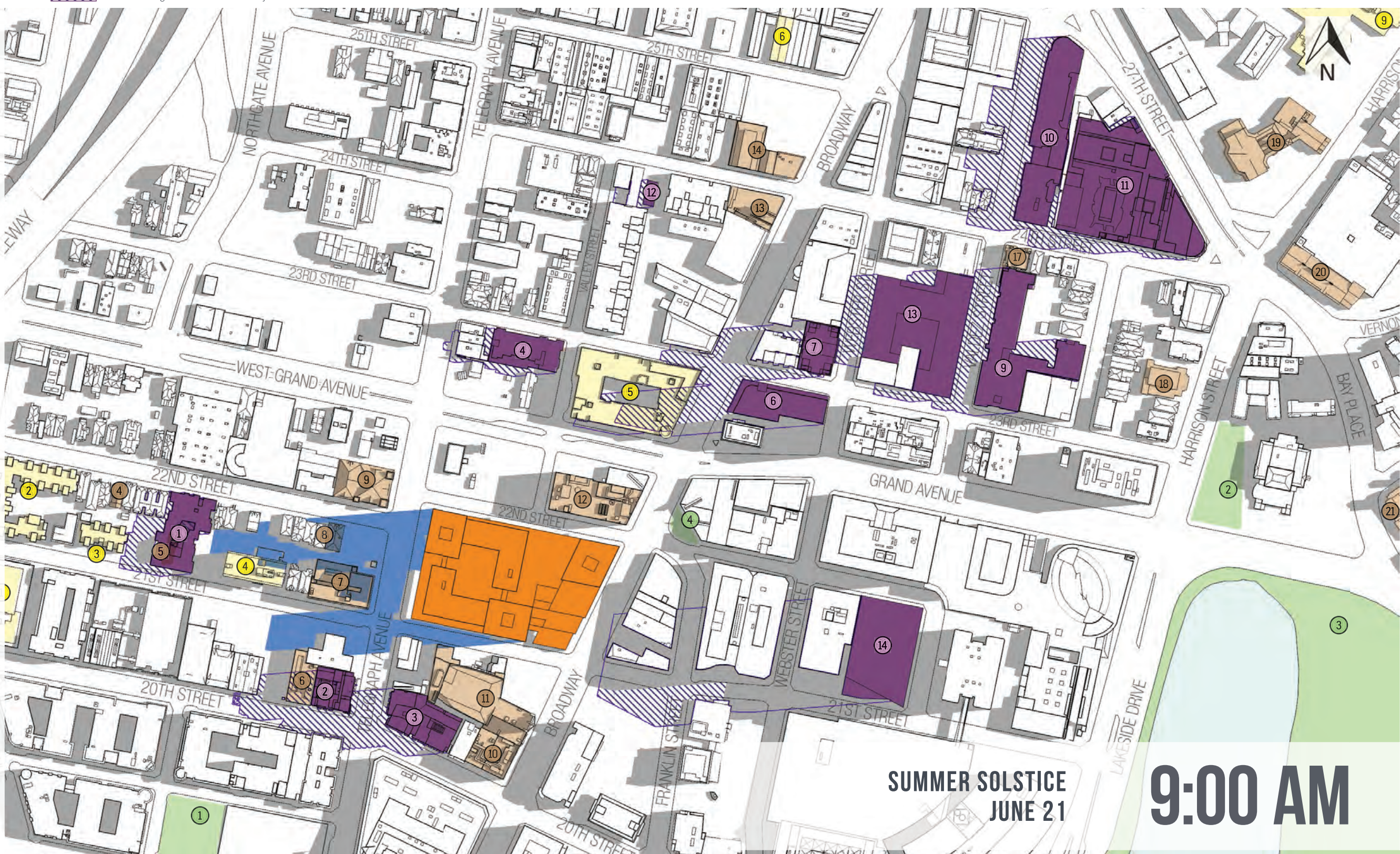
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Cumulative shading diagrams on the Summer Solstice

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SUMMER SOLSTICE  
JUNE 21

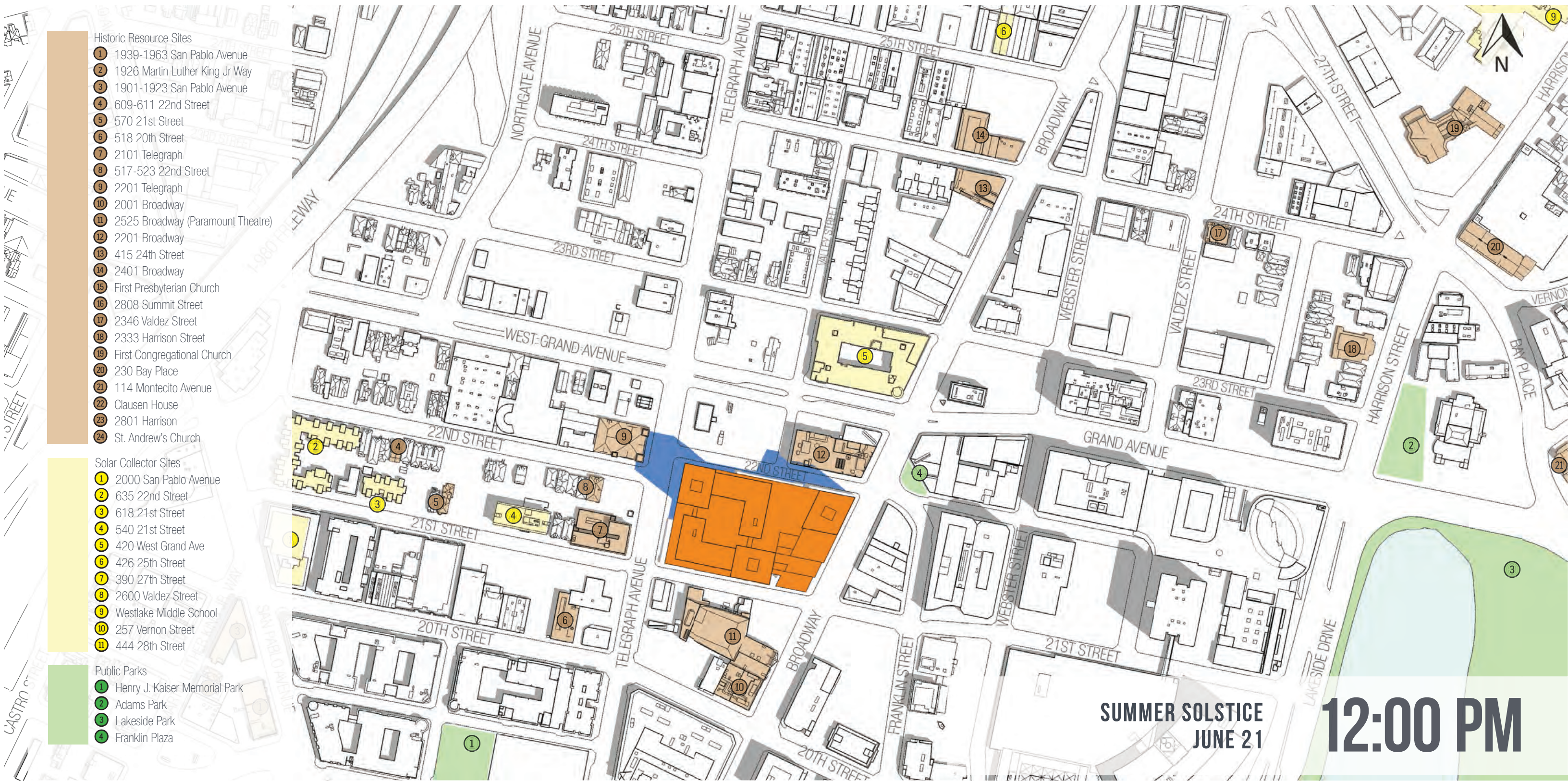
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Summer Solstice

# B.1-2



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SUMMER SOLSTICE  
JUNE 21

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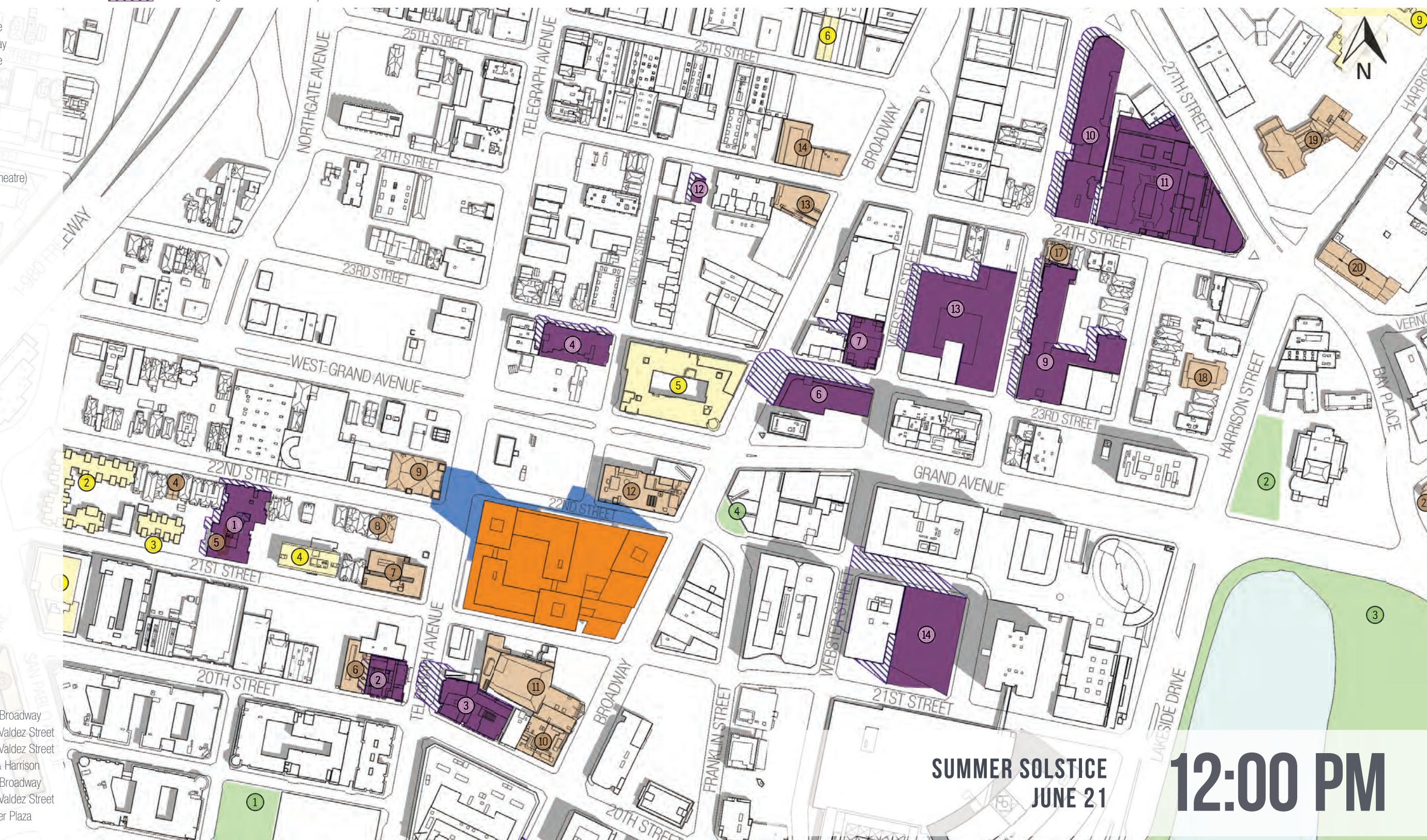
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Cumulative shading diagrams on the Summer Solstice

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SUMMER SOLSTICE  
JUNE 21

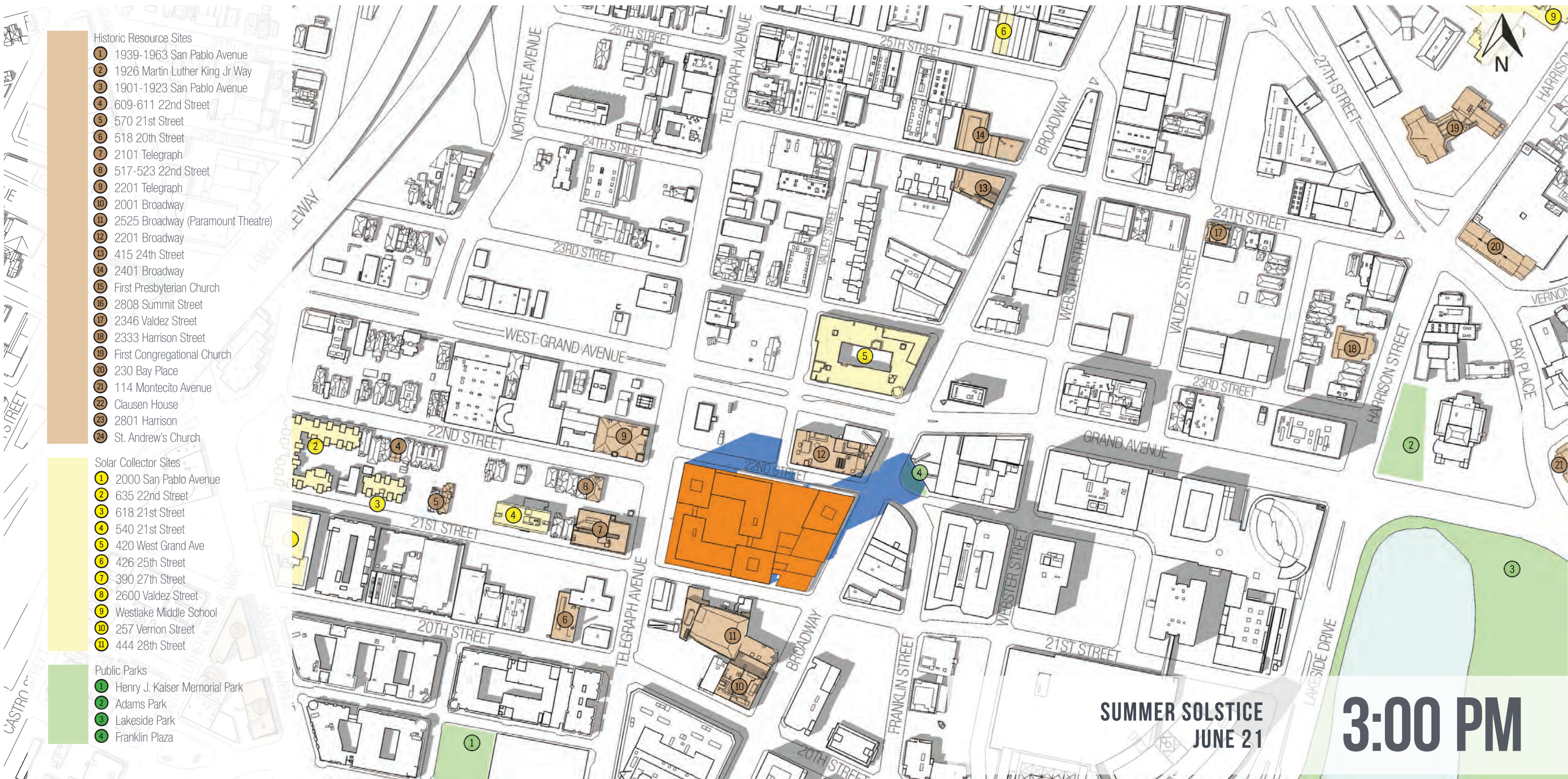
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Summer Solstice

# B.1-3



- Historic Resource Sites**
- 1 1939-1963 San Pablo Avenue
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SUMMER SOLSTICE  
JUNE 21

# 3:00 PM



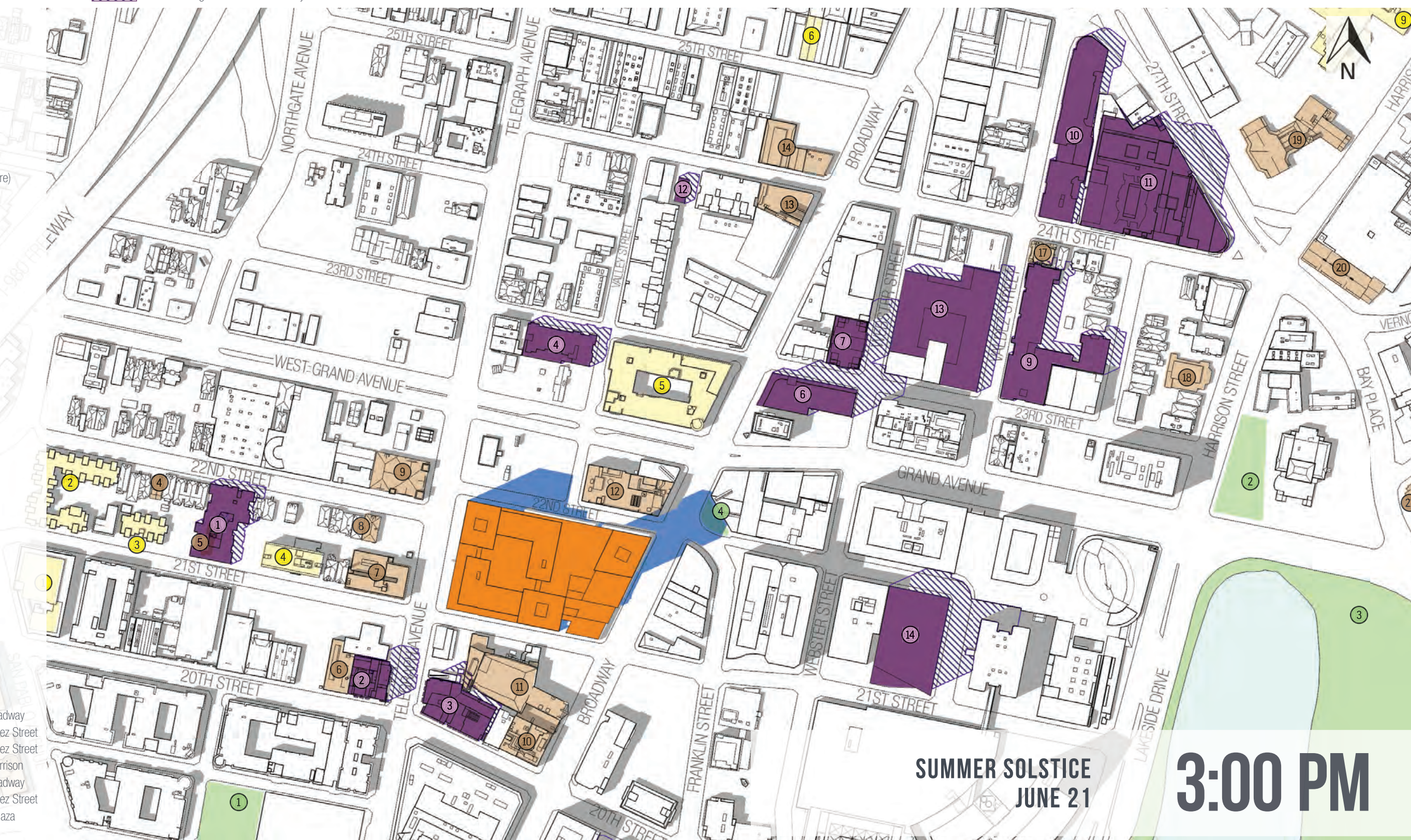
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# B.1-3C

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SUMMER SOLSTICE  
JUNE 21

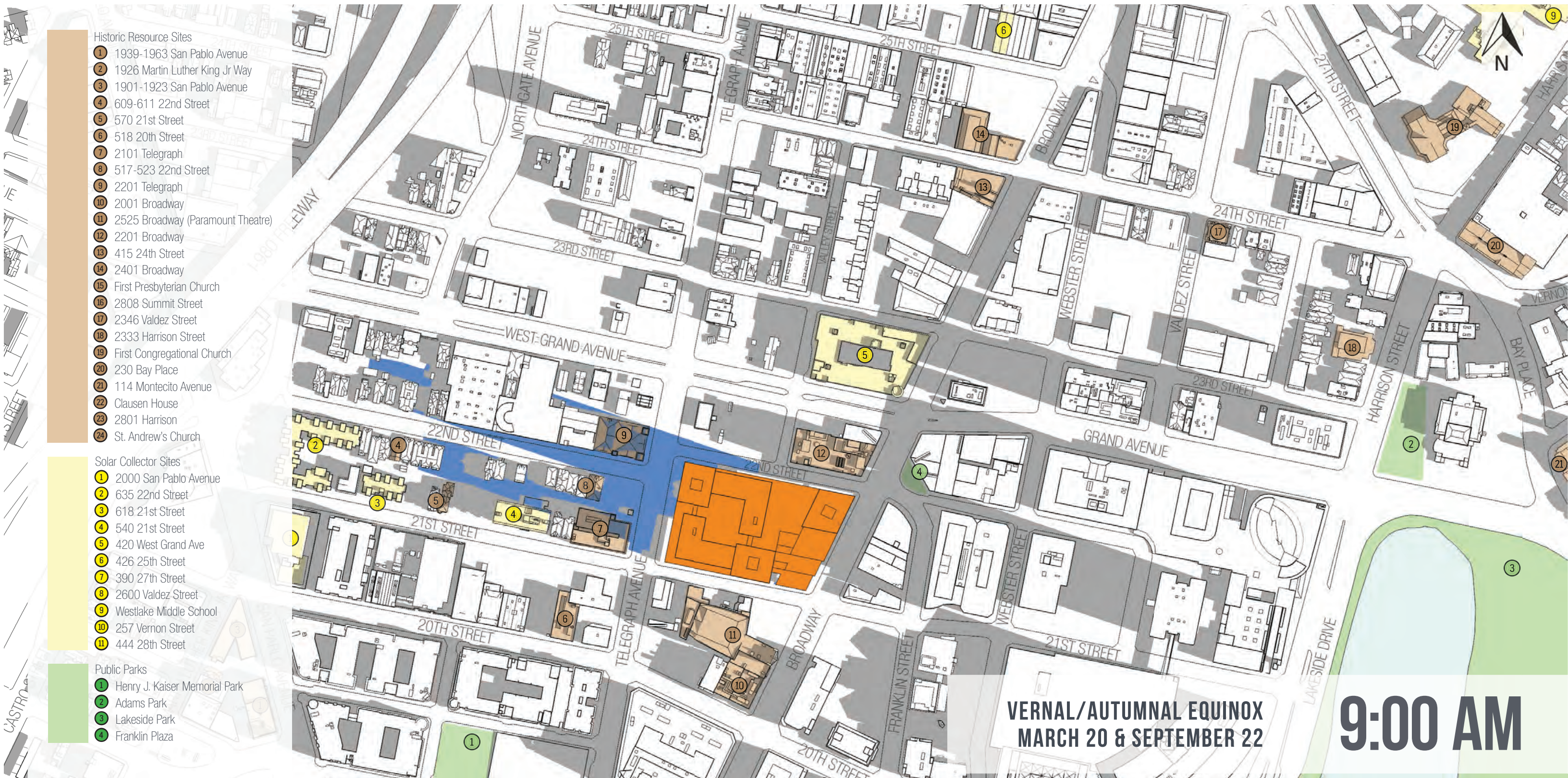
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# B.2-1



**Historic Resource Sites**

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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 9:00 AM



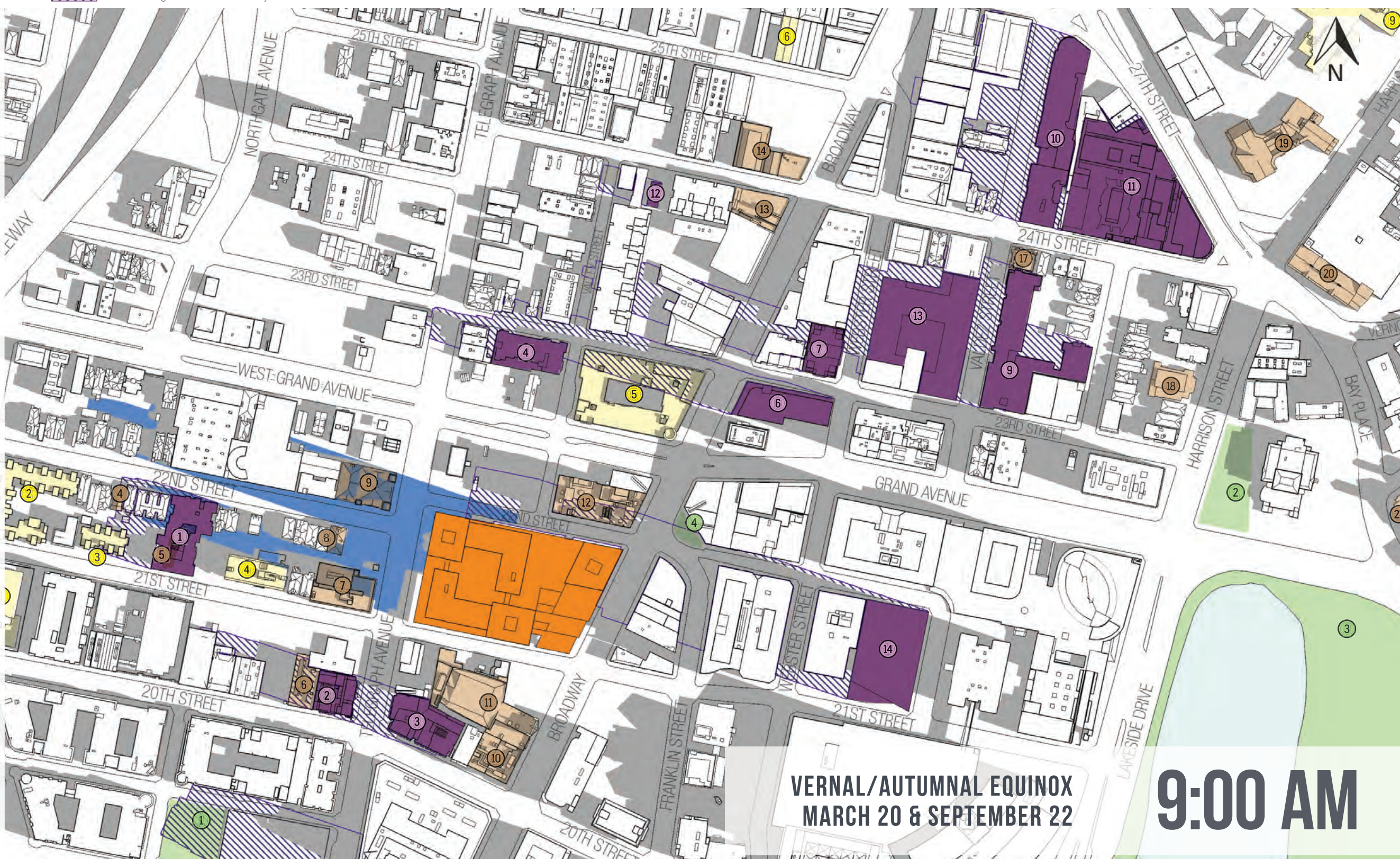
- Proposed Project
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- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# B.2-1C

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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

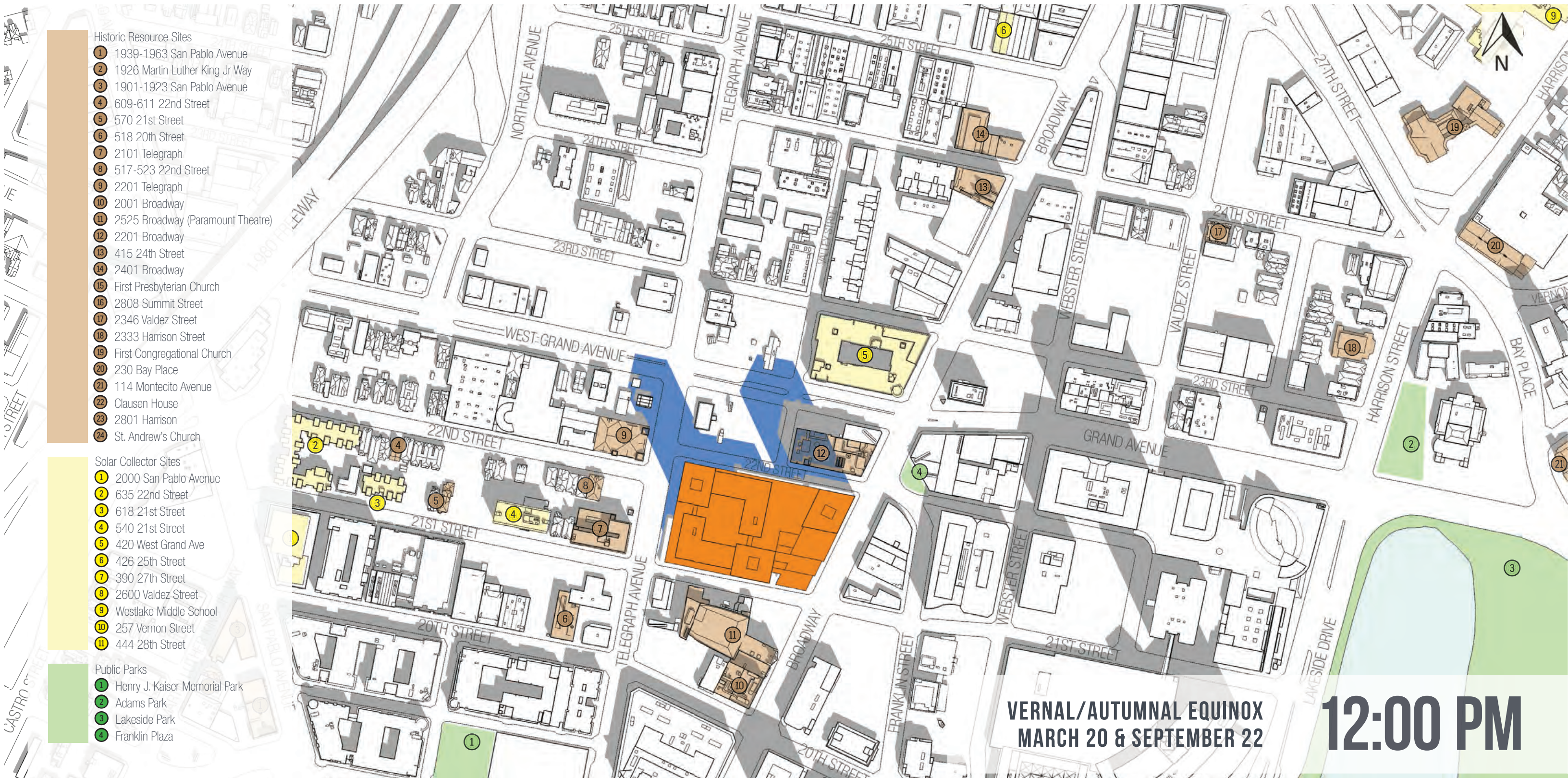
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# B.2-2



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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 12:00 PM



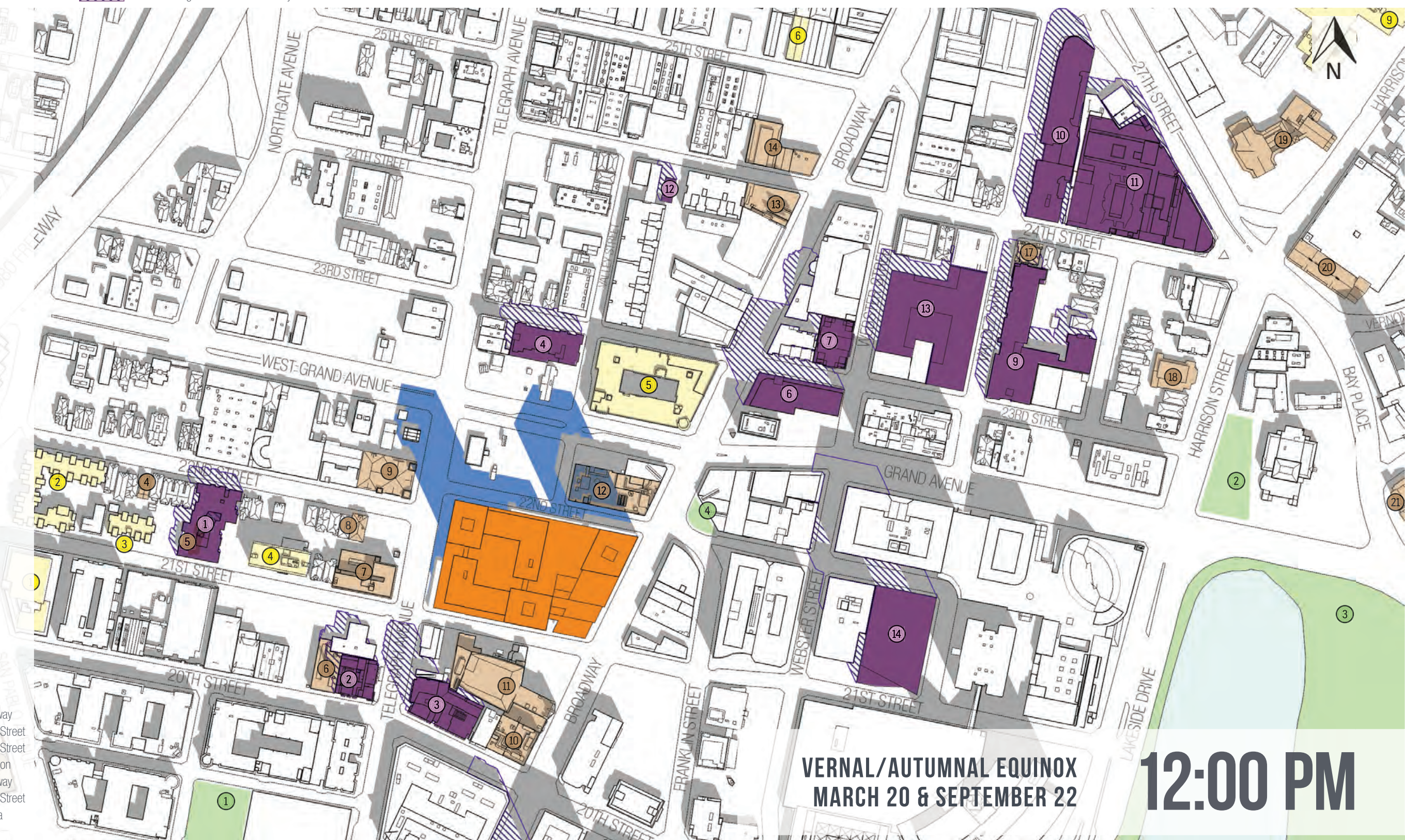
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

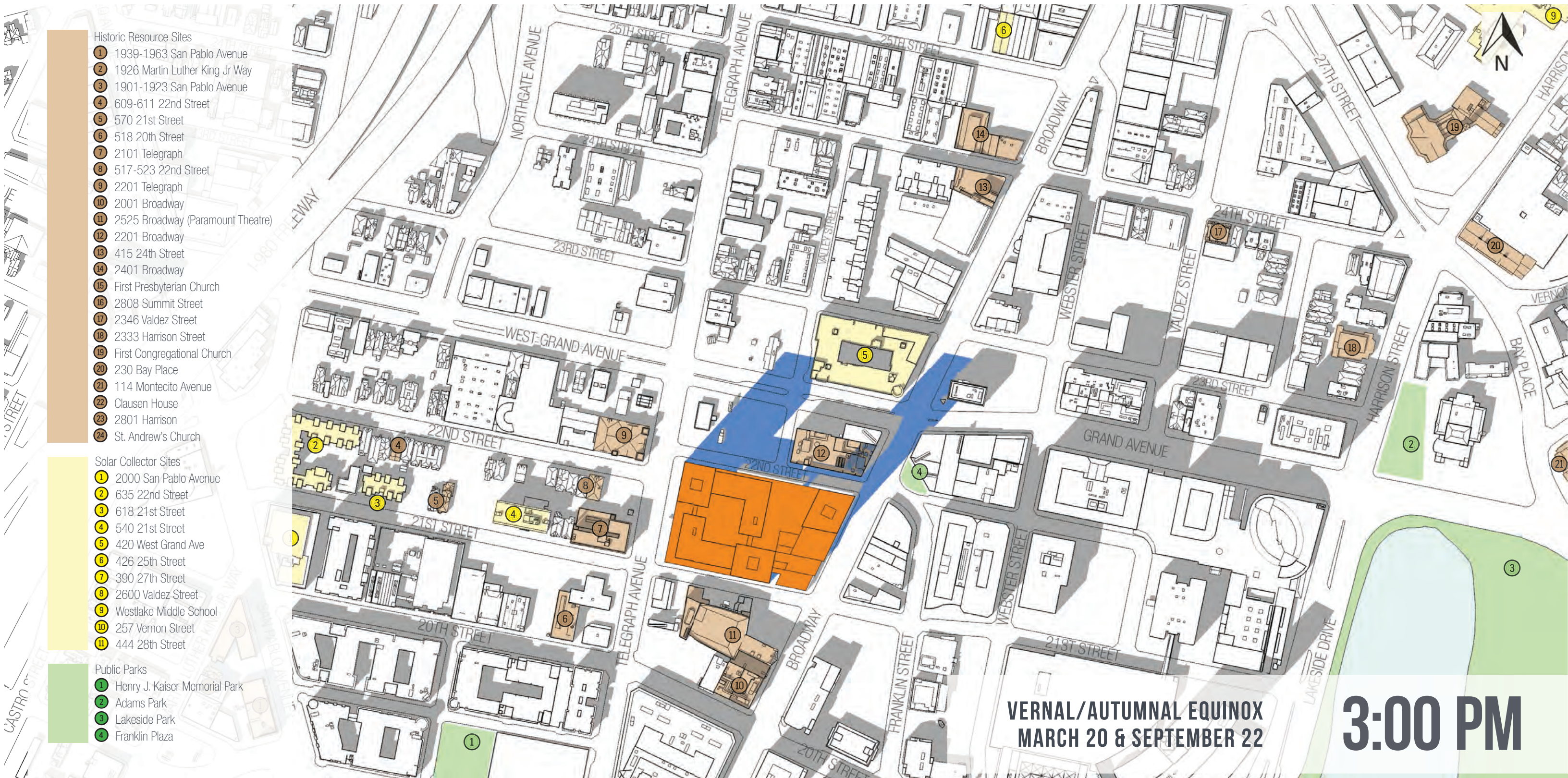
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# B.2-3



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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

**3:00 PM**



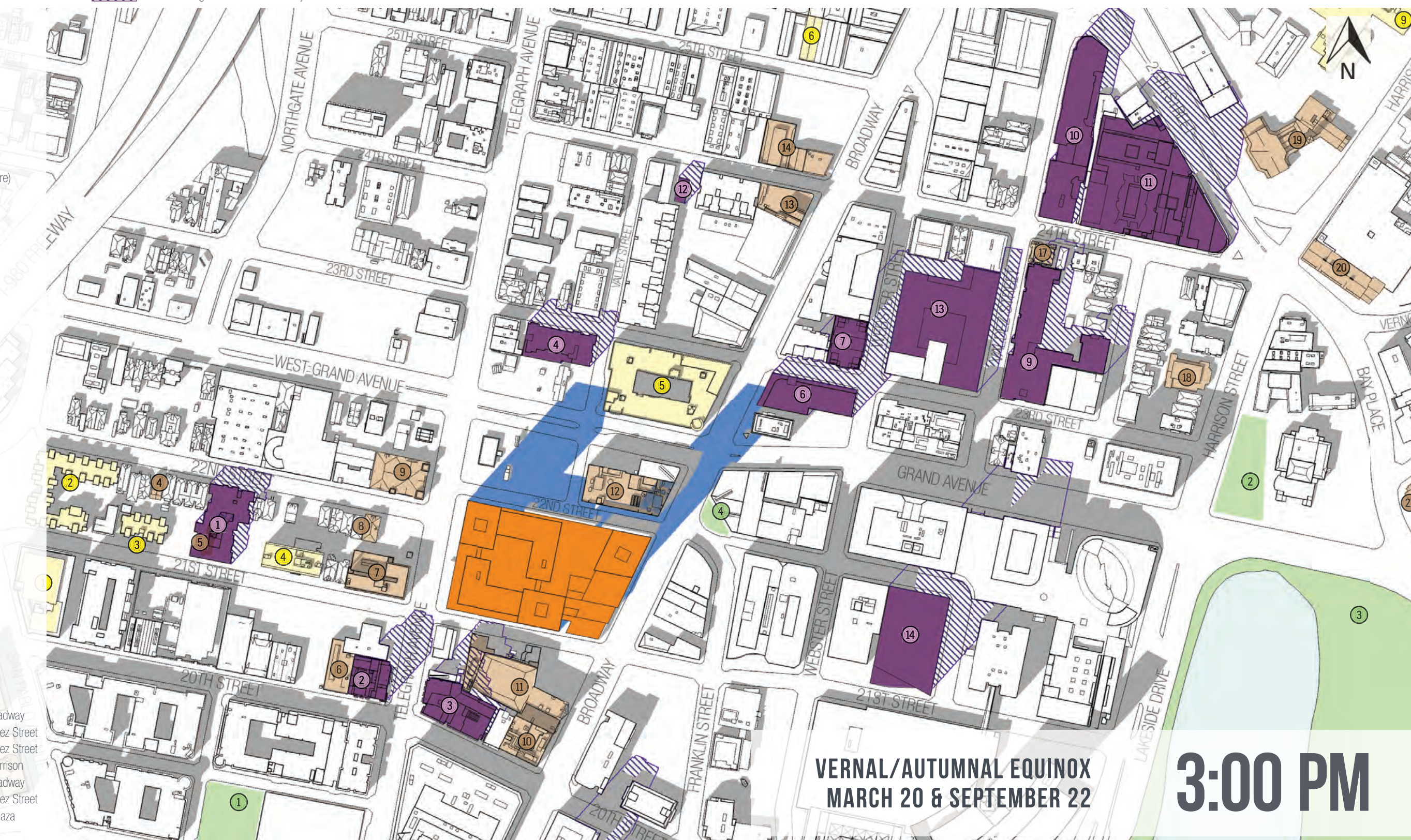
- Proposed Project
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

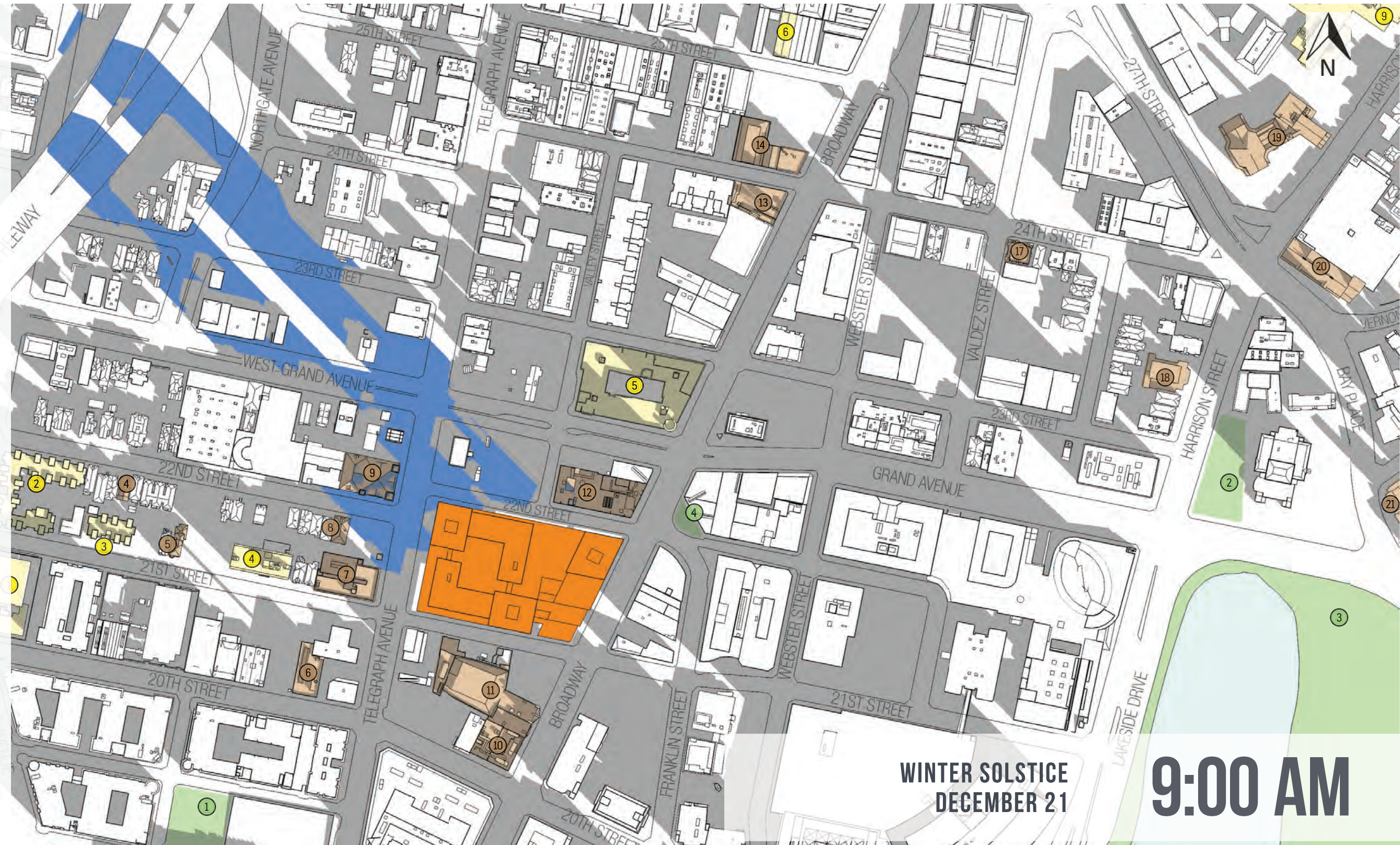
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM



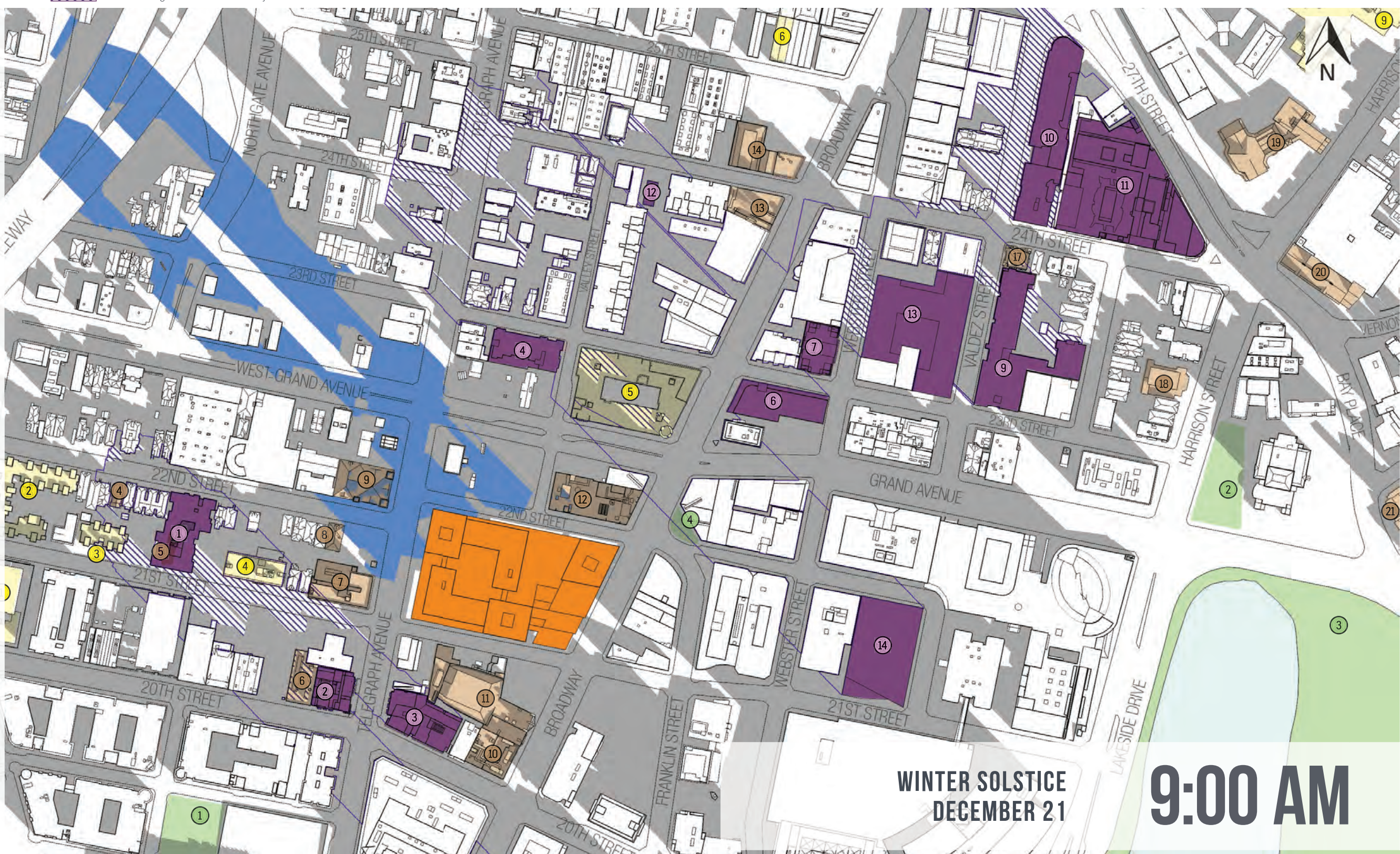
- Proposed Project
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM



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WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM



- Proposed Project
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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

# B.3-2C

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WINTER SOLSTICE  
DECEMBER 21  
**12:00 PM**



# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO

Shading diagrams on the Winter Solstice



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WINTER SOLSTICE  
DECEMBER 21

# 3:00 PM



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# 2100 TELEGRAPH: MAXIMUM RESIDENTIAL SCENARIO + CUMULATIVE

# B.3-3C

Cumulative shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

3:00 PM



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Summer Solstice

# C.1-1

**Historic Resource Sites**

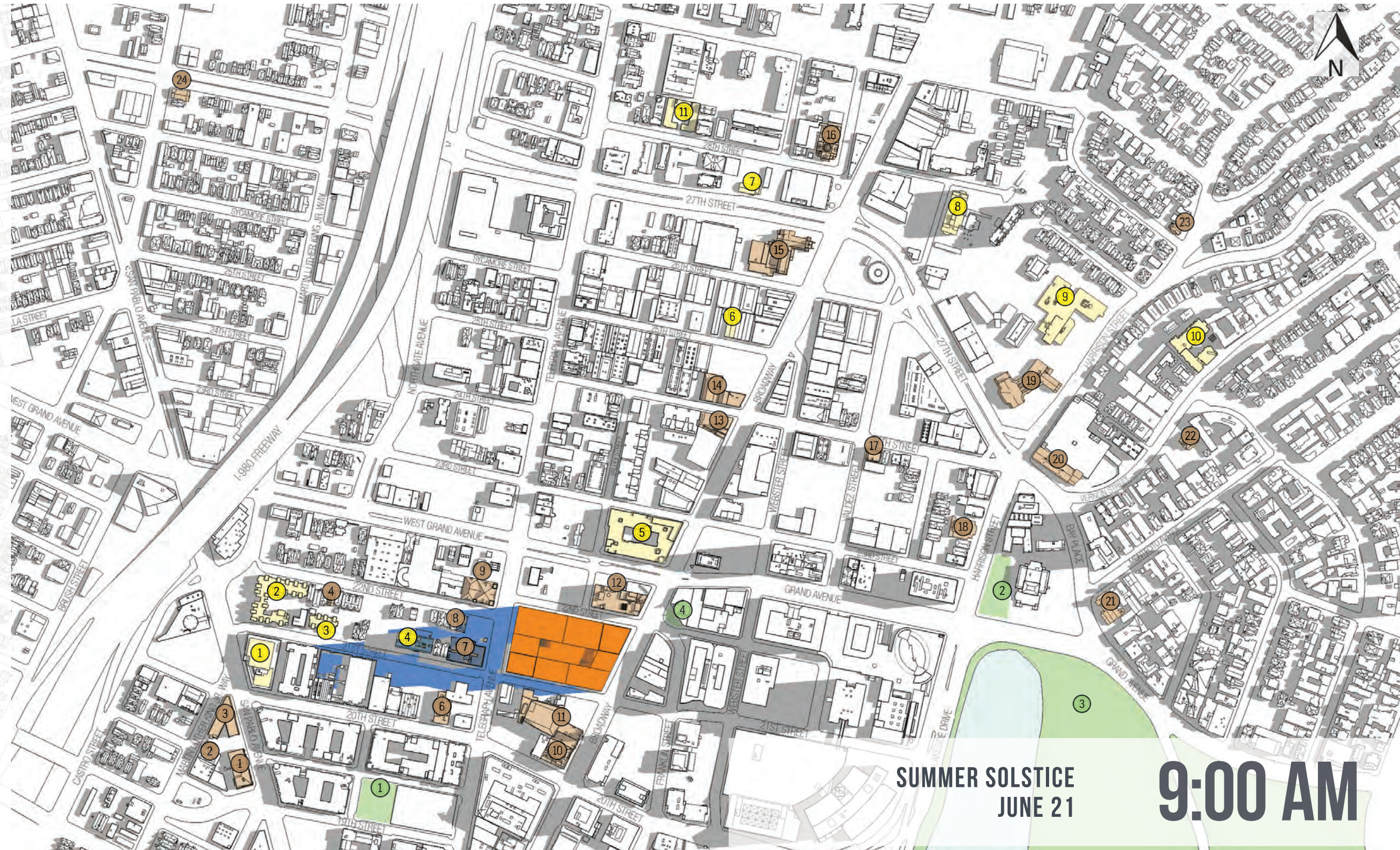
- 1 1939-1963 San Pablo Avenue
- 2 1926 Martin Luther King Jr Way
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- 4 609-611 22nd Street
- 5 570 21st Street
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- 16 2808 Summit Street
- 17 2346 Valdez Street
- 18 2333 Harrison Street
- 19 First Congregational Church
- 20 230 Bay Place
- 21 114 Montecito Avenue
- 22 Clausen House
- 23 2801 Harrison
- 24 St. Andrew's Church

**Solar Collector Sites**

- 1 2000 San Pablo Avenue
- 2 635 22nd Street
- 3 618 21st Street
- 4 540 21st Street
- 5 420 West Grand Ave
- 6 426 25th Street
- 7 390 27th Street
- 8 2600 Valdez Street
- 9 Westlake Middle School
- 10 257 Vernon Street
- 11 444 28th Street

**Public Parks**

- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
- 3 Lakeside Park
- 4 Franklin Plaza



SUMMER SOLSTICE  
JUNE 21

# 9:00 AM



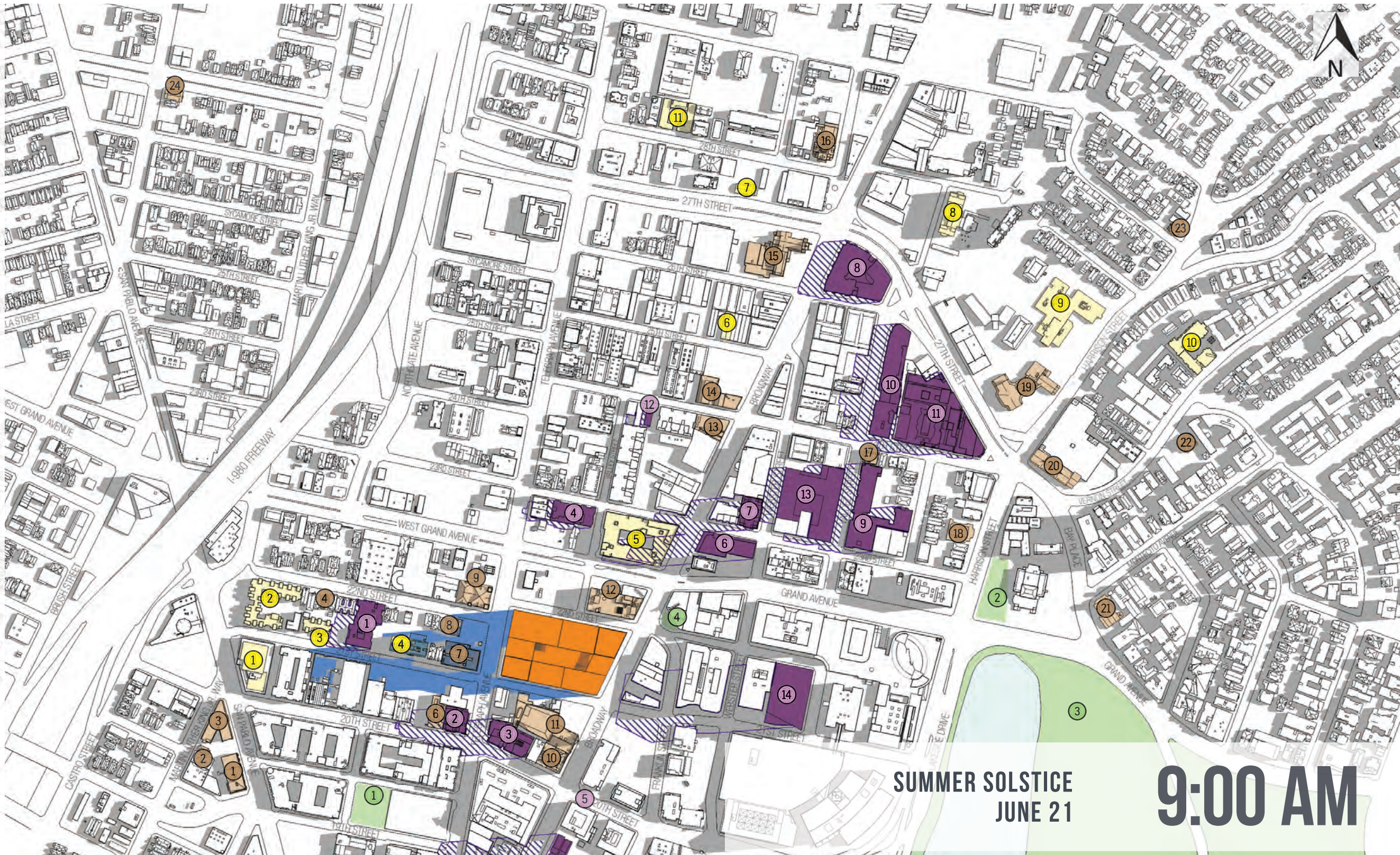
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# C.1-1C

- Historic Resource Sites**
  - 1 1939-1963 San Pablo Avenue
  - 2 1926 Martin Luther King Jr Way
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  - 1 Henry J. Kaiser Memorial Park
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  - 2 2015 Telegraph
  - 3 2016 Telegraph
  - 4 459 23rd Street
  - 5 1900 Broadway
  - 6 2270 Broadway
  - 7 2305 Webster
  - 8 2630 Broadway
  - 9 2302 Valdez Street
  - 10 2400 Valdez Street
  - 11 24th & Harrison
  - 12 2345 Broadway
  - 13 2315 Valdez Street
  - 14 2 Kaiser Plaza



SUMMER SOLSTICE  
JUNE 21  
**9:00 AM**



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Summer Solstice

# C.1-2

Historic Resource Sites

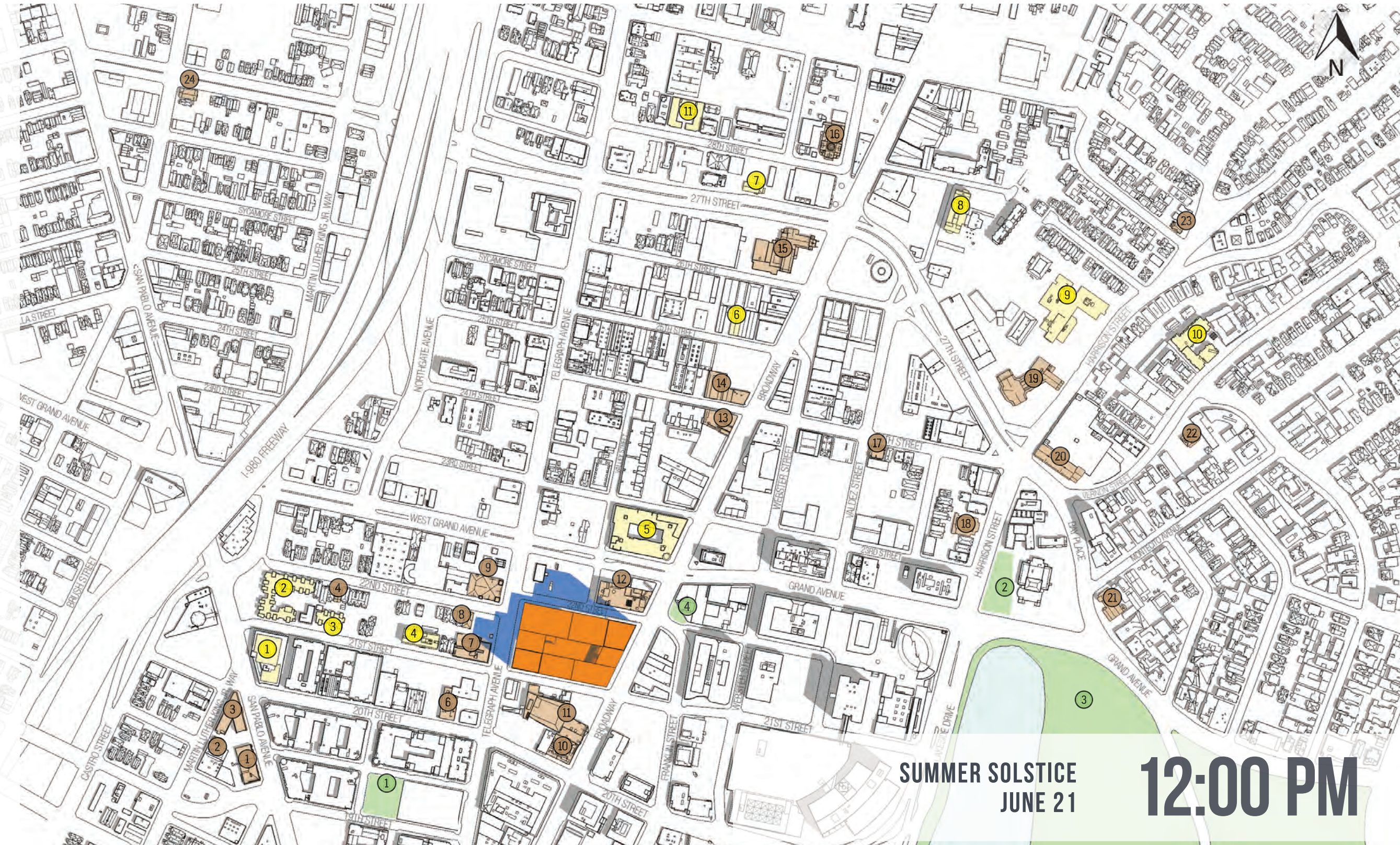
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Public Parks

- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
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SUMMER SOLSTICE  
JUNE 21

# 12:00 PM



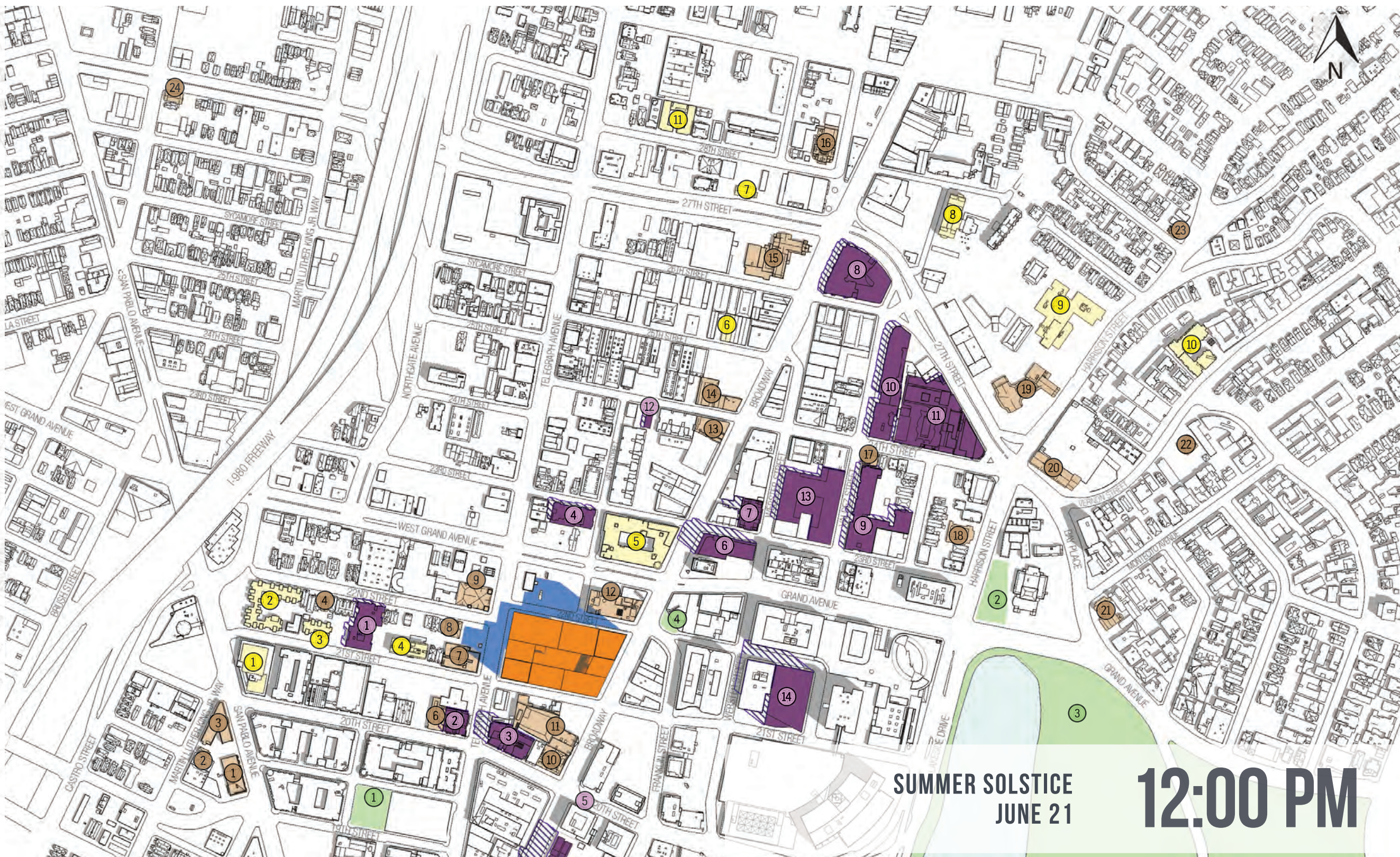
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# C.1-2C

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- 10 2400 Valdez Street
- 11 24th & Harrison
- 12 2345 Broadway
- 13 2315 Valdez Street
- 14 2 Kaiser Plaza



SUMMER SOLSTICE  
JUNE 21

# 12:00 PM



- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Summer Solstice

# C.1-3

Historic Resource Sites

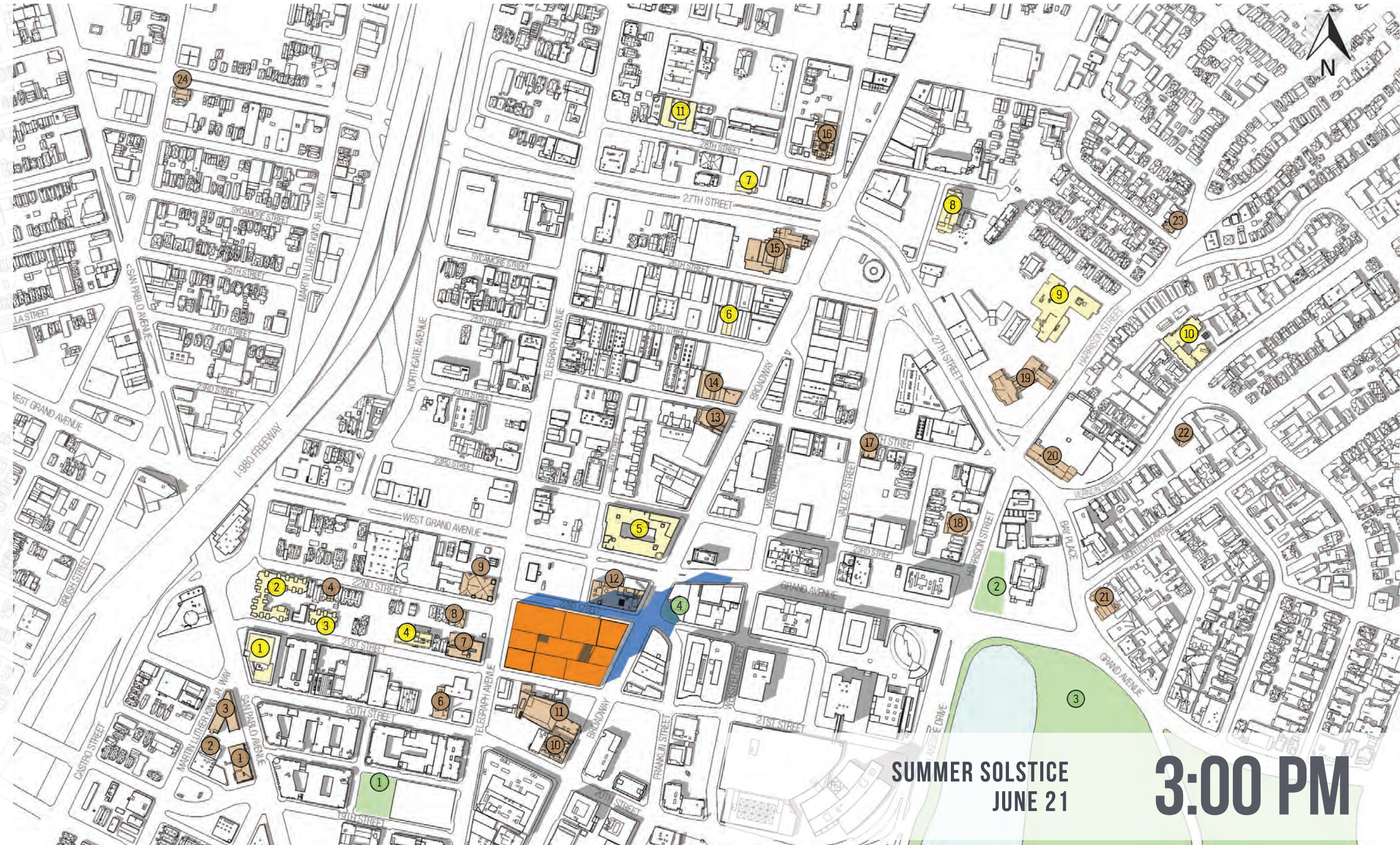
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Public Parks

- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
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- 4 Franklin Plaza



SUMMER SOLSTICE  
JUNE 21

# 3:00 PM



- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

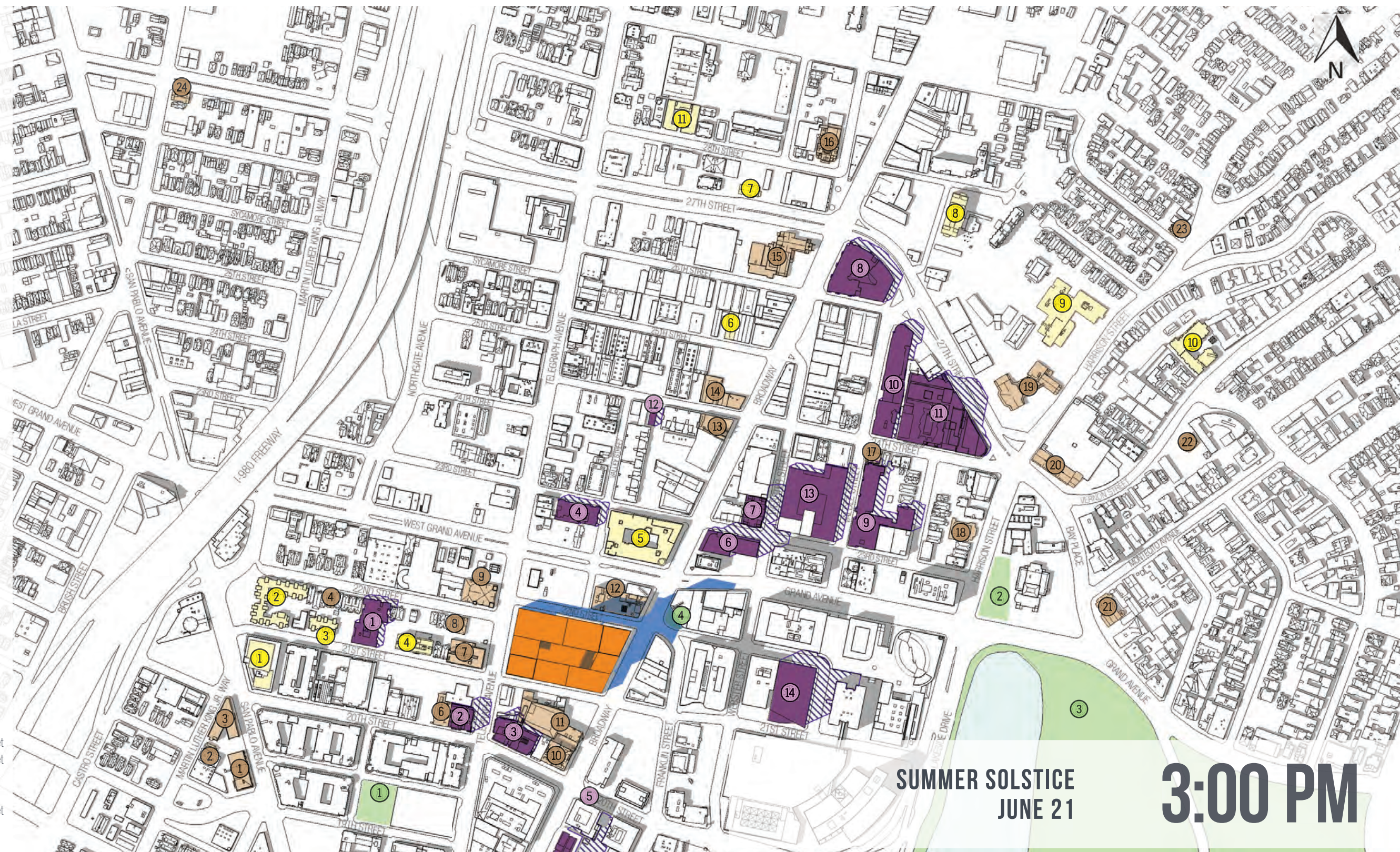
# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# C.1-3C

- Historic Resource Sites
  - 1 1939-1963 San Pablo Avenue
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|  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1 585 22nd Street</li> <li>2 2015 Telegraph</li> <li>3 2016 Telegraph</li> <li>4 459 23rd Street</li> <li>5 1900 Broadway</li> <li>6 2270 Broadway</li> <li>7 2305 Webster</li> </ul> | <ul style="list-style-type: none"> <li>8 2630 Broadway</li> <li>9 2302 Valdez Street</li> <li>10 2400 Valdez Street</li> <li>11 24th &amp; Harrison</li> <li>12 2345 Broadway</li> <li>13 2315 Valdez Street</li> <li>14 2 Kaiser Plaza</li> </ul> |
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SUMMER SOLSTICE  
JUNE 21

# 3:00 PM



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# C.2-1

Historic Resource Sites

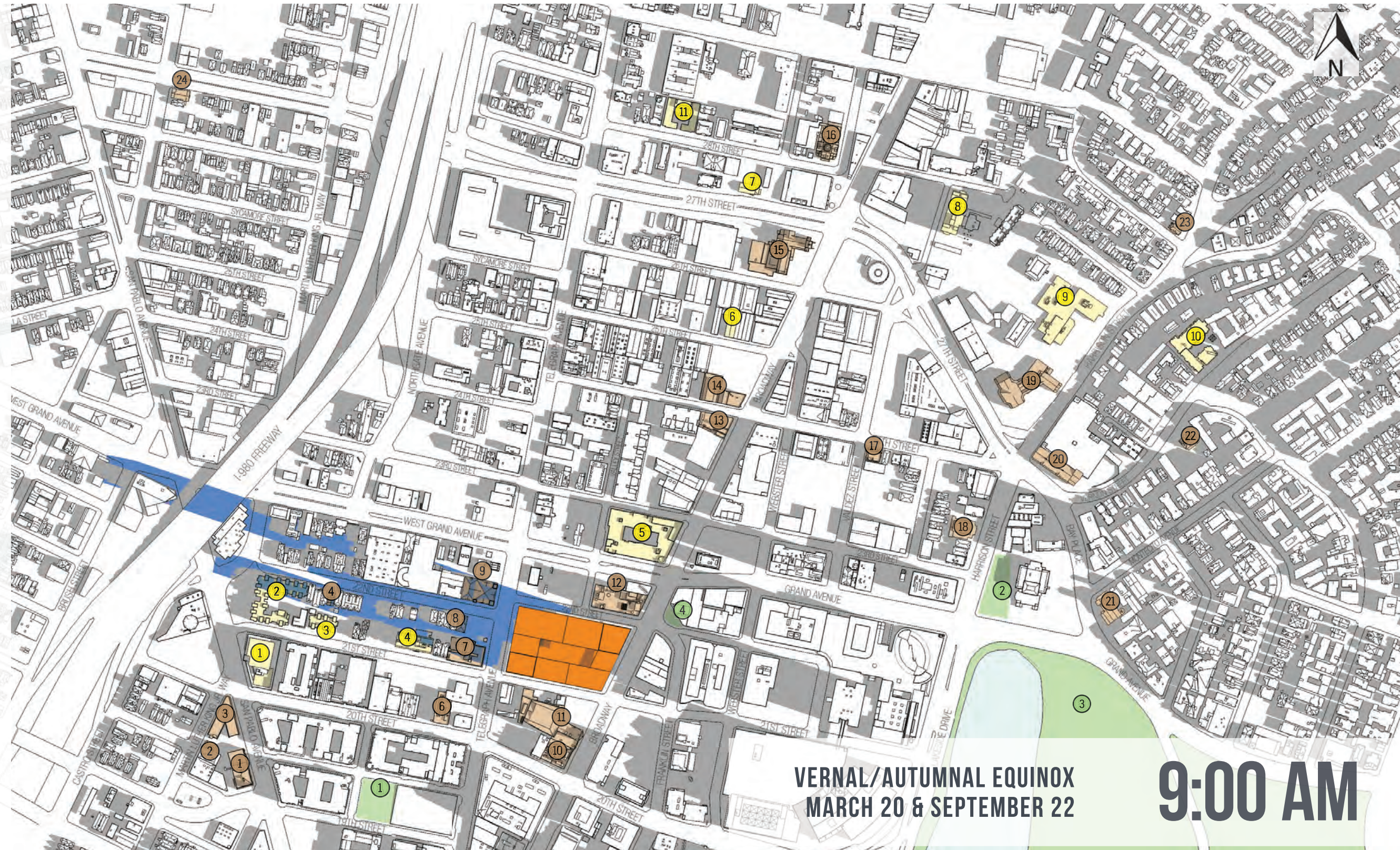
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Public Parks

- 1 Henry J. Kaiser Memorial Park
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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 9:00 AM



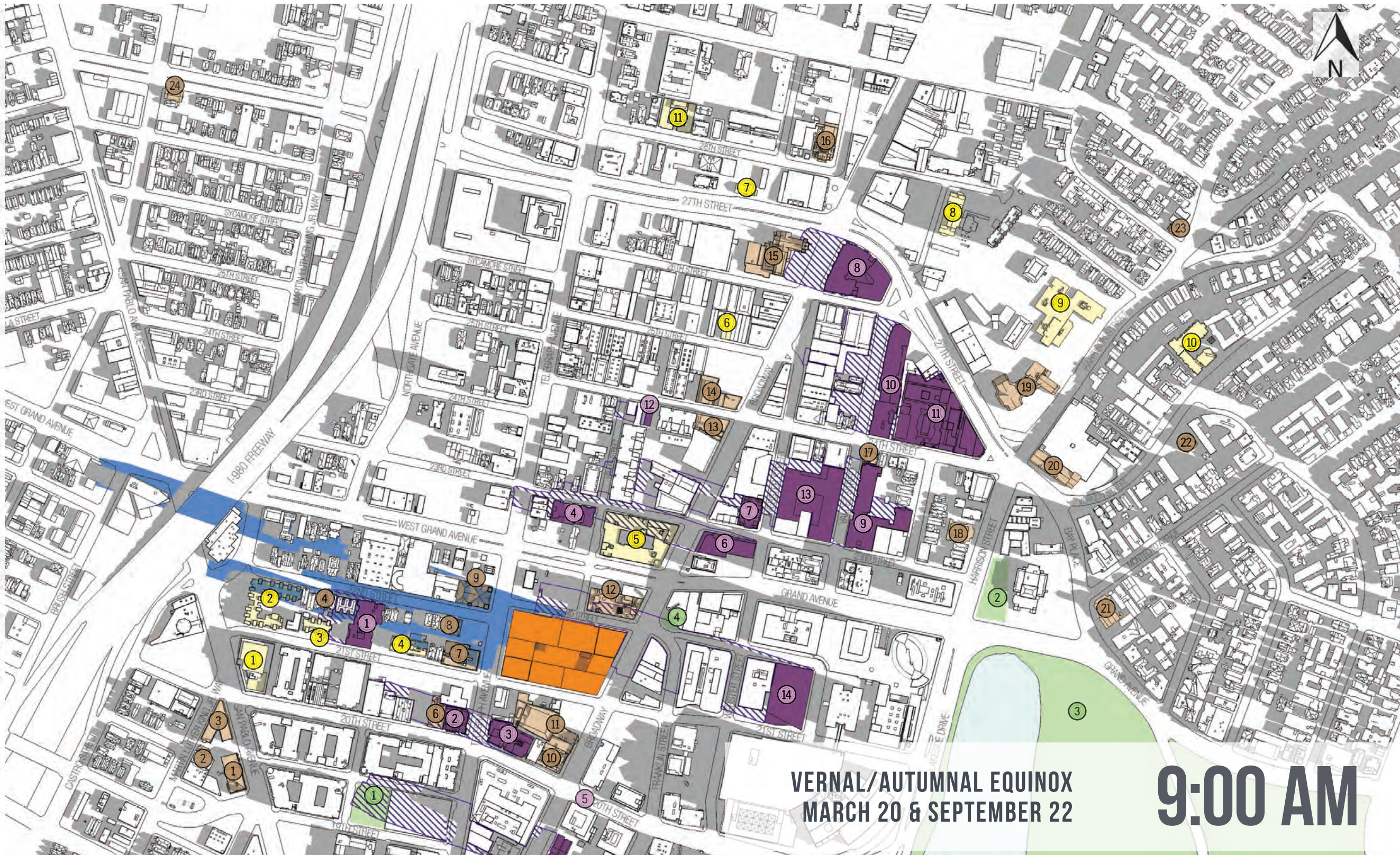
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# C.2-1C

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 9:00 AM

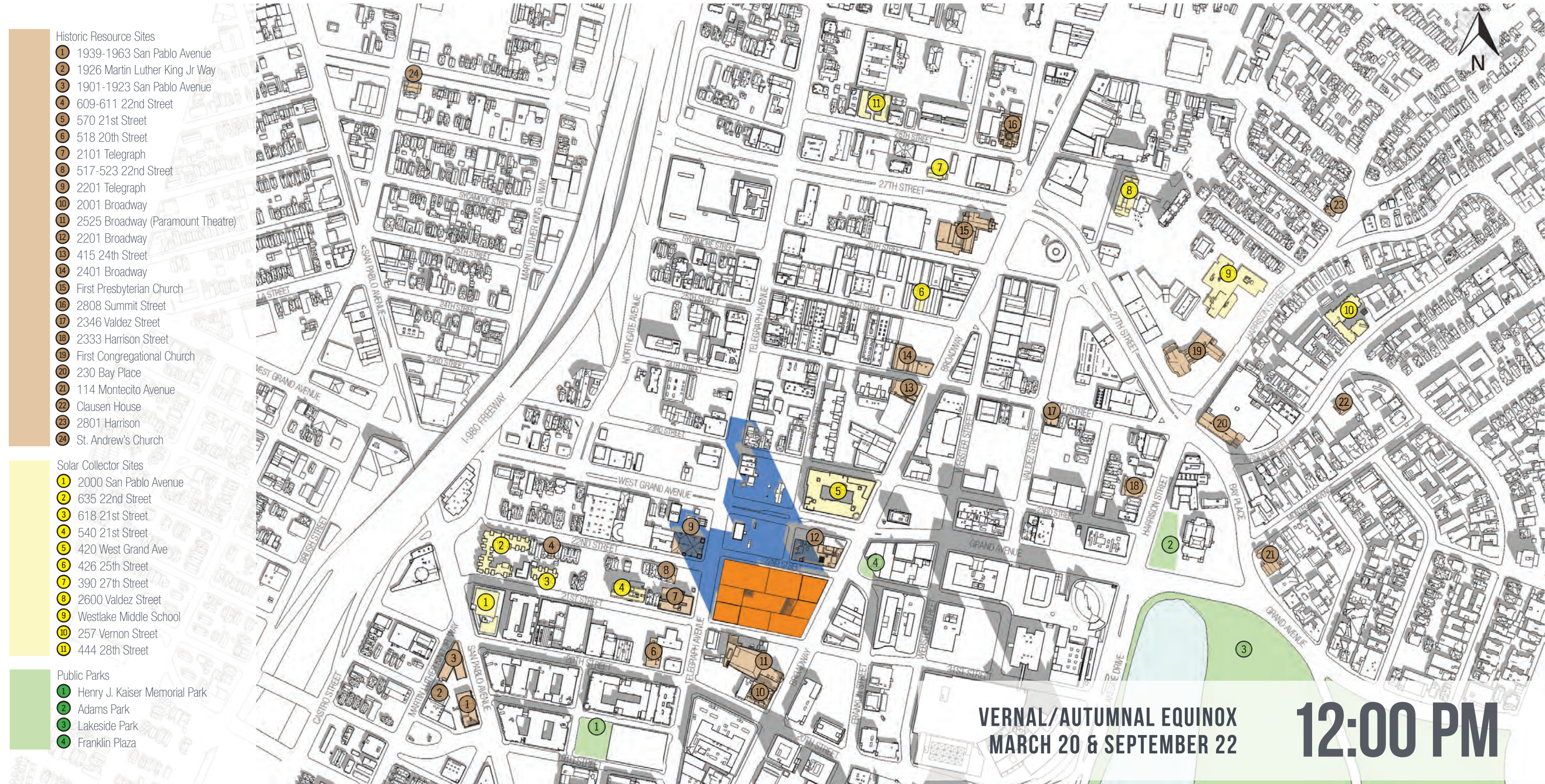


- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# C.2-2



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Public Parks

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 12:00 PM



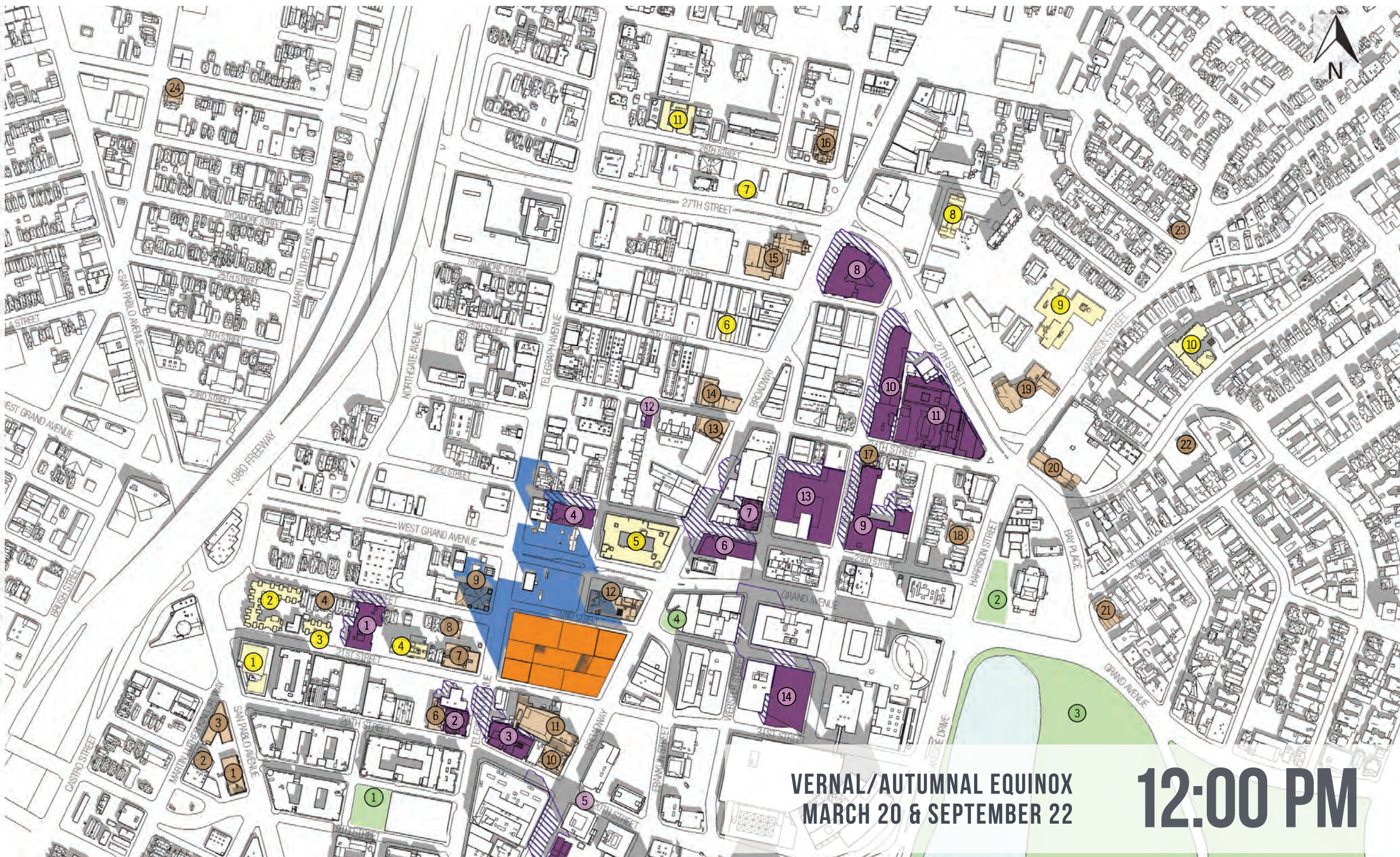
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# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# C.2-2C

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- 13 2315 Valdez Street
- 14 2 Kaiser Plaza



VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 12:00 PM



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Vernal/Autumnal Equinoxes

# C.2-3

**Historic Resource Sites**

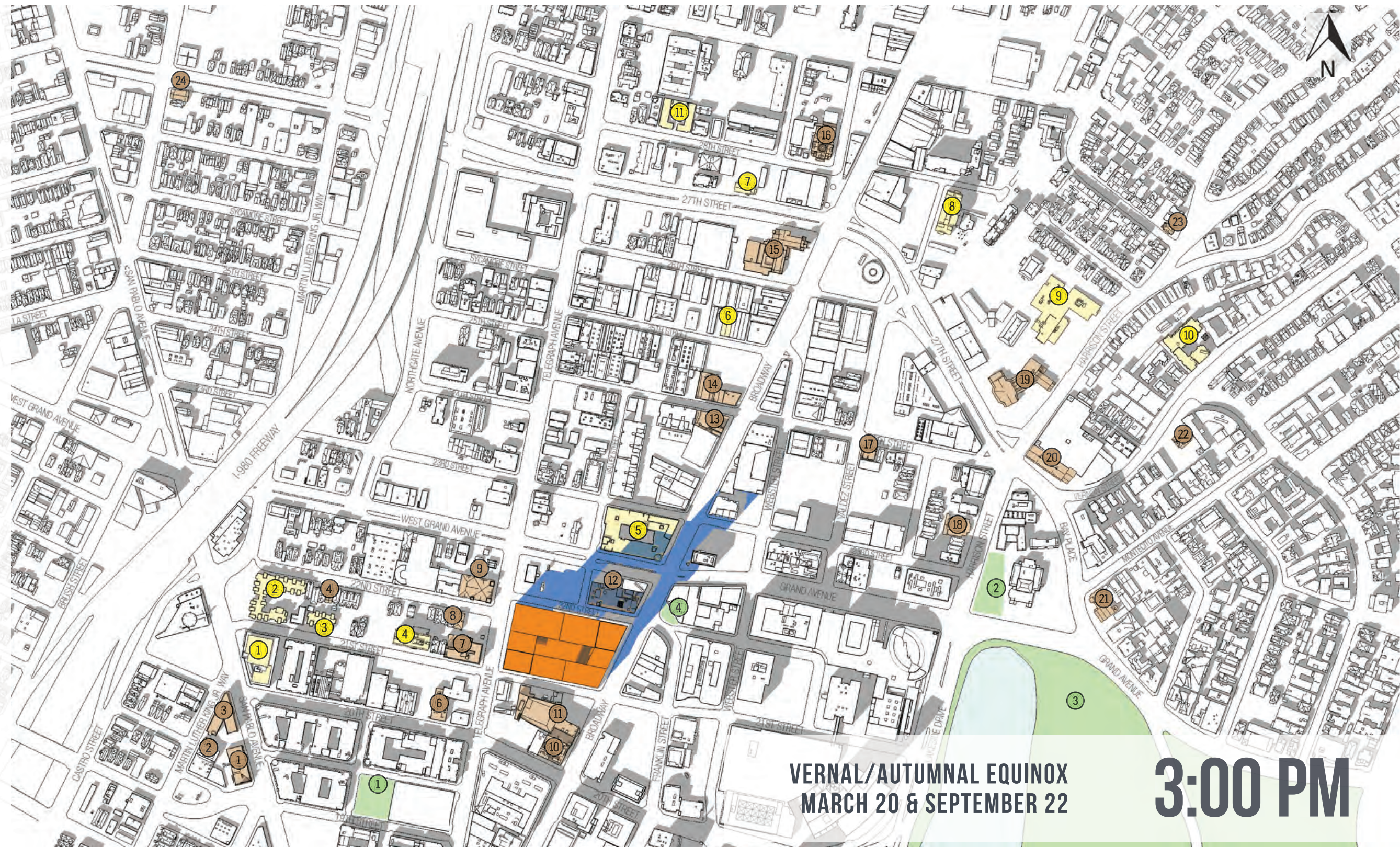
- 1 1939-1963 San Pablo Avenue
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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 3:00 PM



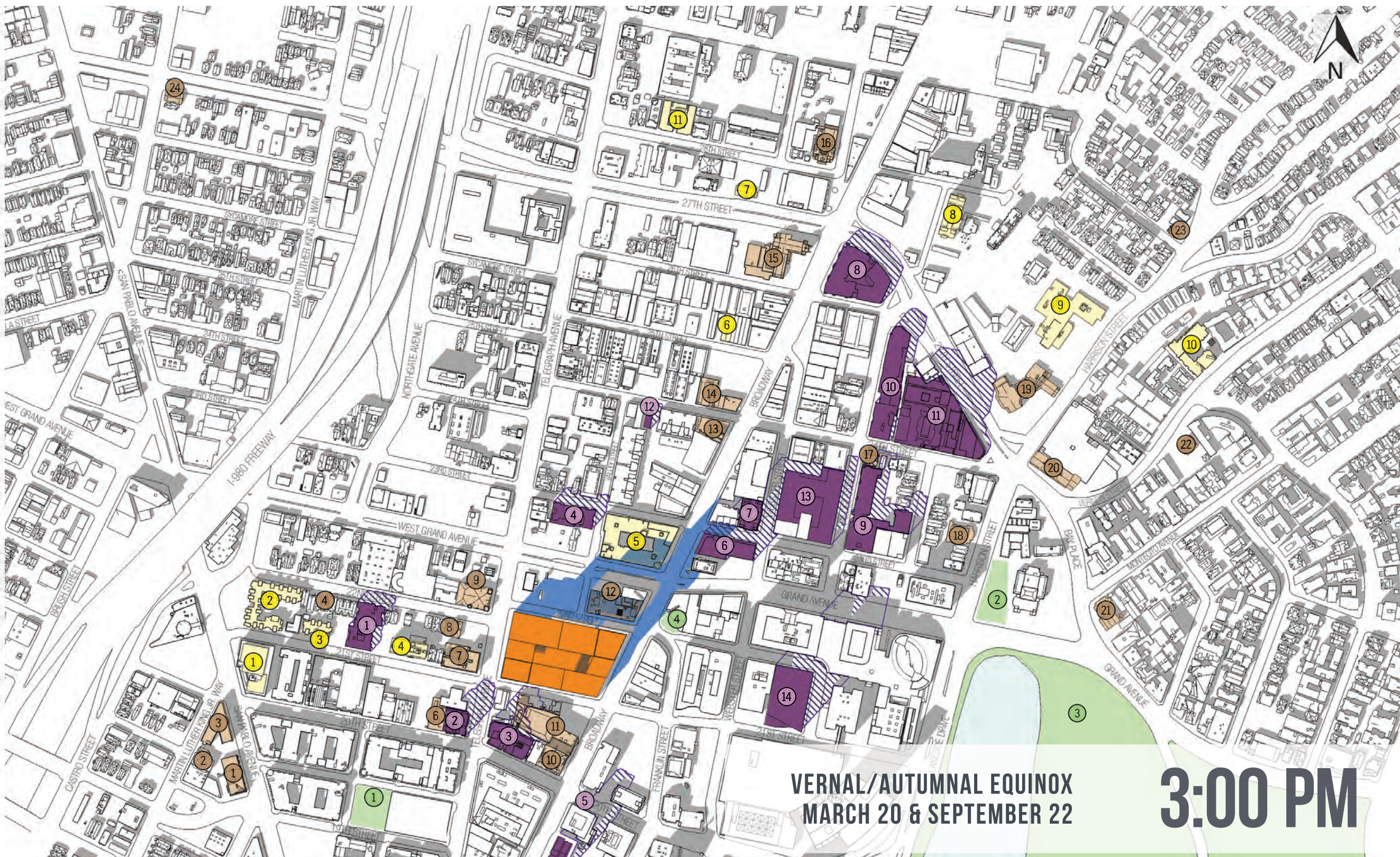
- Proposed Project
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# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 3:00 PM



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Winter Solstice

# C.3-1

Historic Resource Sites

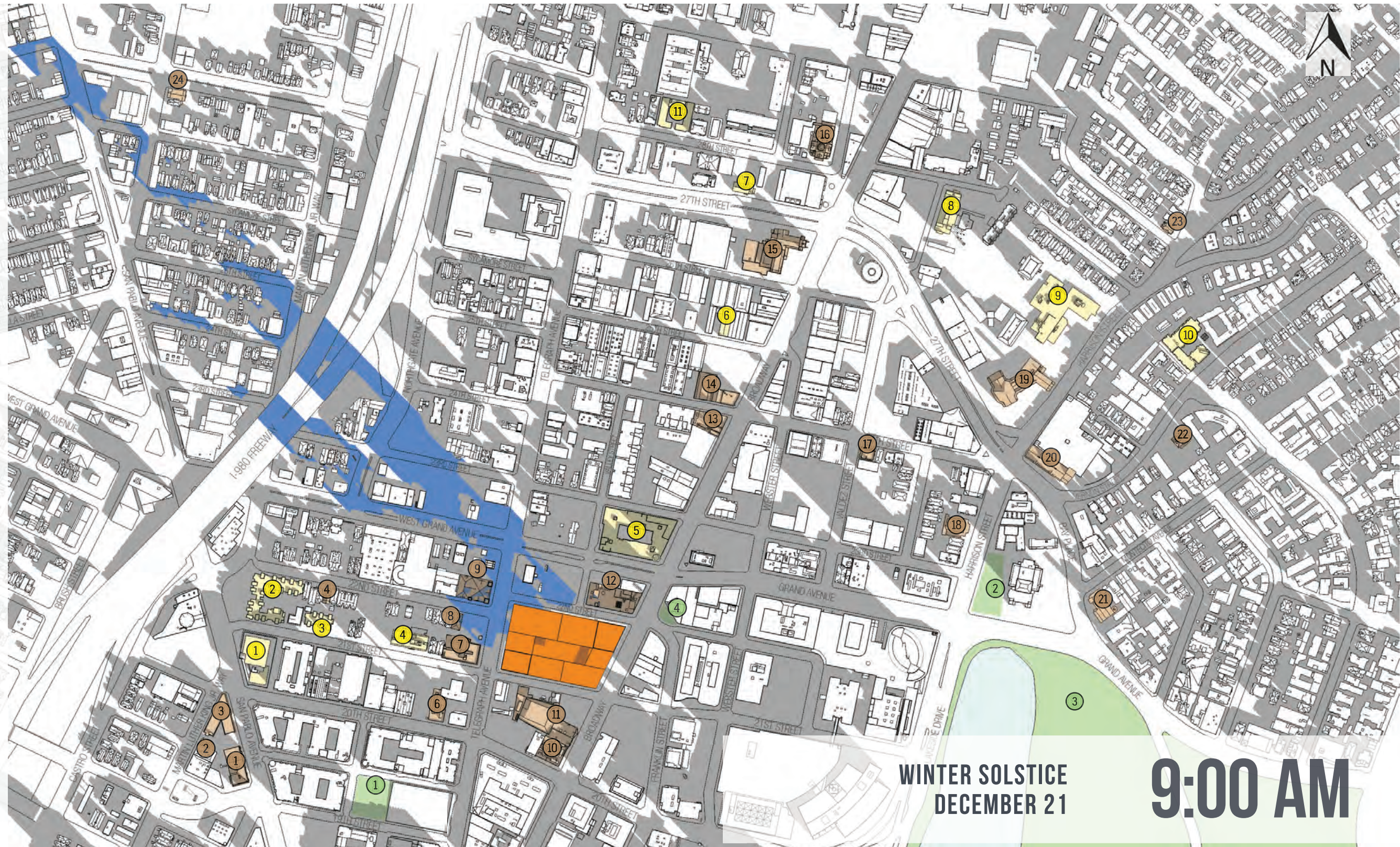
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Public Parks

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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM



- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# C.3-1C

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  - 1 1939-1963 San Pablo Avenue
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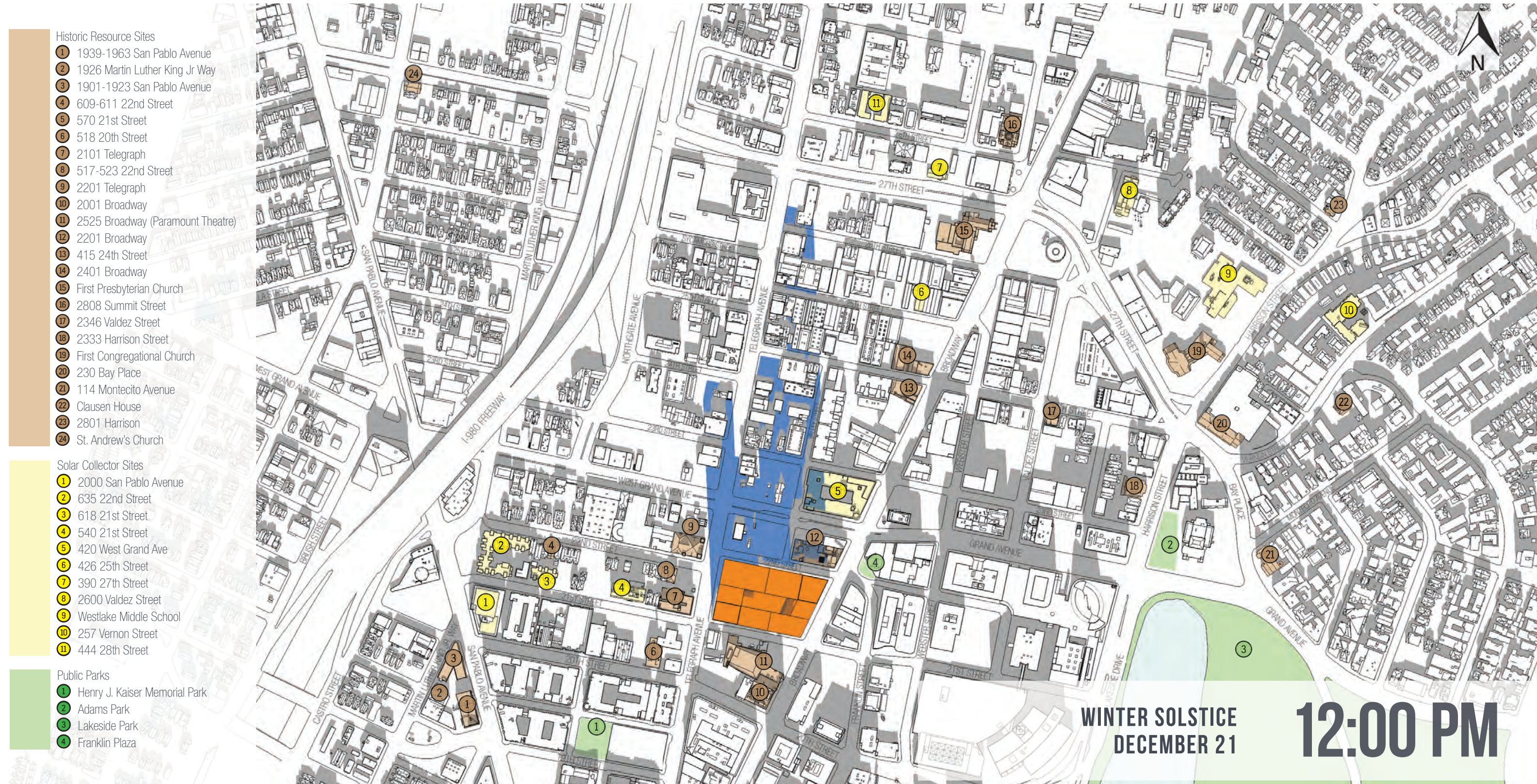
WINTER SOLSTICE  
DECEMBER 21  
**9:00 AM**



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Winter Solstice

# C.3-2



**Historic Resource Sites**

- 1 1939-1963 San Pablo Avenue
- 2 1926 Martin Luther King Jr Way
- 3 1901-1923 San Pablo Avenue
- 4 609-611 22nd Street
- 5 570 21st Street
- 6 518 20th Street
- 7 2101 Telegraph
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- 20 230 Bay Place
- 21 114 Montecito Avenue
- 22 Clausen House
- 23 2801 Harrison
- 24 St. Andrew's Church

**Solar Collector Sites**

- 1 2000 San Pablo Avenue
- 2 635 22nd Street
- 3 618 21st Street
- 4 540 21st Street
- 5 420 West Grand Ave
- 6 426 25th Street
- 7 390 27th Street
- 8 2600 Valdez Street
- 9 Westlake Middle School
- 10 257 Vernon Street
- 11 444 28th Street

**Public Parks**

- 1 Henry J. Kaiser Memorial Park
- 2 Adams Park
- 3 Lakeside Park
- 4 Franklin Plaza

WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM



- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# C.3-2C

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- 14 2 Kaiser Plaza



WINTER SOLSTICE  
DECEMBER 21  
**12:00 PM**



# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO

Shading diagrams on the Winter Solstice

# C.3-3

**Historic Resource Sites**

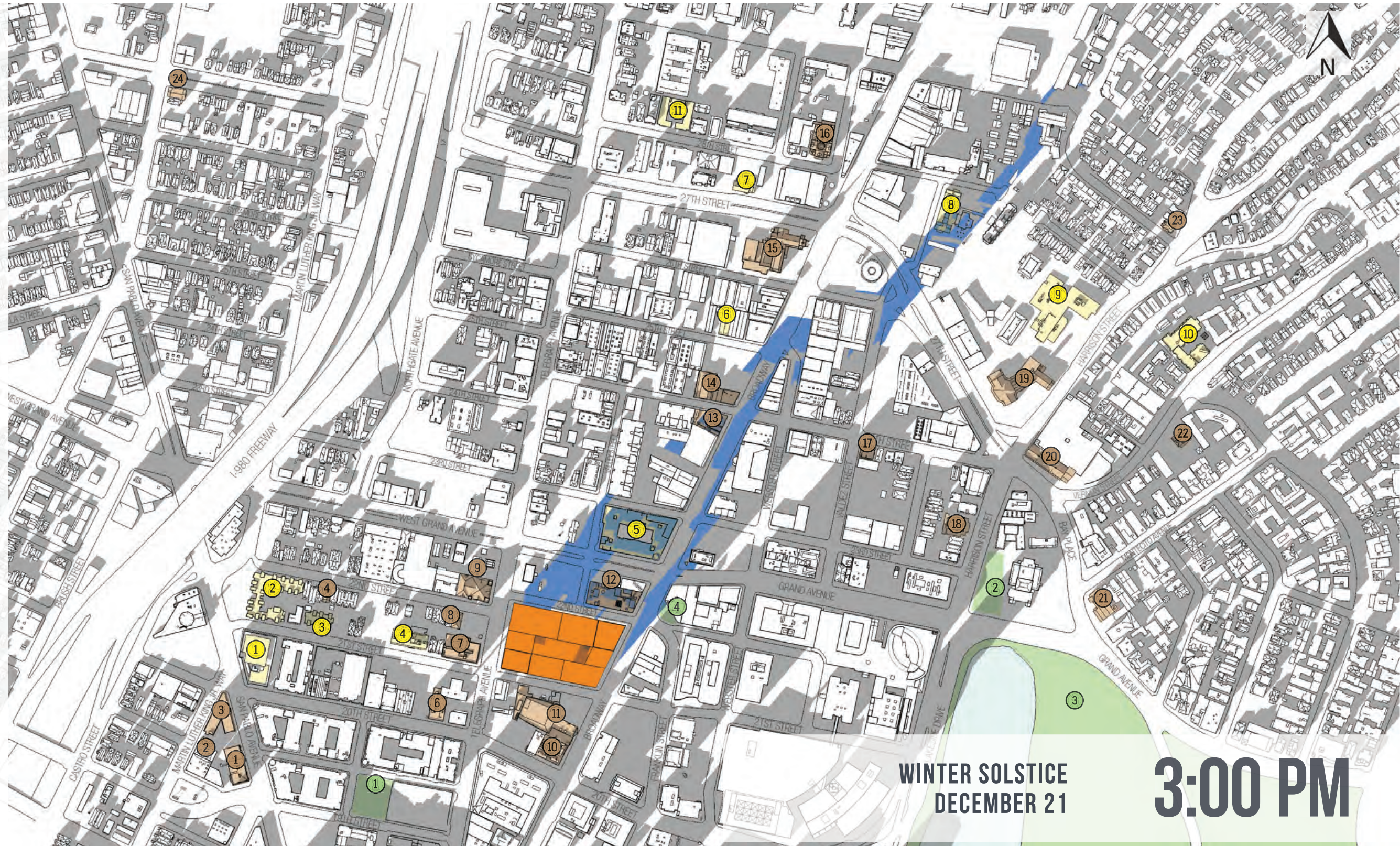
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WINTER SOLSTICE  
DECEMBER 21

# 3:00 PM



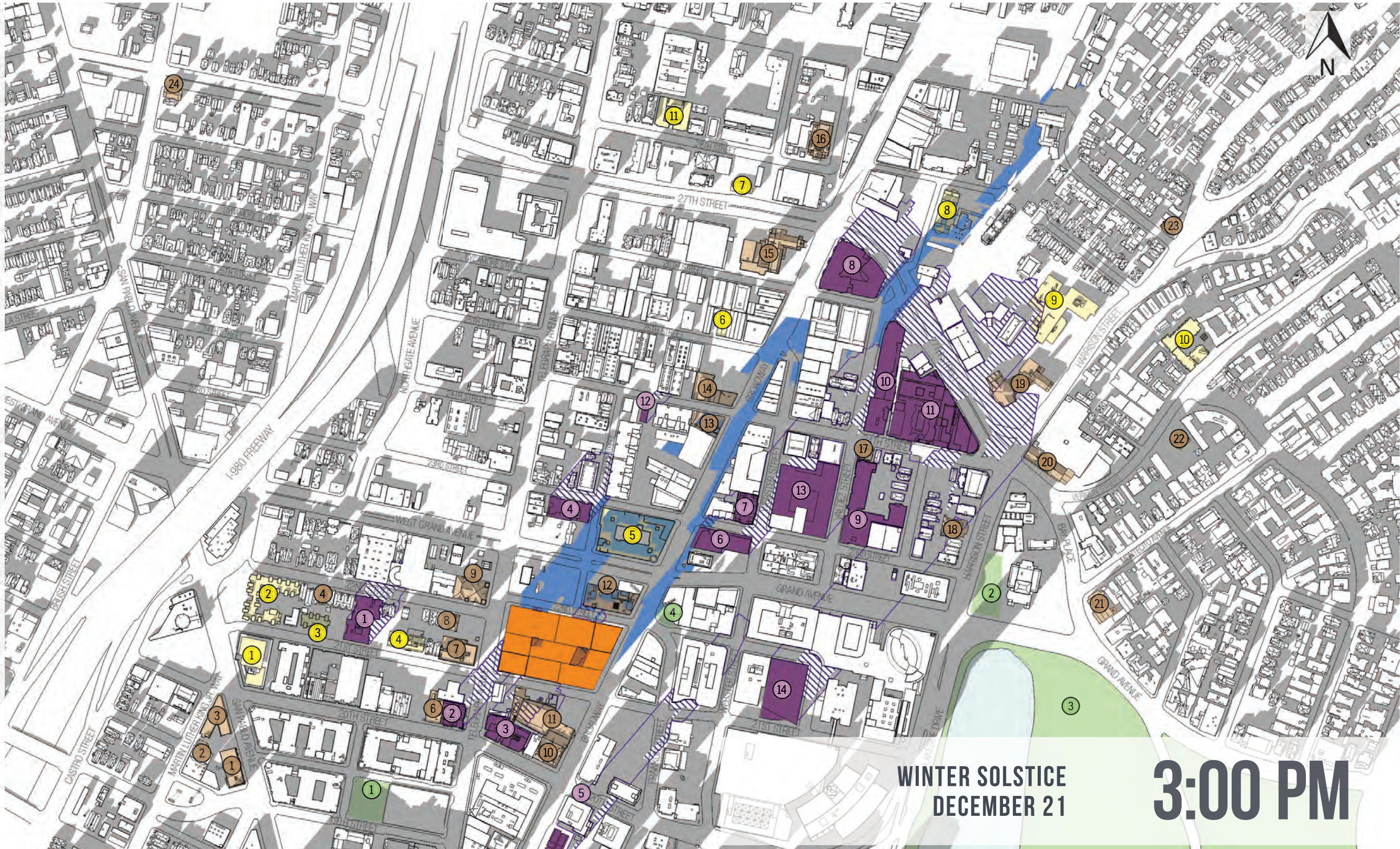
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: MAXIMUM OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# C.3-3C

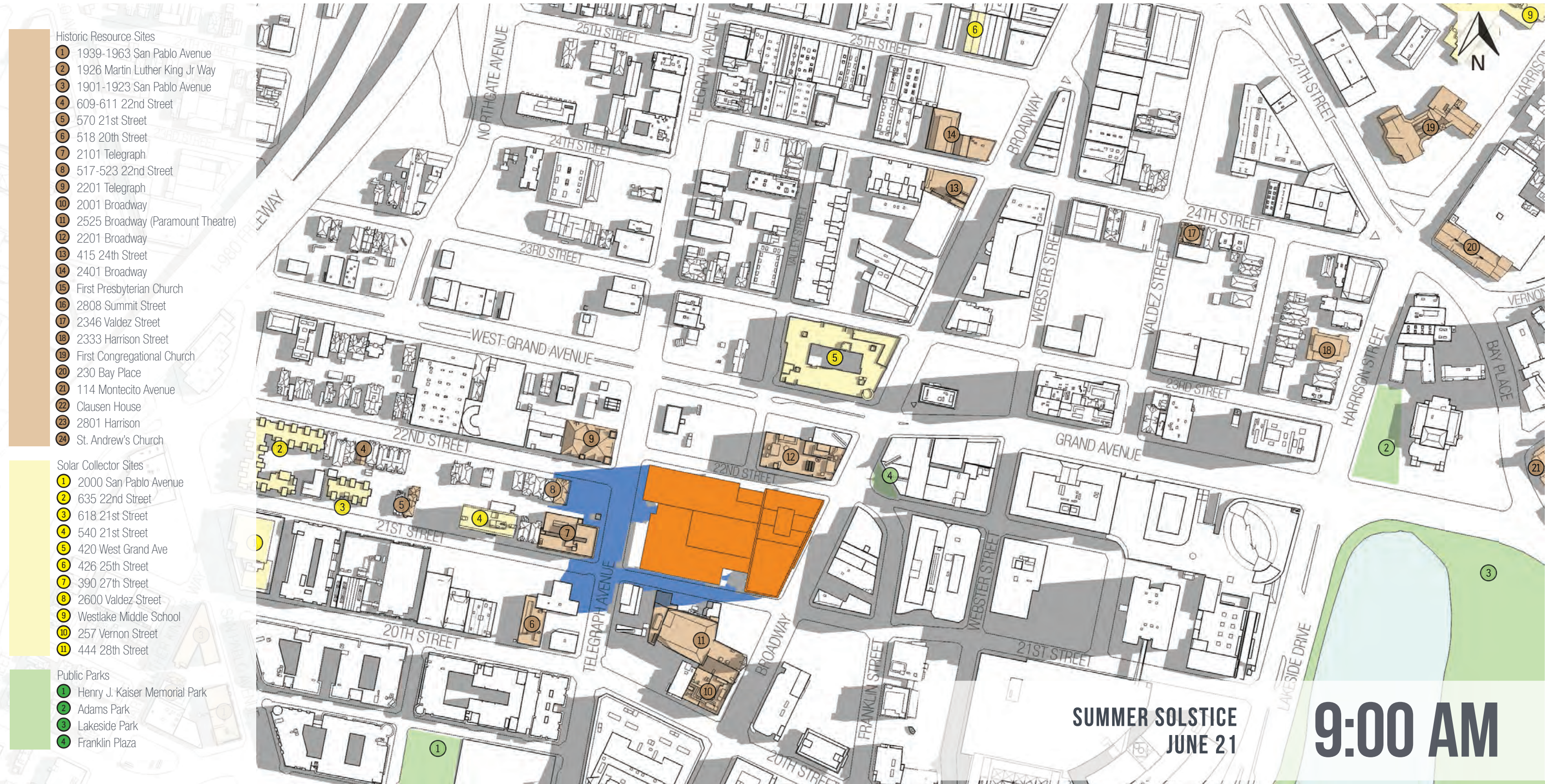
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WINTER SOLSTICE  
DECEMBER 21

# 3:00 PM





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**SUMMER SOLSTICE  
JUNE 21**

**9:00 AM**



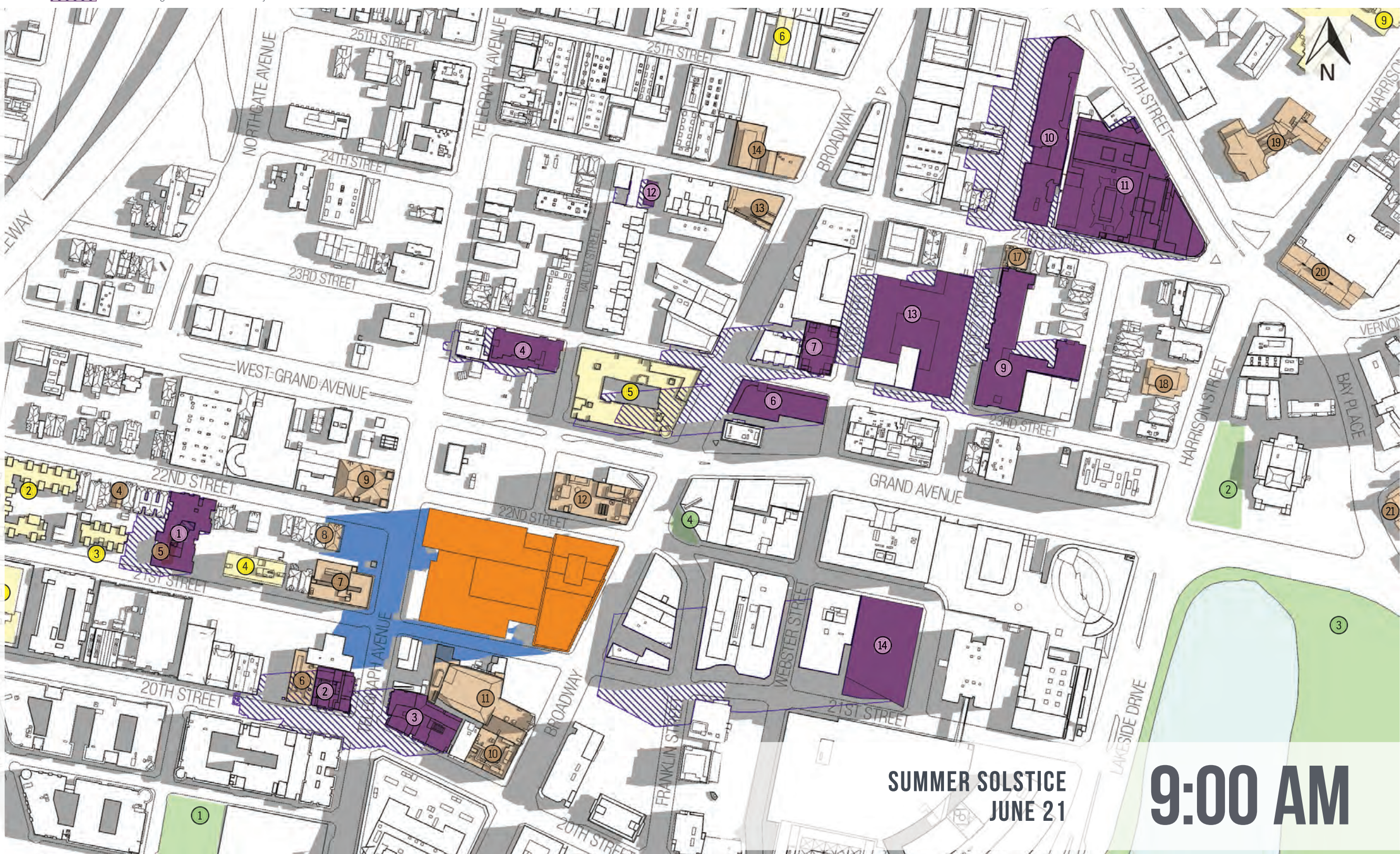
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# D.1-1C

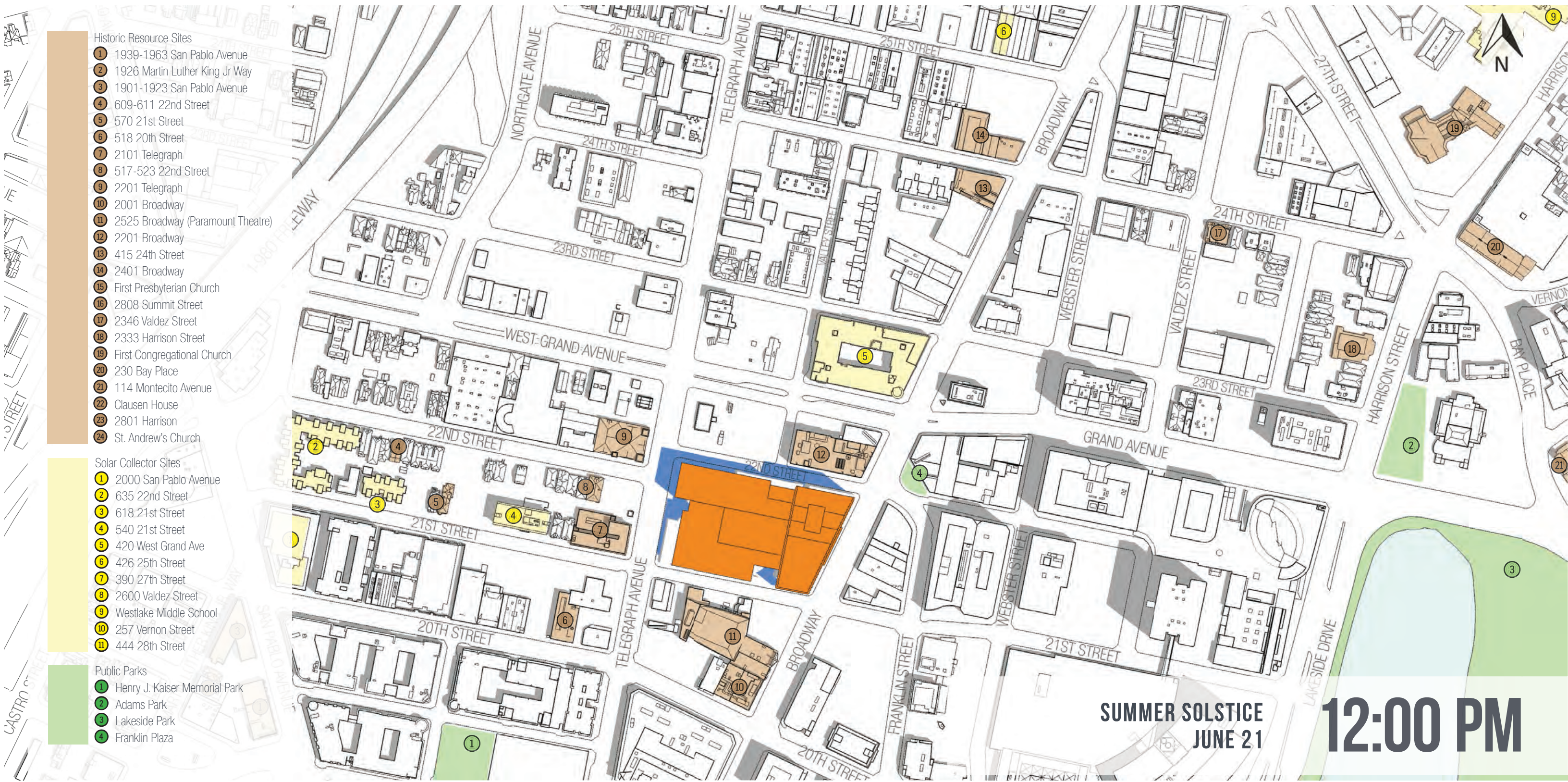
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SUMMER SOLSTICE  
JUNE 21

# 9:00 AM





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SUMMER SOLSTICE  
JUNE 21

# 12:00 PM



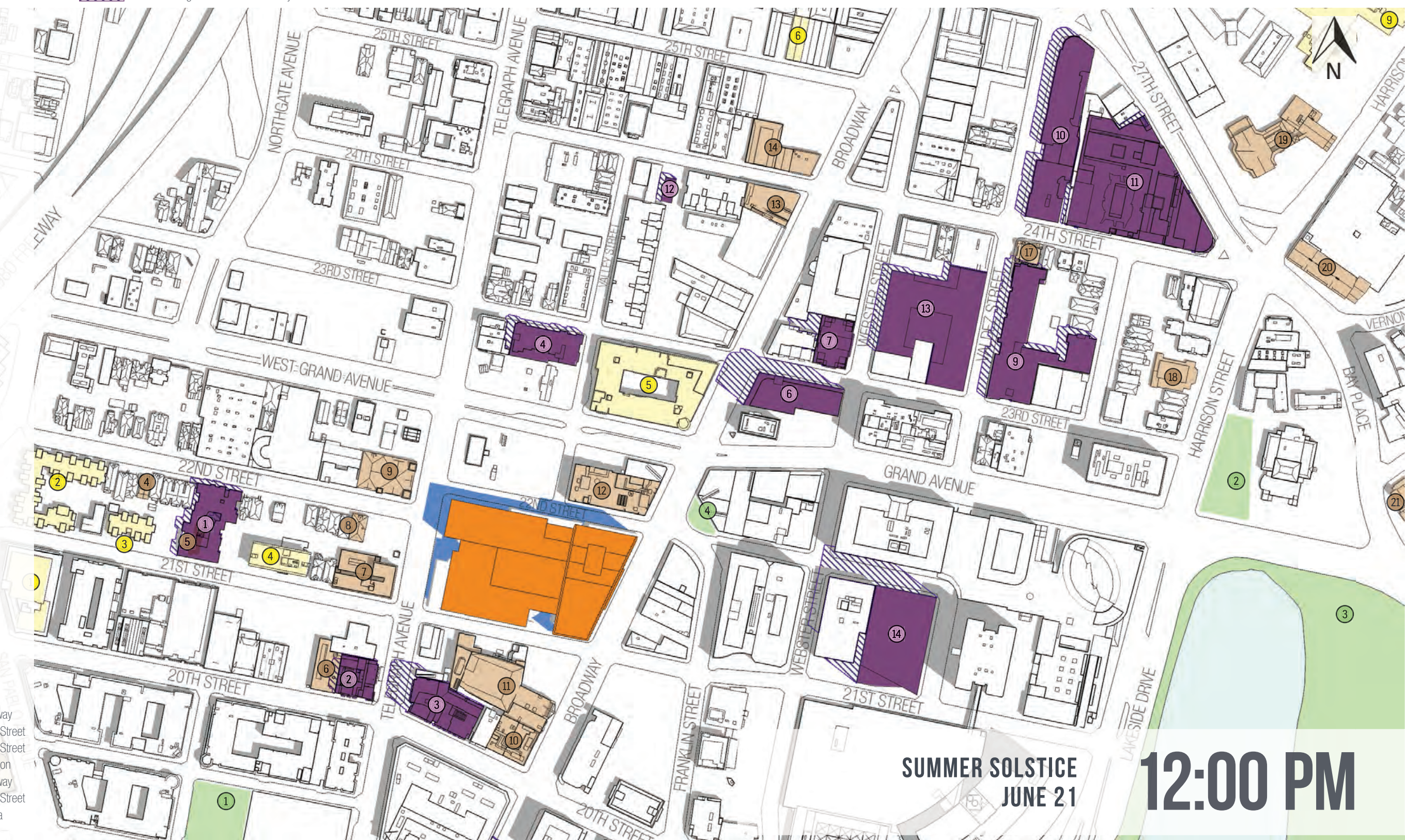
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# D.1-2C

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SUMMER SOLSTICE  
JUNE 21

# 12:00 PM



Historic Resource Sites

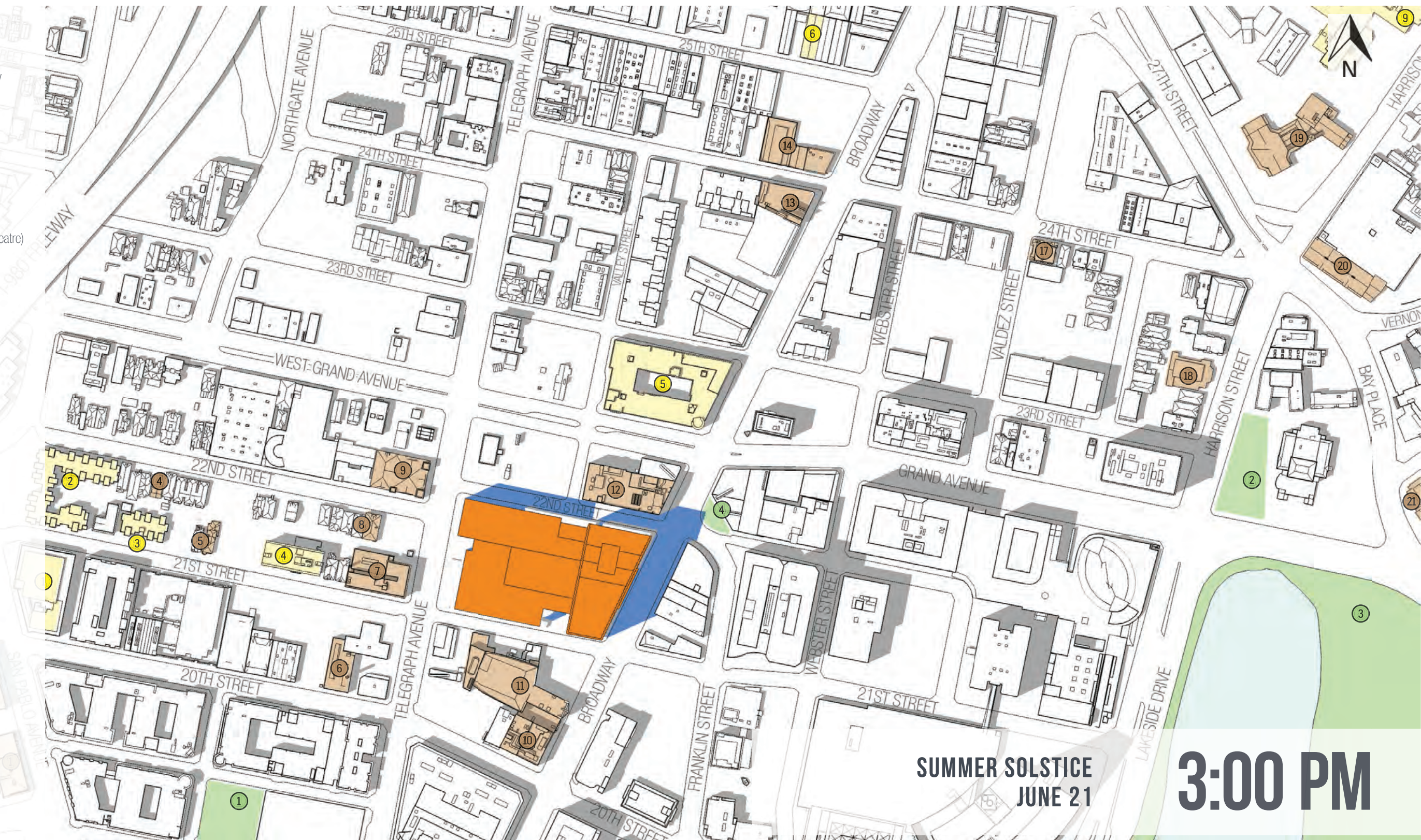
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SUMMER SOLSTICE  
JUNE 21

# 3:00 PM



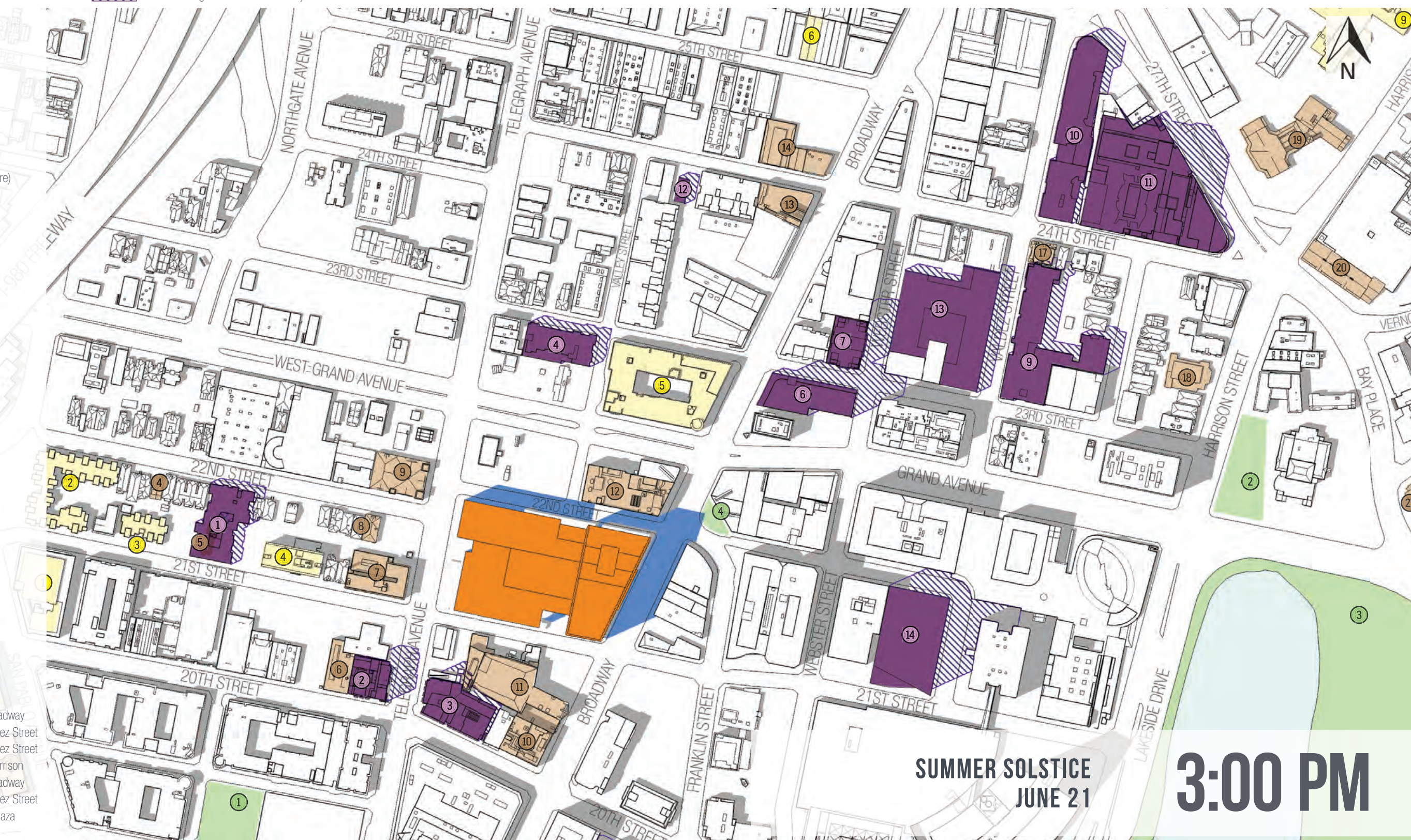
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Summer Solstice

# D.1-3C

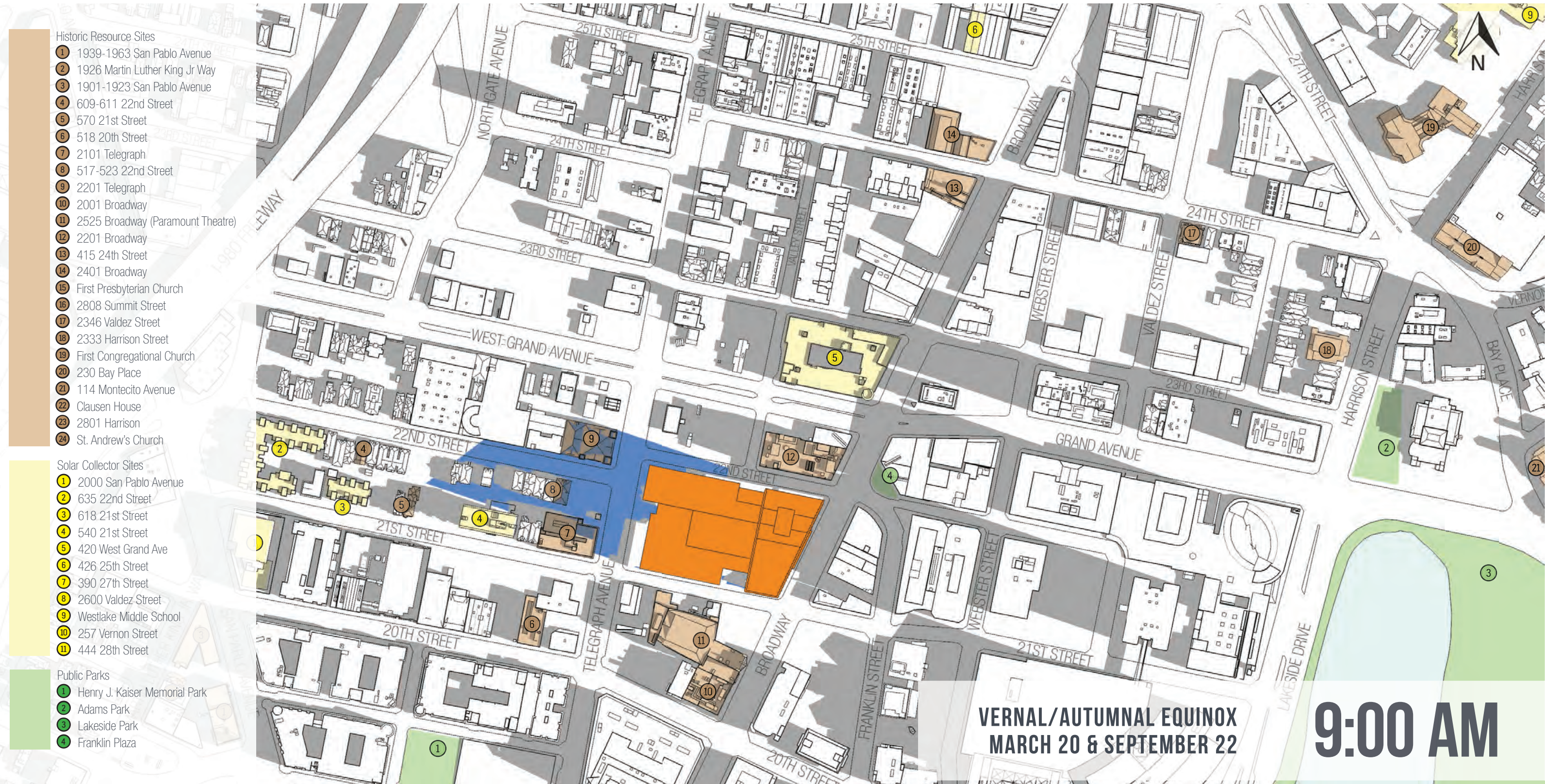
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SUMMER SOLSTICE  
JUNE 21

# 3:00 PM





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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 9:00 AM



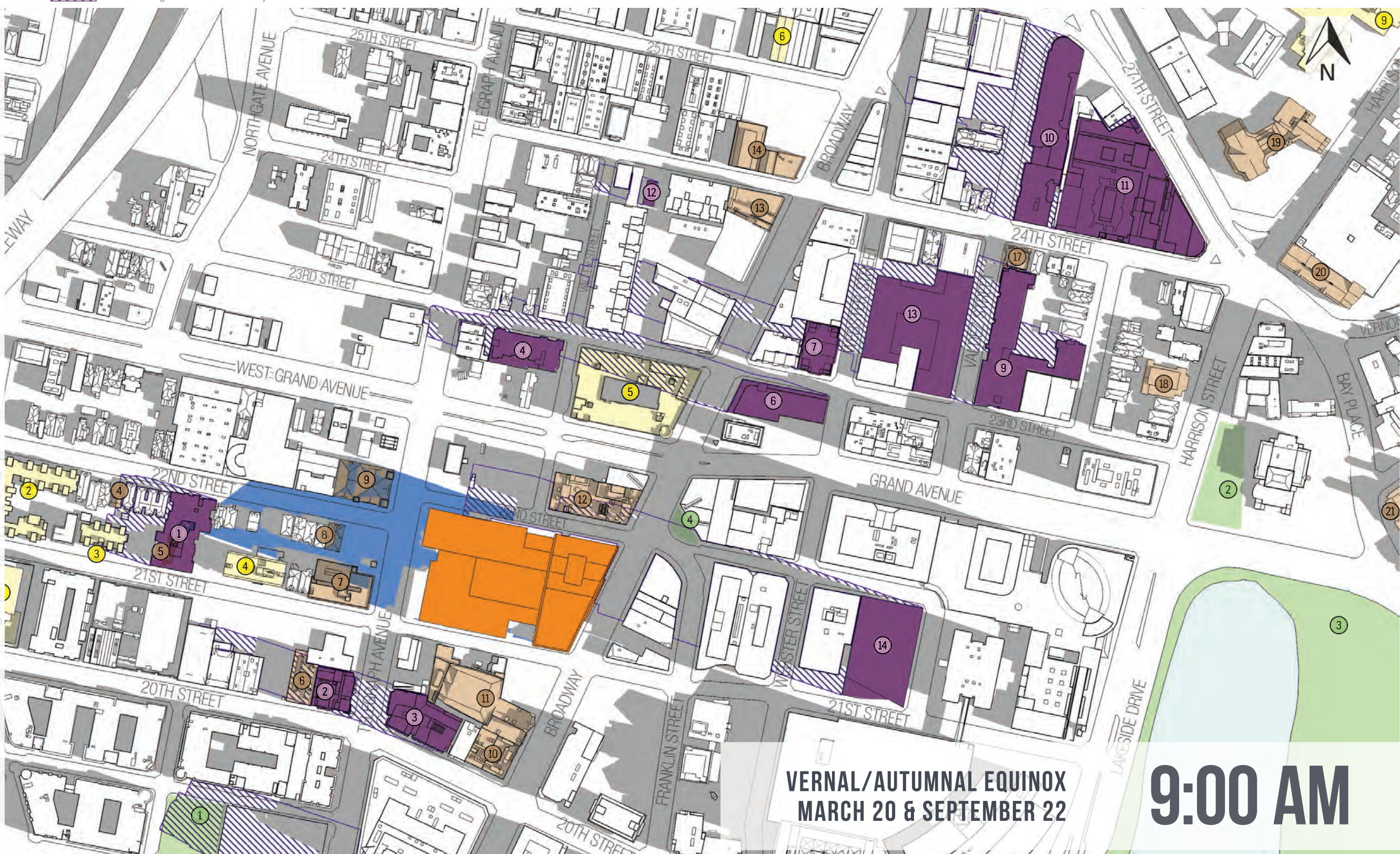
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- Existing (current) Shadows
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

# D.2-1C

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

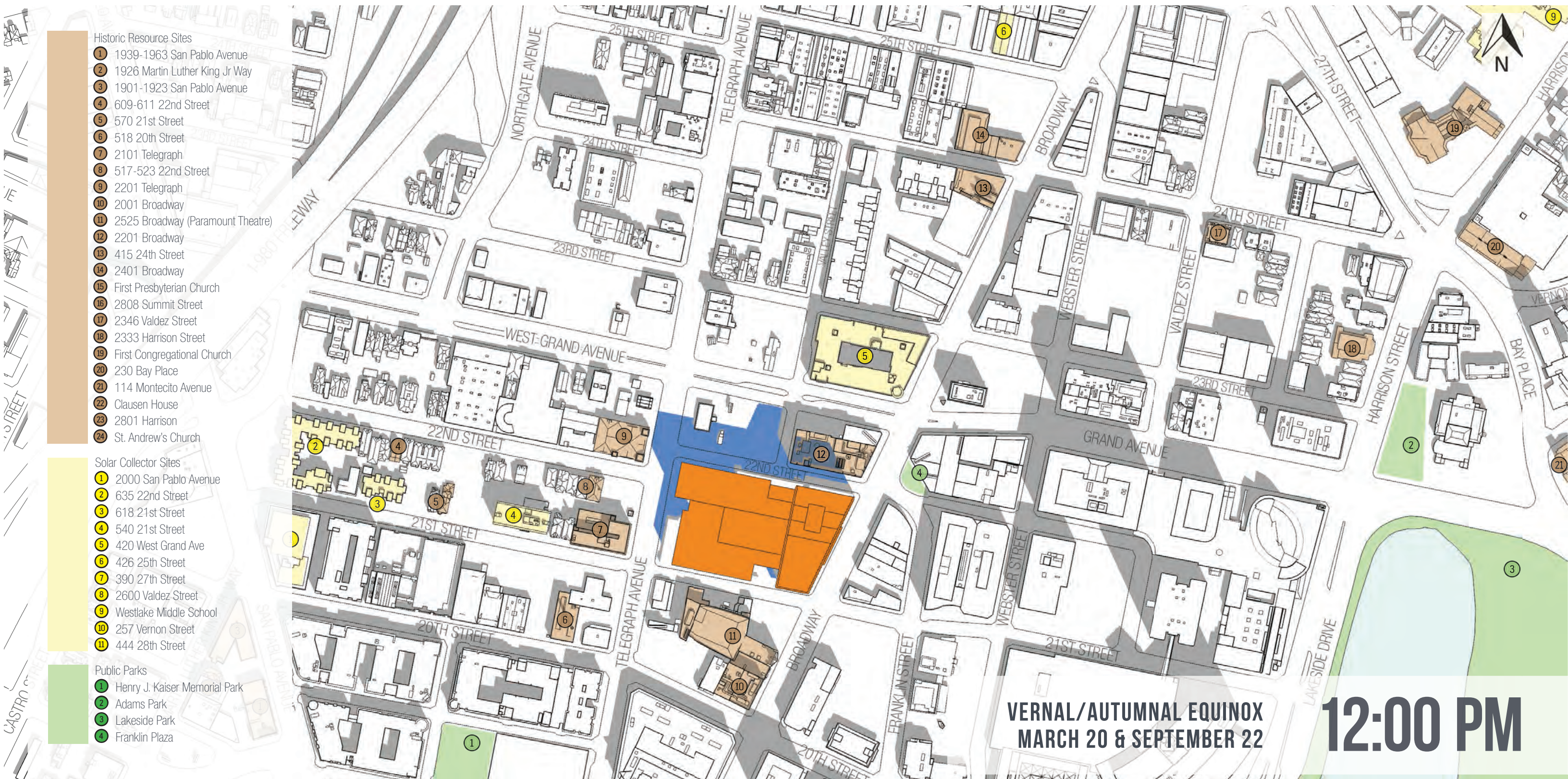
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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 9:00 AM





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**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 12:00 PM



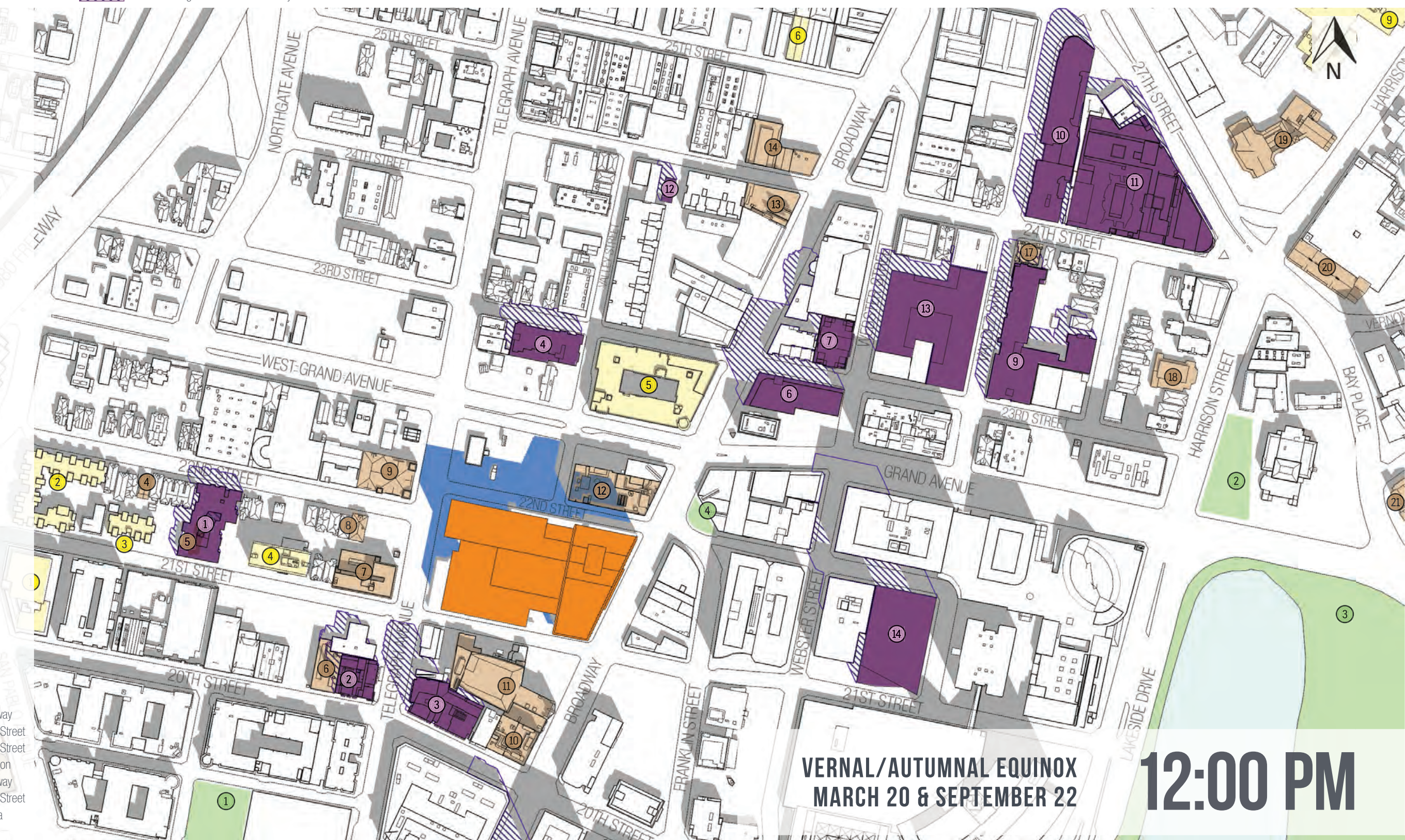
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# D.2-2C

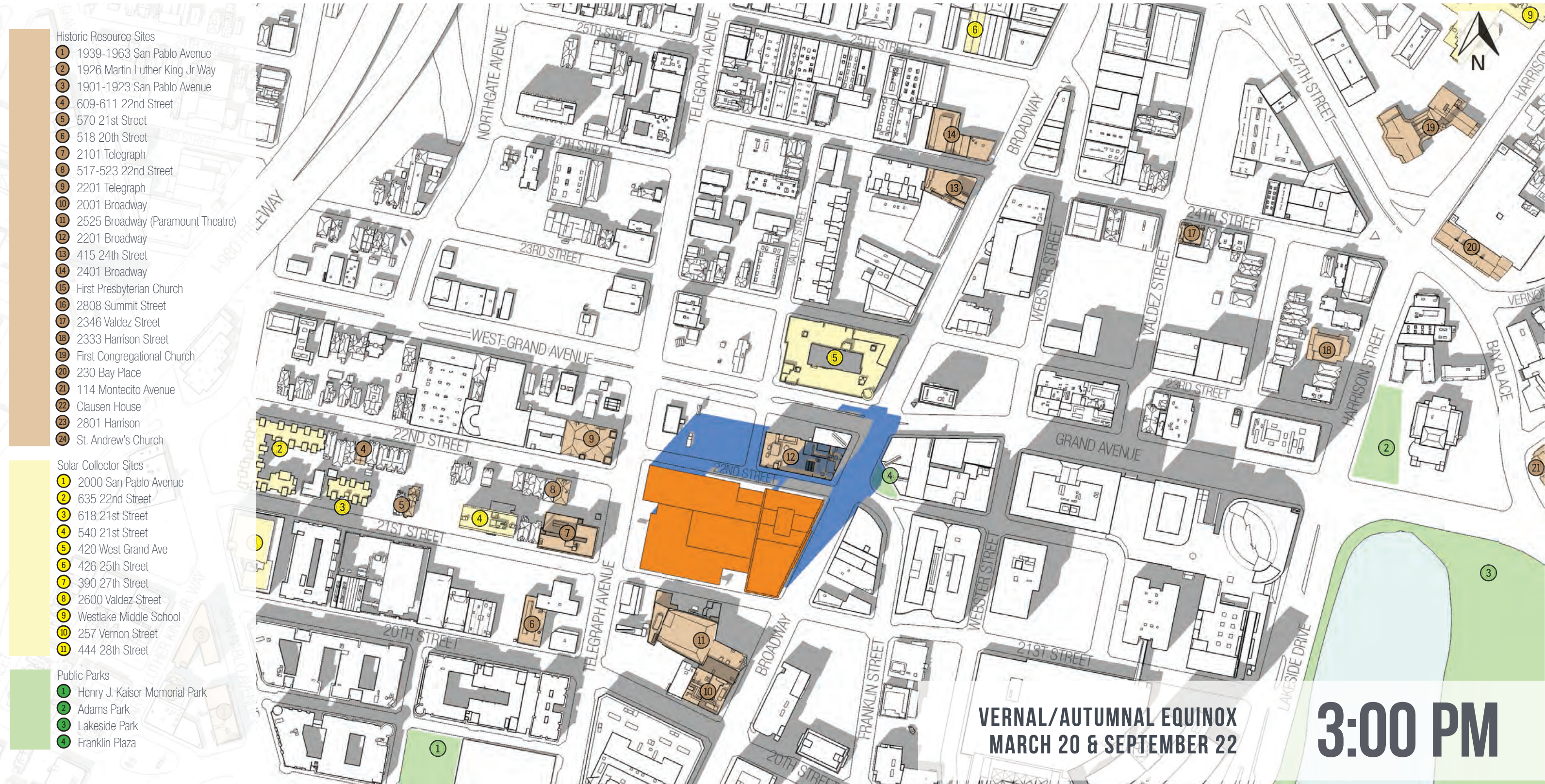
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VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22

# 12:00 PM





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- 2 Adams Park
- 3 Lakeside Park
- 4 Franklin Plaza

**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

**3:00 PM**



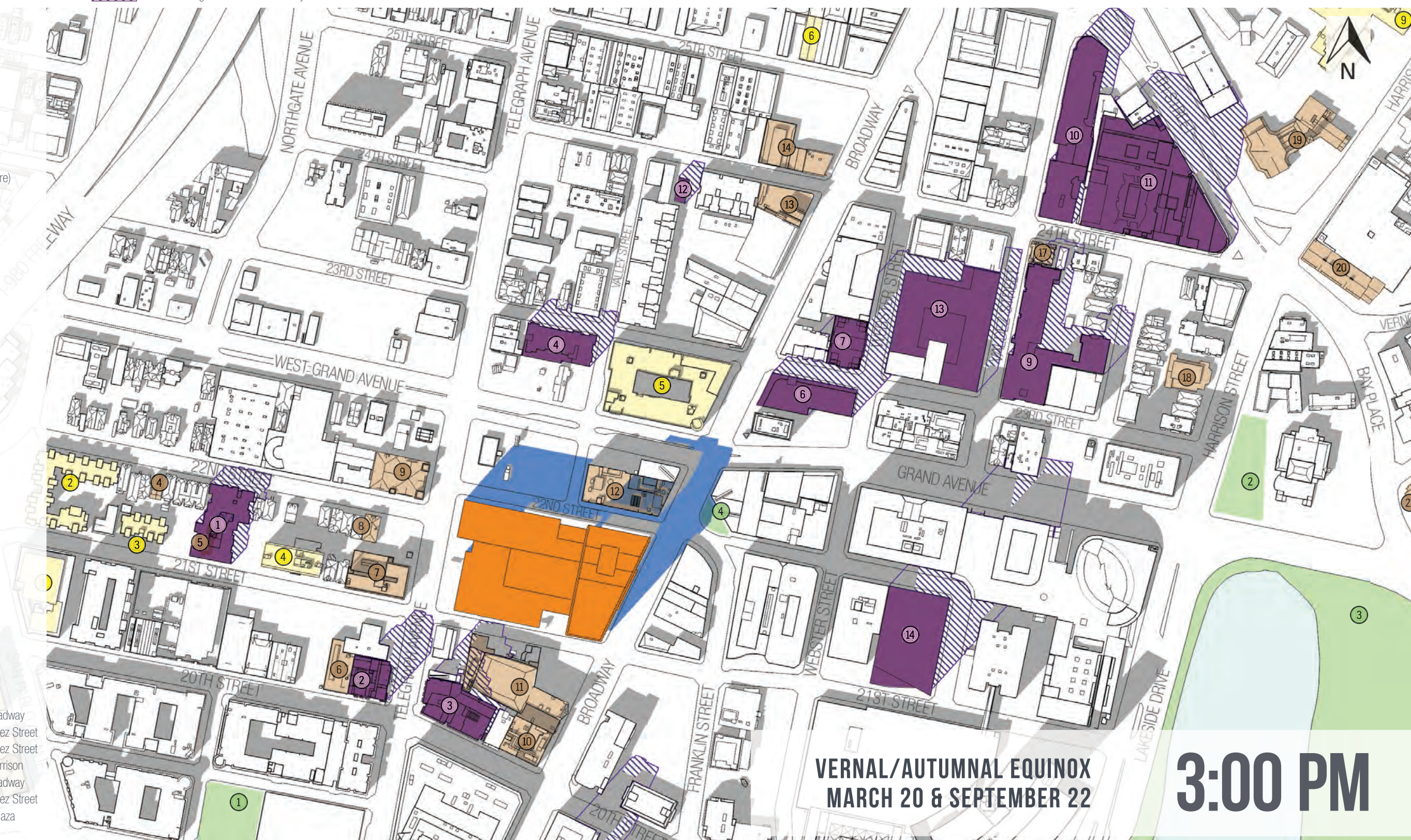
- Proposed Project
- Existing (current) Shadows
- New Shading by Proposed Project
- New Shading from Cumulative Projects

# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Vernal/Autumnal Equinoxes

# D.2-3C

- Historic Resource Sites**
- 1 1939-1963 San Pablo Avenue
- 2 1926 Martin Luther King Jr Way
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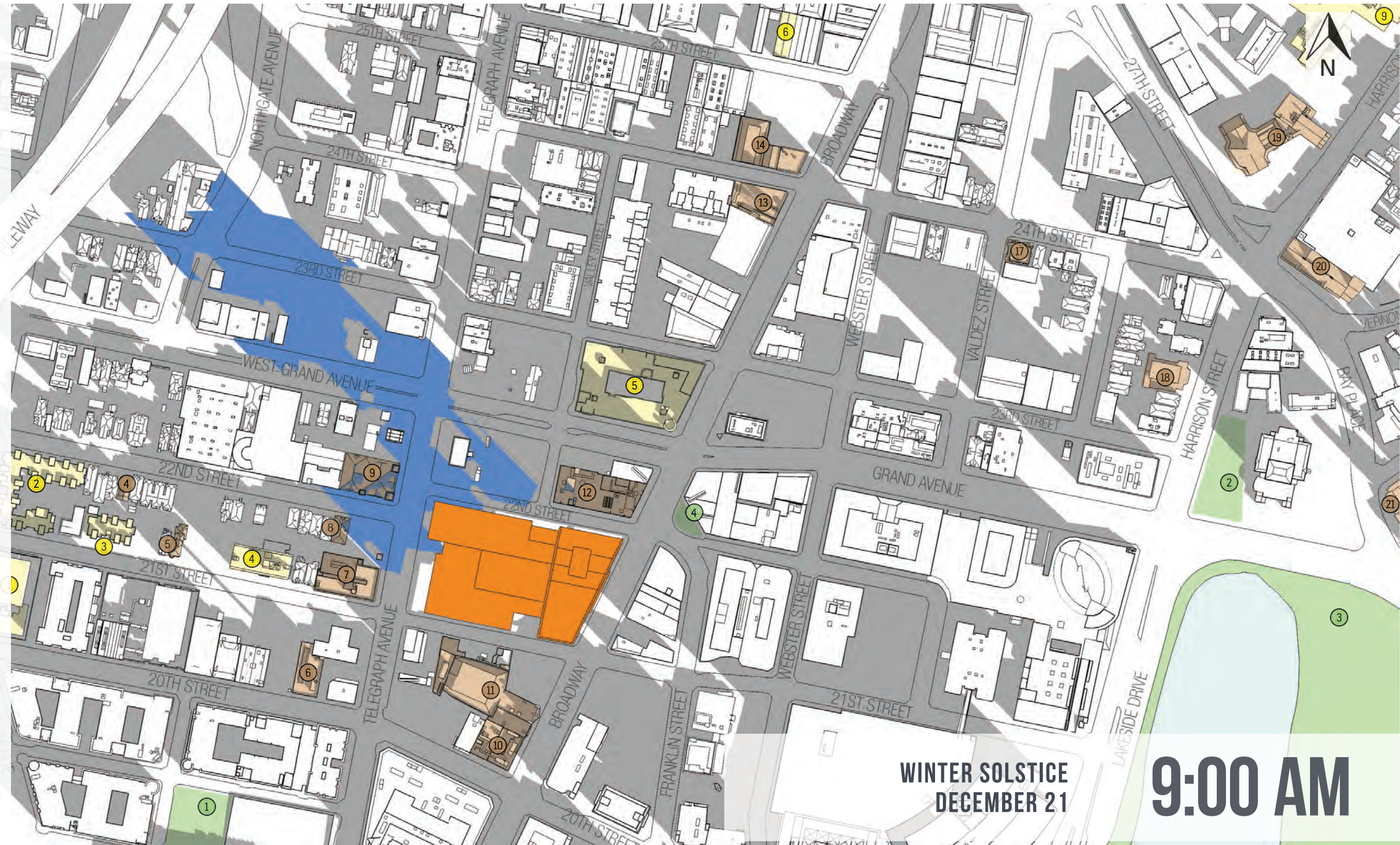


**VERNAL/AUTUMNAL EQUINOX  
MARCH 20 & SEPTEMBER 22**

# 3:00 PM



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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM



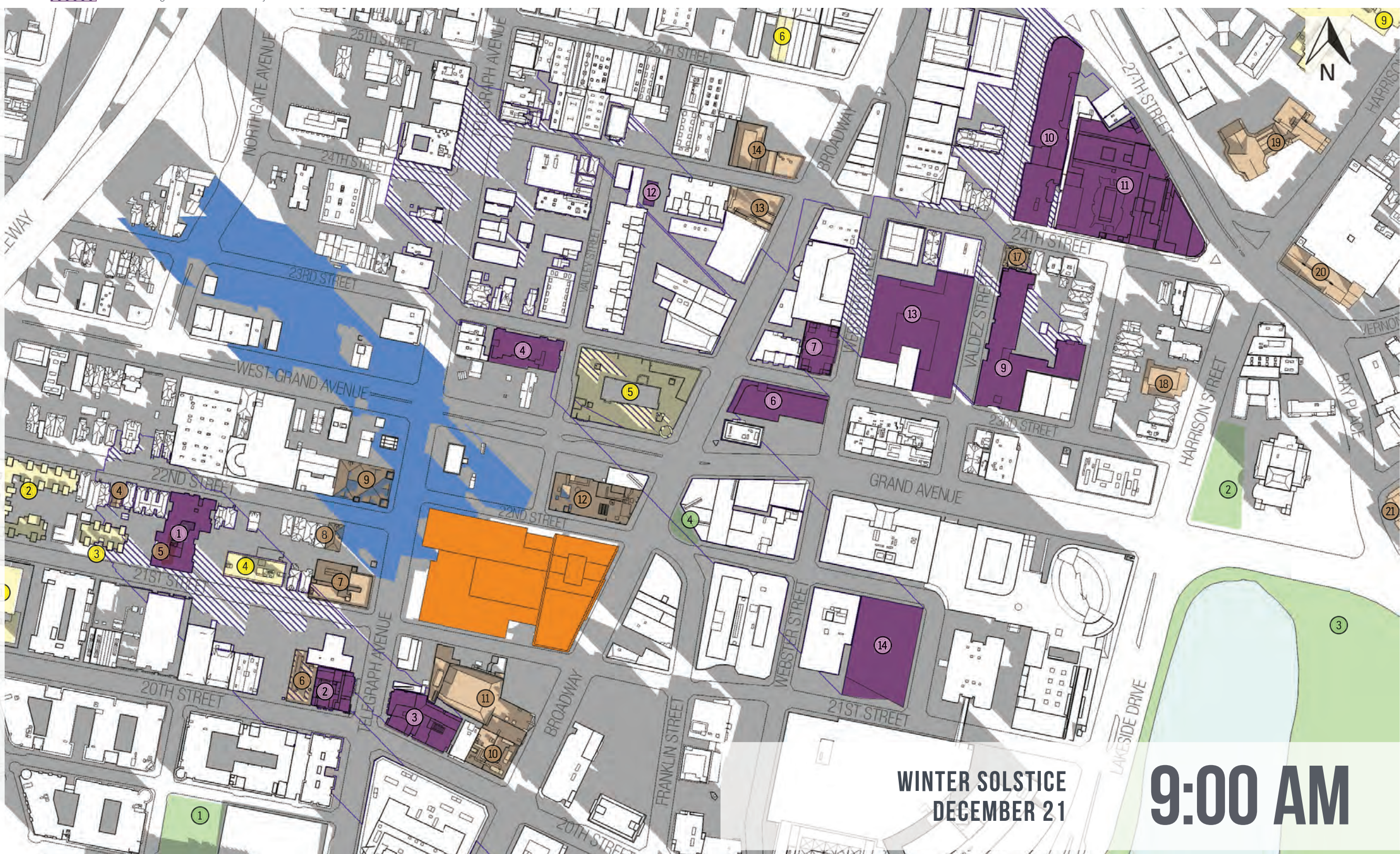
- Proposed Project
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

# 9:00 AM





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WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM



- Proposed Project
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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

# D.3-2C

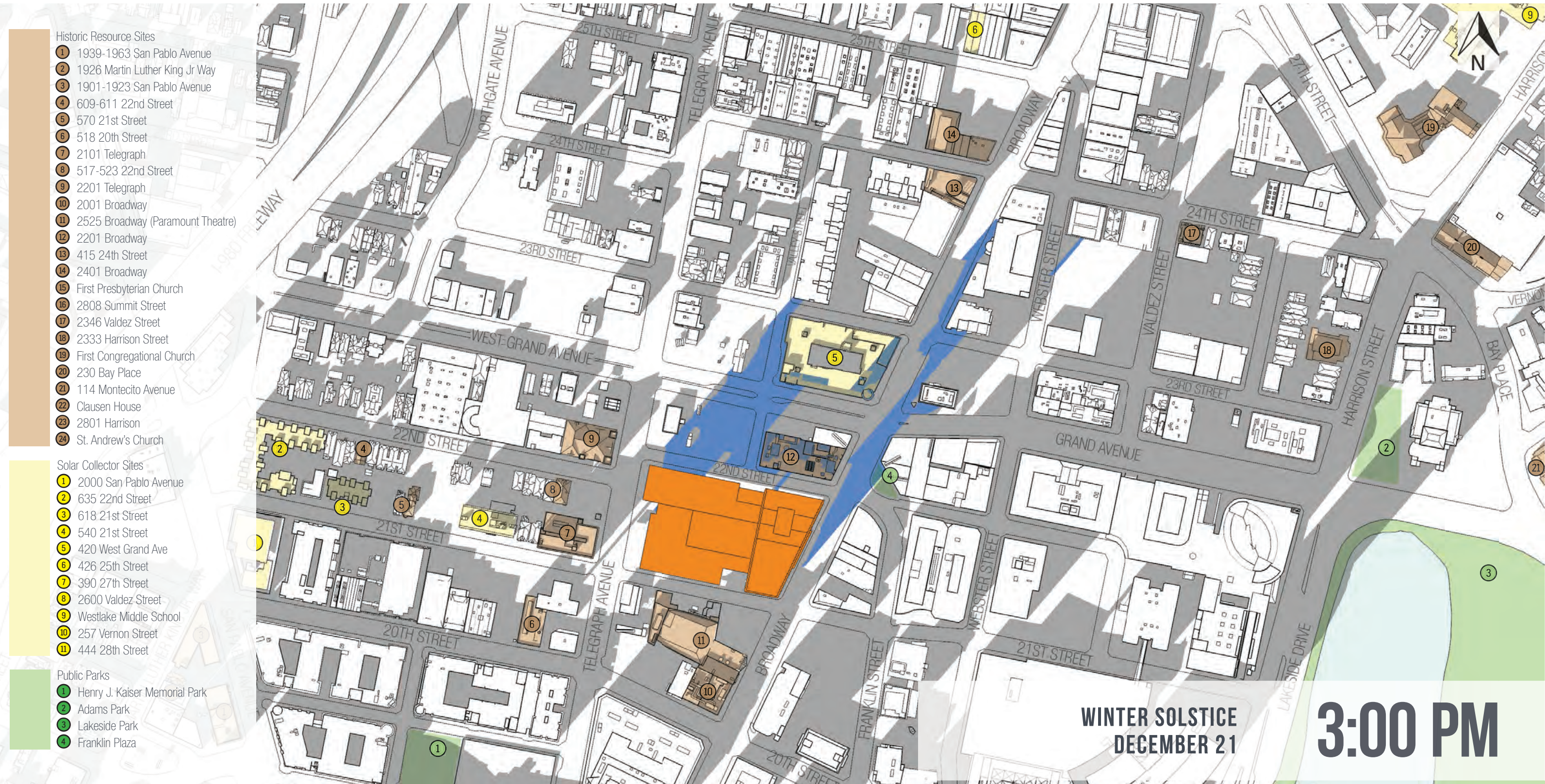
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WINTER SOLSTICE  
DECEMBER 21

# 12:00 PM





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**WINTER SOLSTICE  
DECEMBER 21**

# 3:00 PM



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# 2100 TELEGRAPH: ALL OFFICE SCENARIO + CUMULATIVE

Cumulative shading diagrams on the Winter Solstice

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WINTER SOLSTICE  
DECEMBER 21

3:00 PM



## 2100 TELEGRAPH AVE

OAKLAND, CA

### PEDESTRIAN WIND STUDY

RWDI #1601334

November 14, 2017

#### SUBMITTED TO

**Carla Violet**

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## EXECUTIVE SUMMARY

The wind conditions around the proposed 2100 Telegraph Ave development are discussed in detail within the content of this report and are summarized as follows:

- For the Existing Configuration, winds at all grade level locations are anticipated to meet the wind hazard criterion.
- The addition of the proposed Residential, Office Mix Final Development Plan is not expected to induce a location exceeding the wind hazard criterion.
- The addition of the proposed All Office Final Development Plan is expected to induce one location exceeding the wind hazard criterion. The number of hours that exceed the hazard criteria is 5.
- For the two Project plus Cumulative Configurations, the addition of the future developments is expected to improve conditions slightly for both versions of the project. They are not expected to influence the number of hazard exceedance locations when compared to the respective Existing plus Project configurations.



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- Table 1: Pedestrian Wind Hazard and Comfort Results

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- Appendix A: Drawings List for Model Construction

# 1 INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by Urban Planning Partners Inc. to assess and consult on the pedestrian wind conditions on and around the proposed 2100 Telegraph Avenue (Project) in Oakland, California. The Project site, as shown in Image 1, is bound between 22<sup>nd</sup> St to the north, Broadway to the east, 21<sup>st</sup> St to the south and Telegraph Ave to the west. The design team is considering multiple massing options, two of which are presented in this report.

The purpose of the study is to assess the wind environment around the Project in terms of pedestrian comfort and safety. The quantitative assessment was based on wind speed measurements on a 1:300 (1" = 25') scale model of the project and its surroundings in a boundary-layer wind tunnel.

This report summarizes the methodology of wind tunnel studies for pedestrian wind conditions, describes the Oakland wind criteria and presents the local wind conditions and their effects on pedestrians.

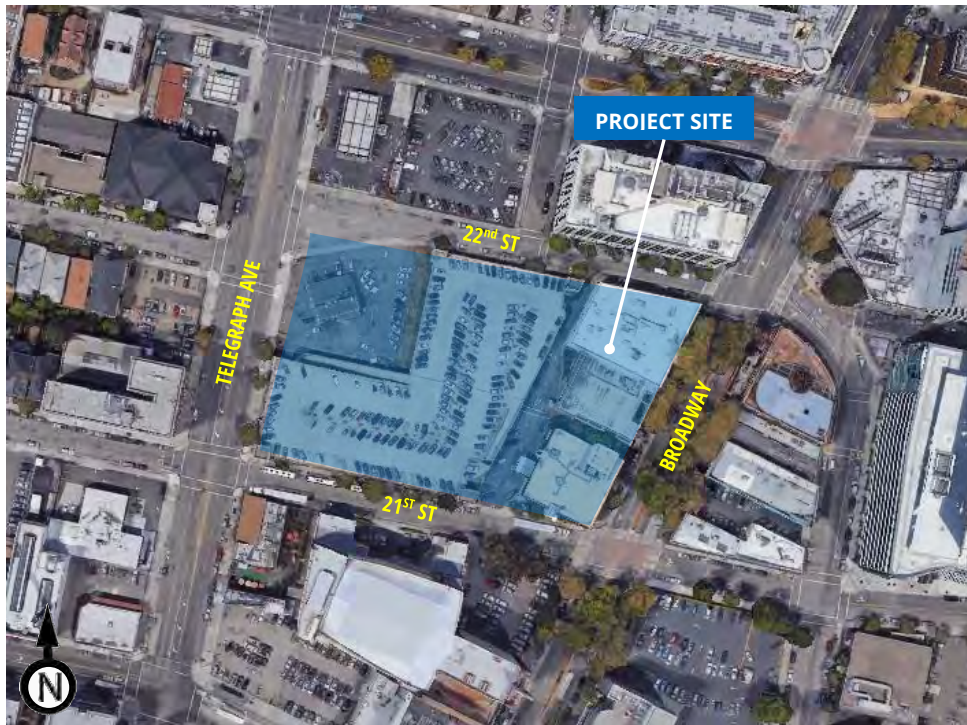


Image 1: Site plan – Aerial view of site and surroundings (Google™ Earth)



## 2 METHODOLOGY

### 2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed Project, a 1:300 scale model of the project site and surroundings was constructed for the wind tunnel tests and the following configurations were tested:

**A - Existing:**

Existing site with existing surroundings, including buildings that are approved/under-construction (Image 2a);

**B - Existing + Residential/Office Mix Final Development Plan:**

Proposed Residential/Office Mix Final Development Plan present with existing and approved/under construction surrounding buildings, (Image 2b);

**C - Existing + All Office Final Development Plan:**

Proposed All Office Final Development Plan present with existing and approved/under-construction surrounding buildings, (Image 2c);

**D - Residential/Office Mix Final Development Plan + Cumulative:**

Proposed Residential/Office Mix Final Development Plan present with existing and approved/under-construction surrounding buildings as well as anticipated future buildings (Image 2d); and,

**E - All Office Final Development Plan + Cumulative:**

Proposed All Office Final Development Plan present with existing and approved/under-construction surrounding buildings as well as anticipated future buildings (Image 2e).

The scale model of the proposed Project (as shown in Images 2b through 2e) was constructed using the design information and drawings listed in Appendix A. The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1200ft radius of the study site. The boundary-layer wind conditions beyond the modelled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with up to 76 wind speed sensors to measure mean and gust wind speeds at a full-scale height of 5 ft. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site, and reviewed by Urban Planning Partners. These measurements were recorded for 36 equally incremented wind directions.



Image 2a: Wind tunnel study model - Existing configuration



Image 2b: Wind tunnel study model - Existing + Residential/Office Mix Final Development Plan configuration



Image 2c: Wind tunnel study model - Existing + All Office Final Development Plan configuration





Image 2d: Wind tunnel study model - Residential/Office Mix Final Development Plan + Cumulative configuration

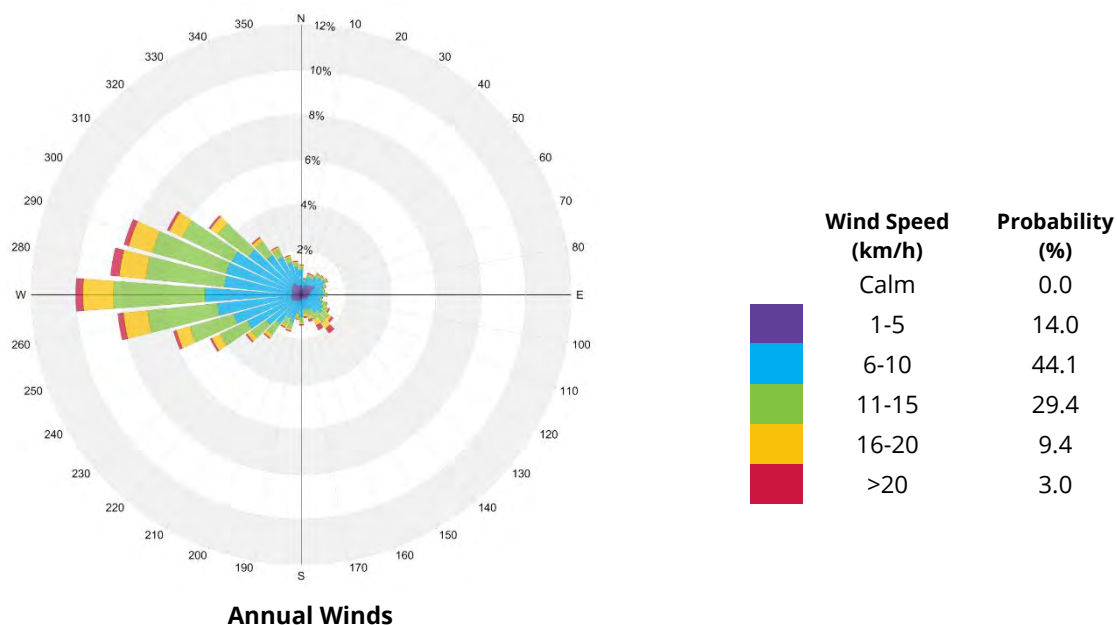


Image 2e: Wind tunnel study model - All Office Final Development Plan + Cumulative configuration

## 2.2 Meteorological Data

Wind statistics recorded at the Metropolitan Oakland International Airport between 1984 and 2014 were analyzed for annual wind conditions. Image 3 graphically depicts the directional distributions of annual wind frequencies and speeds. Winds are frequent from the northwest through west-southwest directions throughout the year, as indicated by the wind rose. Strong winds of a mean speed greater than 20 mph measured at the airport (at an anemometer height of 33 feet) occur 3.0% of the time annually.

Wind statistics from the Metropolitan Oakland International Airport were combined with the wind tunnel data in order to predict the frequency of occurrence of full-scale wind speeds. The full-scale wind predictions were then compared with the City of Oakland Significant Wind Impact Criterion.



**Image 3: Directional distribution of winds approaching Metropolitan Oakland International Airport from 1984-2014**

## 2.3 Planning Code Requirements

A wind analysis needs to be done if the height of the project is 100 feet or greater (measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located Downtown. Since the proposed project (approximately 130 feet tall) exceeds 100 feet in height and is located Downtown, it is subject to the thresholds of significance.

For the purposes of this study, the City of Oakland considers a significant wind impact to occur if a project were to "Create winds exceeding 36 mph for more than one hour during daylight hours during the year". The Planning Code defines these wind speeds in terms of equivalent wind speeds, and average wind speed (mean velocity),





adjusted to include the level of gustiness and turbulence. Equivalent wind speeds were calculated according to the specifications in the City of Oakland Significant Wind Impact Criterion, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15% according to the following formula:

$$EWS = V_m \times (2 \times TI + 0.7)$$

where **EWS** = equivalent wind speed

**$V_m$**  = mean pedestrian-level wind speed

**TI** = turbulence intensity

## **2.4 Pedestrian Comfort**

Although not applicable towards Significant Wind Impacts as defined by the City of Oakland, wind comfort speeds have been calculated for informational purposes. The comfort criteria are that wind speeds do not exceed 11 mph for more than 10% of the time during the year, when calculated for daylight hours, in substantial pedestrian use areas. A lower wind speed threshold of 7 mph may be considered for public seating areas where calmer wind conditions are ideal.

## **2.5 In-Construction and Cumulative Buildings**

Buildings in the surrounding area that are under construction and/or have been approved were modeled in accordance with the information as agreed on April 20<sup>th</sup>, 2017 with the project team. Anticipated future buildings were included in the Project plus Cumulative configurations. These sites are shown in Image 4 and listed in the table below.

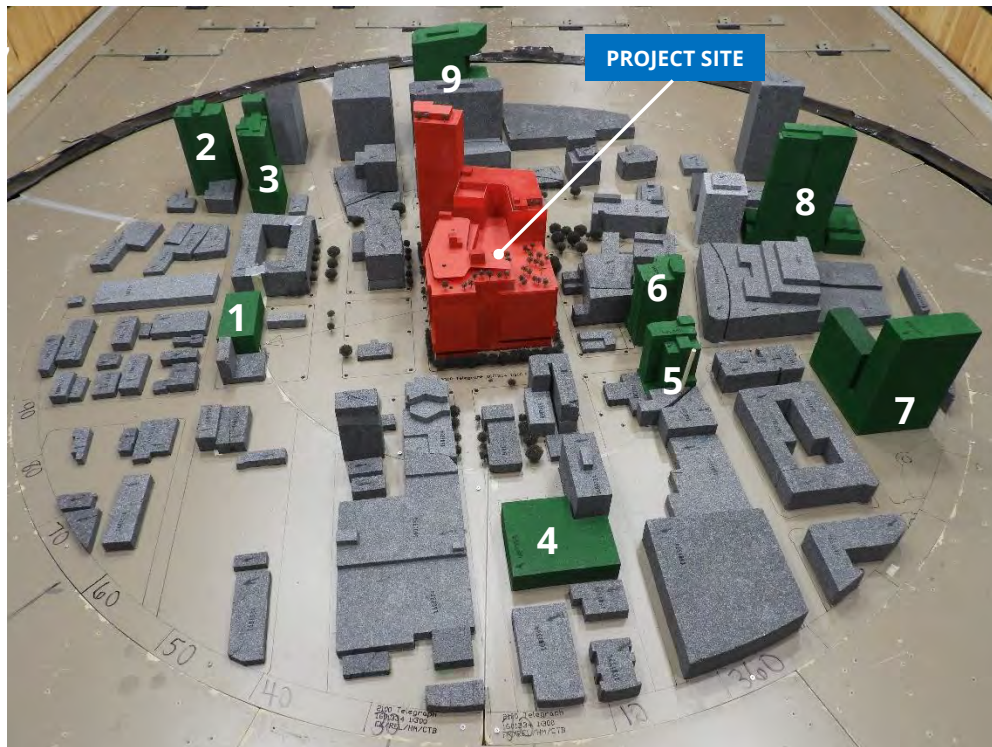


Image 4: Cumulative buildings

| CUMULATIVE BUILDING LIST |                             |
|--------------------------|-----------------------------|
| 1                        | 459 23 <sup>rd</sup> Street |
| 2                        | 2305 Webster Street         |
| 3                        | 2270 Broadway               |
| 4                        | 535 22 <sup>nd</sup> Street |
| 5                        | 2015 Telegraph Avenue       |
| 6                        | 2016 Telegraph Avenue       |
| 7                        | 1911 Telegraph Avenue       |
| 8                        | 1900 Broadway               |
| 9                        | Kaiser Plaza                |

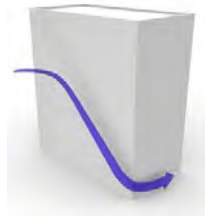
### 3 OVERVIEW OF PEDESTRIAN WINDS

In our discussion of anticipated wind conditions, reference may be made to the following generalized wind flows:



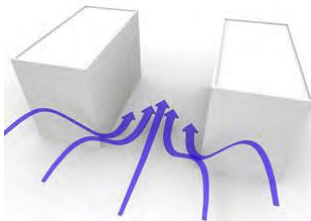
**Downwashing**

Tall buildings tend to intercept the stronger winds at higher elevations and redirect them to the ground level. This is often the main cause for wind accelerations around large buildings at the pedestrian level;



**Corner Acceleration**

When winds approach at an oblique angle to a tall façade and are deflected down, a localized increase in the wind activity or corner acceleration can be expected around the downwind building corner at pedestrian level; and,

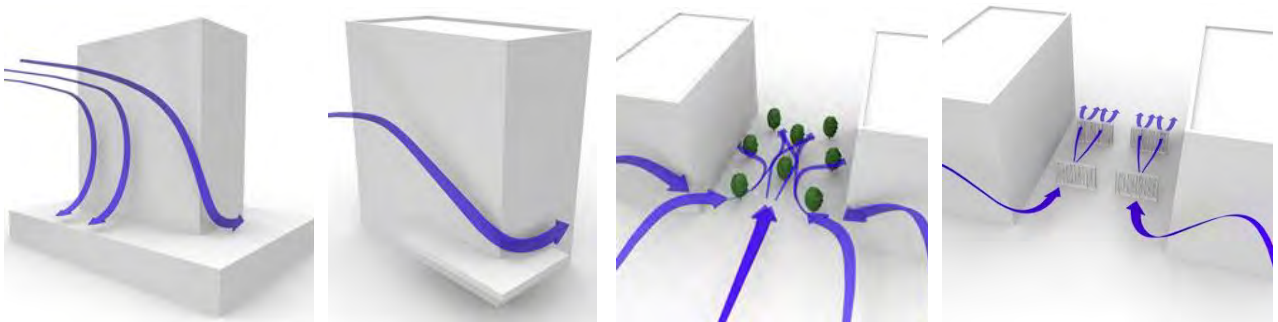


**Channeling Effect**

When two buildings are situated side by side, wind flow tends to accelerate through the space between the buildings due to channeling effect caused by the narrow gap.

If these building/wind combinations occur for prevailing winds, there is a greater potential for increased wind activity. Design details such as; setting back a tall tower from the edges of a podium, deep canopies close to ground level, wind screens, tall trees with dense landscaping, etc. (Image 5) can help reduce wind speeds. The choice and effectiveness of these measures would depend on the exposure and orientation of the site with respect to the prevailing wind directions and the size and massing of the proposed buildings.

**Podium/tower setback, canopy, landscaping and wind screens (left to right)**



**Image 5: Common flow patterns and wind control measures**



## 4 PREDICTED WIND CONDITIONS

This section presents the results of the wind tunnel measurements analyzed in terms of equivalent wind speeds as defined by the equation in Section 2.3. The text in the report simply refers to the data as wind speeds.

Table 1 presents the wind hazard results for the five configurations tested, and lists the wind speed predicted to be exceeded one hour per year at each measurement point. The predicted number of hours per year that the City of Oakland Significant Wind Impact Criterion (one-minute wind speed of 36 mph) is exceeded is also provided. A letter “e” in the last column of each configuration indicates an exceedance of the wind hazard.

Also included in Table 1, are the wind comfort results for the five configurations tested. For each measurement point, the measured 10% exceeded (90<sup>th</sup> percentile) equivalent wind speed and the percentage of time that the wind speed exceeds 11 mph are shown for areas considered to be used primarily for walking. A letter “e” in the last column of each configuration indicates a wind comfort exceedance above 11 mph.

### 4.1 Wind Hazard Conditions

#### 4.1.1 Configuration A – Existing

Of the 74 grade level locations tested for the Existing configuration, wind speeds at none currently exceed the hazard criterion and wind speeds average at 23 mph (Figure 1a and Page 10 of Table 1).

#### 4.1.2 Configuration B – Existing + Residential/Office Mix Final Development Plan

76 grade level locations were measured in this configuration, of which, wind speeds at none of the tested locations is expected to exceed the hazard criterion (Figure 1b and Table 1). Considering all grade level locations, the average wind speed is predicted increase slightly to be 26 mph.

#### 4.1.3 Configuration C – Existing + All Office Final Development Plan

76 grade level locations were measured in this configuration, of which, wind speeds at one of the tested locations is expected to exceed the hazard criterion (Location 52, Figure 1c and Table 1). This is an offsite location and if this version of the project is to be chosen as the final option, this location will need to be mitigated by massing refinements or off-site wind control measures. Considering all grade level locations, the average wind speed is predicted to increase further to be 28 mph, with the number of hours of the threshold exceedance equal to 5 hours.

#### 4.1.4 Configuration D – Residential/Office Mix Final Development Plan + Cumulative

Conditions are improved with the addition of the cumulative buildings with the number of exceedance location remaining at zero and the average wind speed decreases to 25mph when compared to Configuration B.





#### *4.1.5 Configuration E - All Office Final Development Plan + Cumulative*

Conditions are improved with the addition of the cumulative buildings for this massing option also and the number of exceedance location remains at one with the average wind speed decreasing to 27mph and the number of hours of exceedance is down to 3 hours when compared to Configuration C.

## **4.2 Wind Comfort Conditions**

Wind comfort speeds have been calculated for informational purposes, and are not applicable towards Significant Wind Impacts as defined by the City of Oakland. In the Existing configuration, the wind speeds in the vicinity of the project site are predicted to be moderate, with those at a majority of locations meeting the 11 mph criterion (Figure 2a and Table 1). Higher wind speeds exceeding the 11 mph criterion are expected at 12 isolated locations at street intersections surrounding the project site (Figure 2a).

With the addition of the proposed project (Residential/ Office Mix or All Residential), wind activity in the areas surrounding the project are predicted to increase in general. The resulting wind speeds are expected to exceed the 11 mph criterion at additional locations around the project (Figures 2b and 2c). Again, the future cumulative buildings improve the wind conditions and reduce the numbers of exceedances.

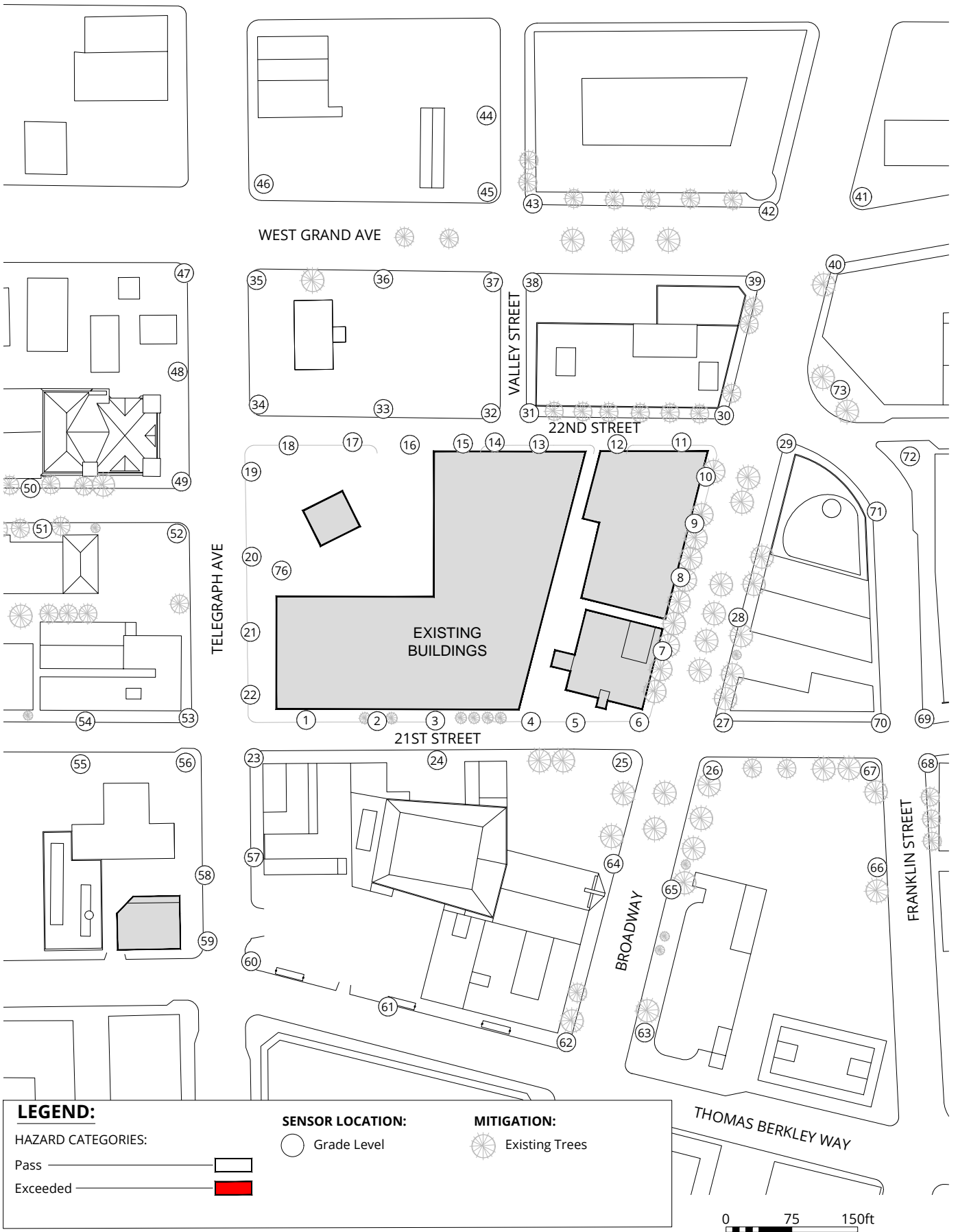


## 5 APPLICABILITY

The wind conditions presented in this report pertain to the proposed 2100 Telegraph Avenue as detailed in the architectural design drawings listed in Appendix A. Should there be any design changes that deviate from this list of drawings, the wind condition predictions presented may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.


The page features a decorative background with a blue triangular shape in the top-left corner and a large, light grey curved shape that dominates the lower half of the page. The word 'FIGURES' is centered within the grey area.


# FIGURES




**LEGEND:**

**HAZARD CATEGORIES:**


Pass 

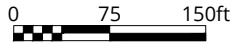
Exceeded 

**SENSOR LOCATION:**

 Grade Level

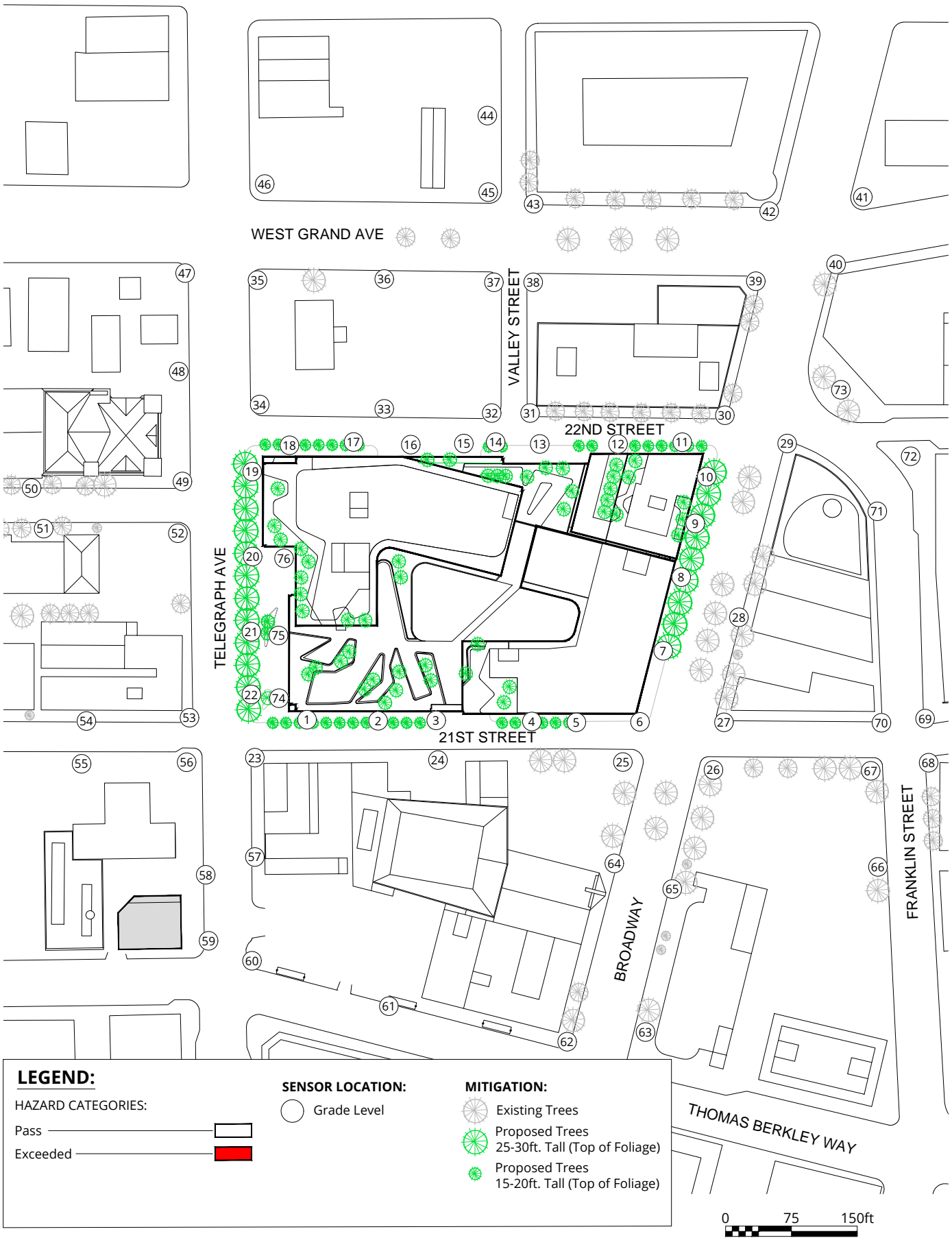
**MITIGATION:**

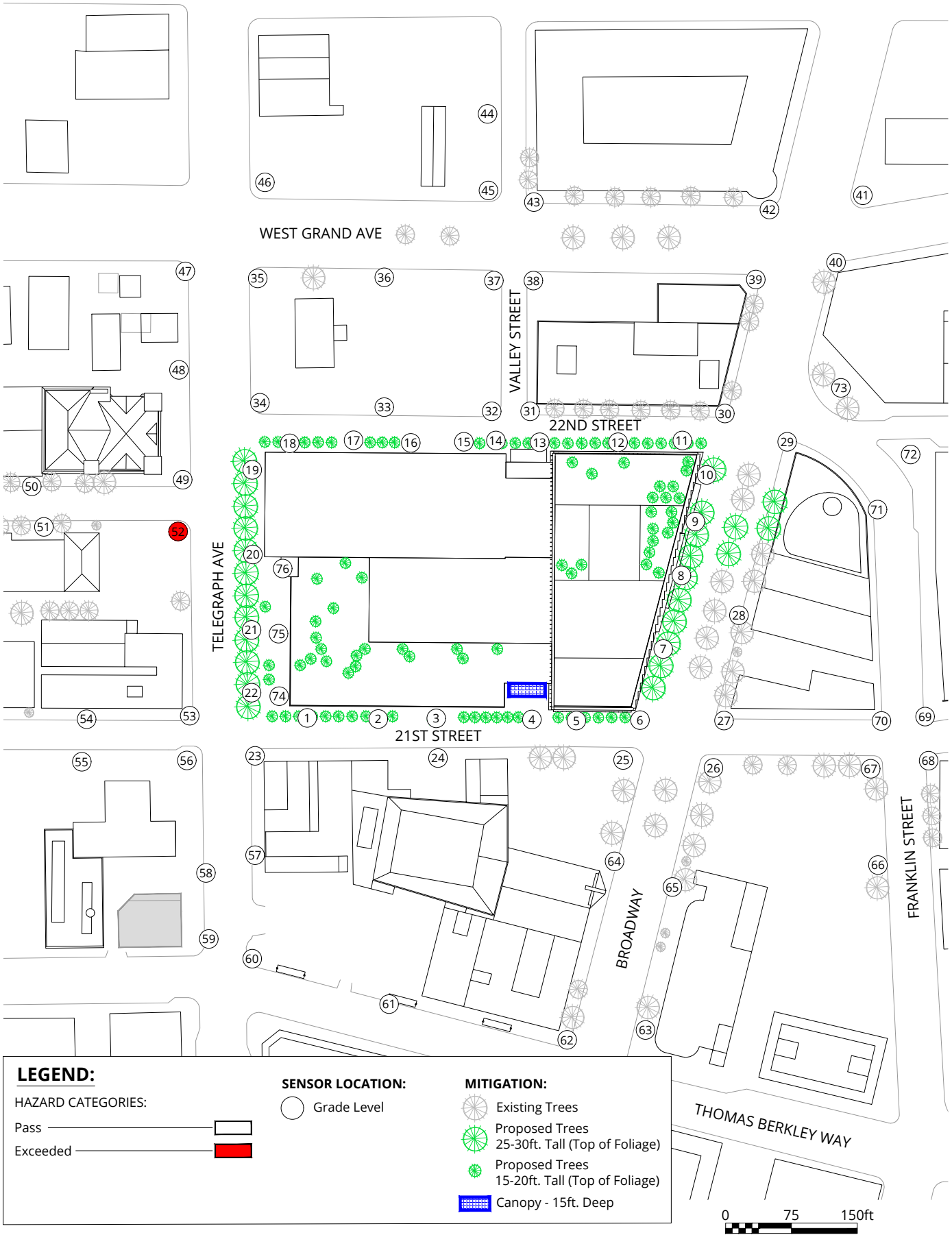
 Existing Trees

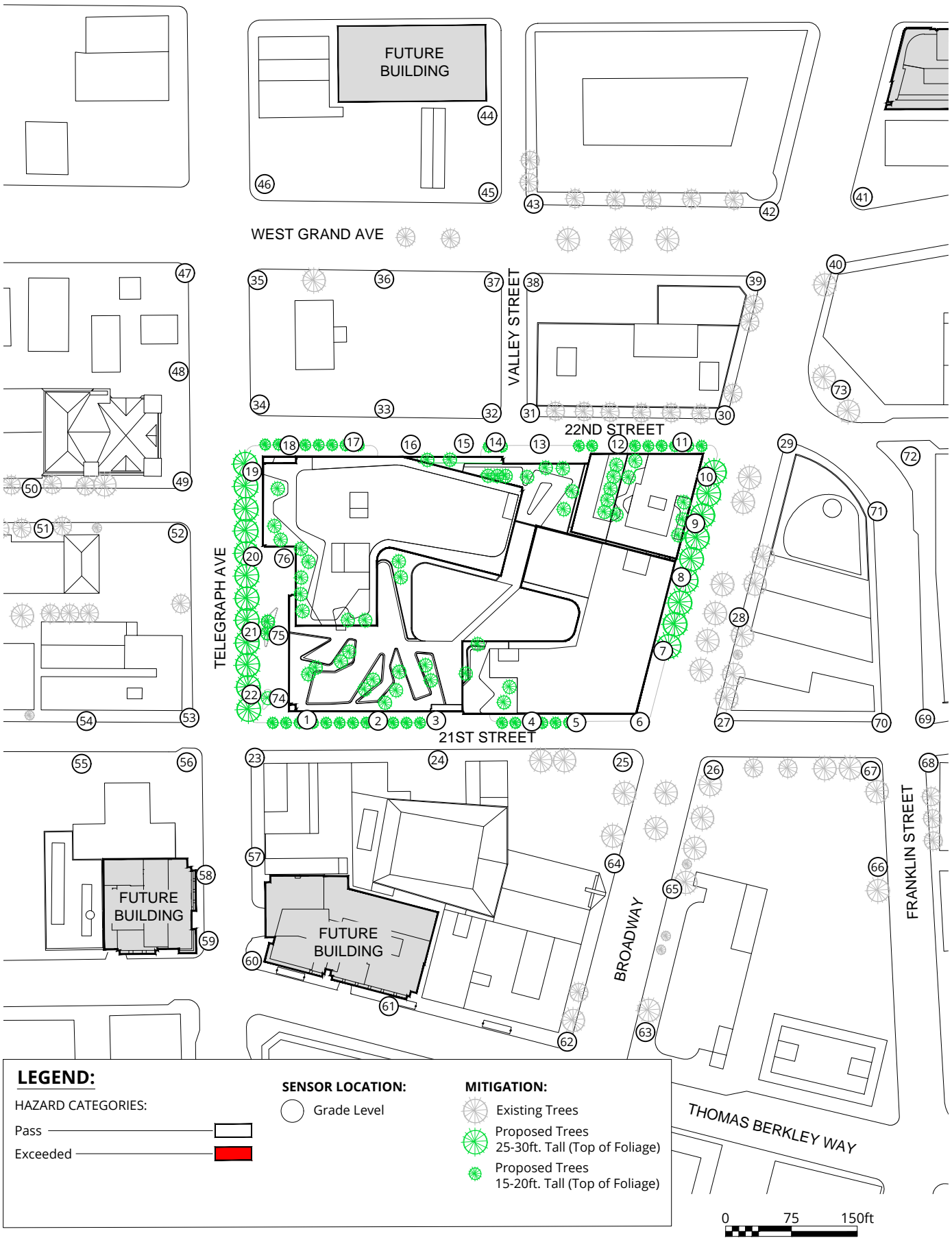


|  |   |                            |   |
|--|---|----------------------------|---|
| <b>Pedestrian Wind Hazard Conditions</b><br>Existing<br>Annual (January to December)<br><br>Project Name - Oakland, CA | True North<br> | Drawn by: DBB Figure: 1a   |  |
|  |   | Approx. Scale: 1"=150'     |   |
|  |   | Date Revised: Nov. 9, 2017 |   |







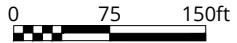


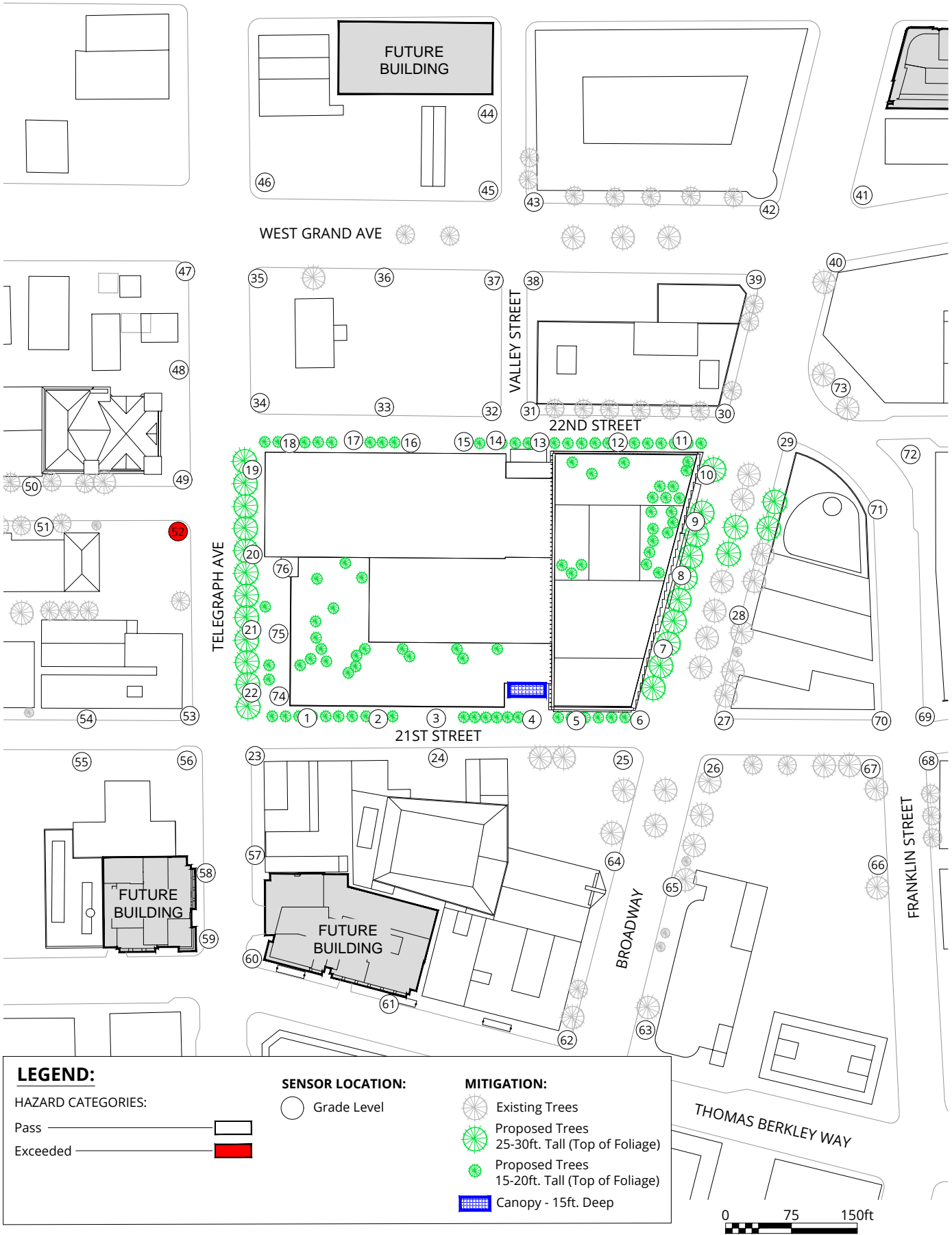
**LEGEND:**

**HAZARD CATEGORIES:**  
 Pass   
 Exceeded

**SENSOR LOCATION:**  
 ○ Grade Level

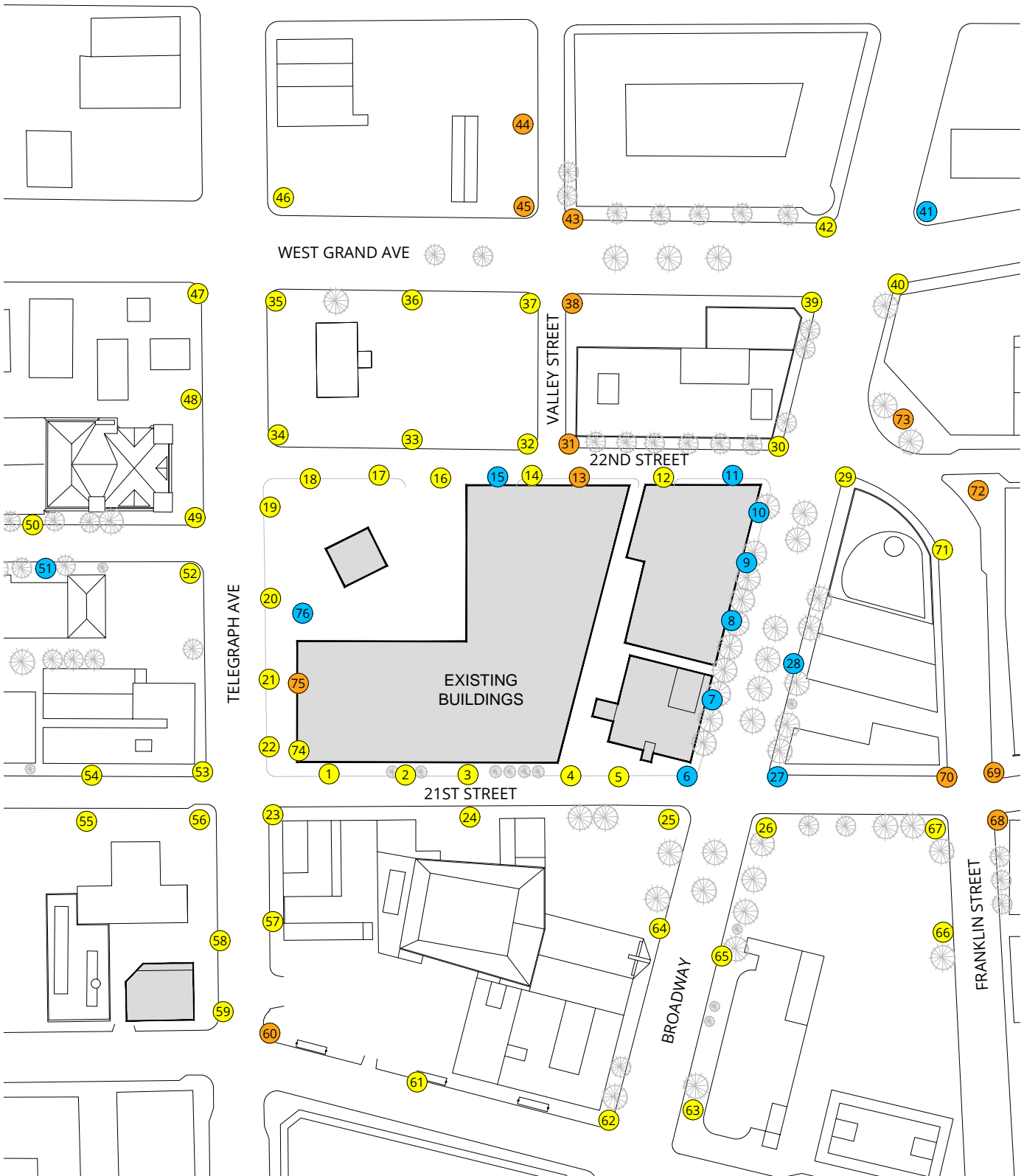
**MITIGATION:**  
 ○ Existing Trees  
 ● Proposed Trees 25-30ft. Tall (Top of Foliage)  
 ● Proposed Trees 15-20ft. Tall (Top of Foliage)





|   |                |                             |  |
|---|----------------|-----------------------------|--|
| <b>Pedestrian Wind Hazard Conditions</b><br>All Office Final Development Plan + Cumulative<br>Annual (January to December)<br><br>2100 Telegraph Avenue - Oakland, CA | True North<br> | Drawn by: DBB    Figure: 1e |  |
|   |                | Approx. Scale: 1"=150'      |  |
|   |                | Date Revised: Nov 9, 2017   |  |





**LEGEND:**

COMFORT CATEGORIES:

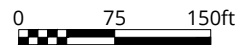
- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

**SENSOR LOCATION:**

- Grade Level

**MITIGATION:**

- Existing Trees



**Pedestrian Wind Comfort Conditions**

Existing  
Annual (January to December)

Project Name - Oakland, CA

True North



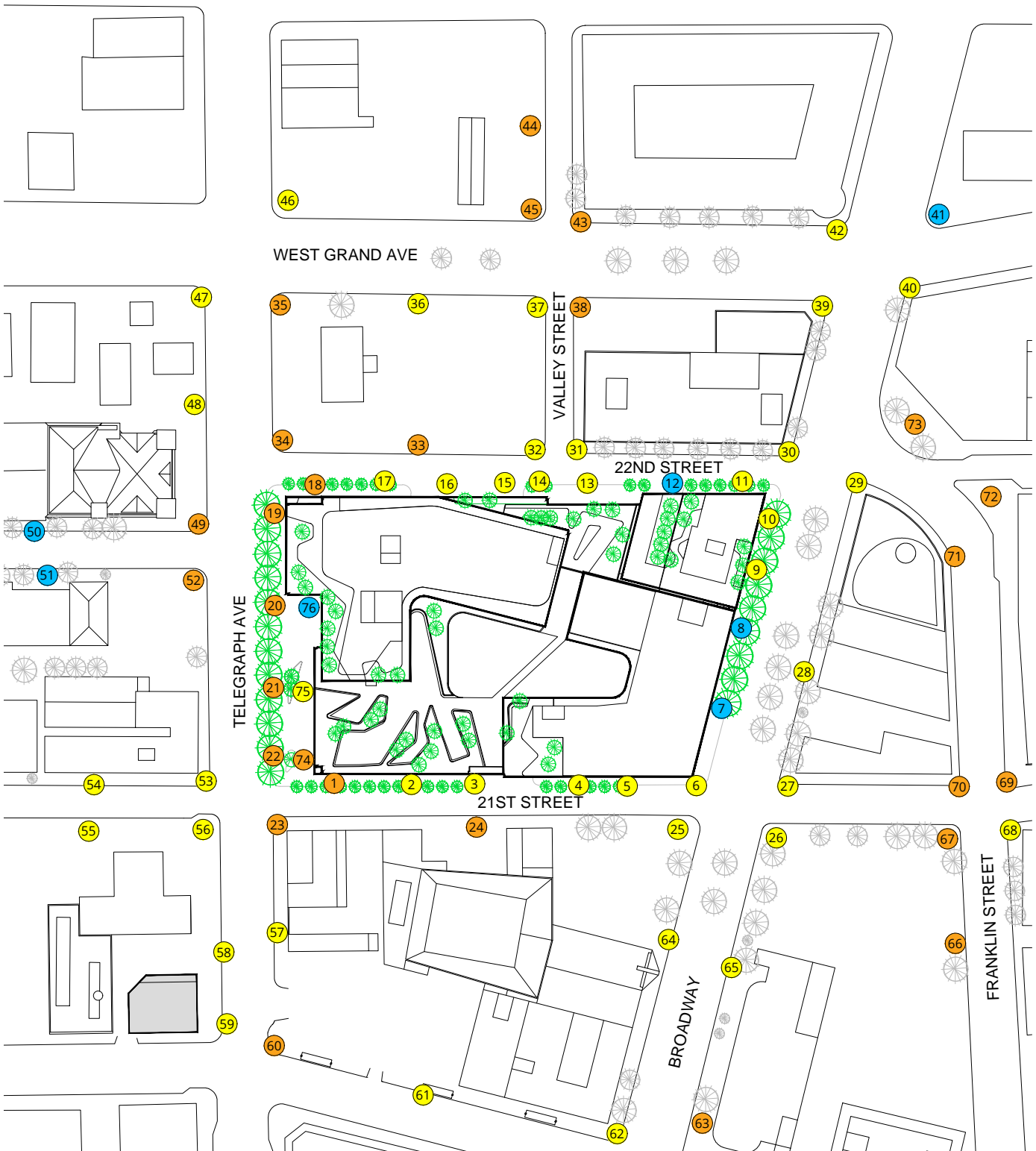
Project #1601334

Drawn by: DBB Figure: 2a

Approx. Scale: 1"=150'

Date Revised: Nov. 9, 2017





**LEGEND:**

COMFORT CATEGORIES:

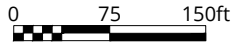
- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

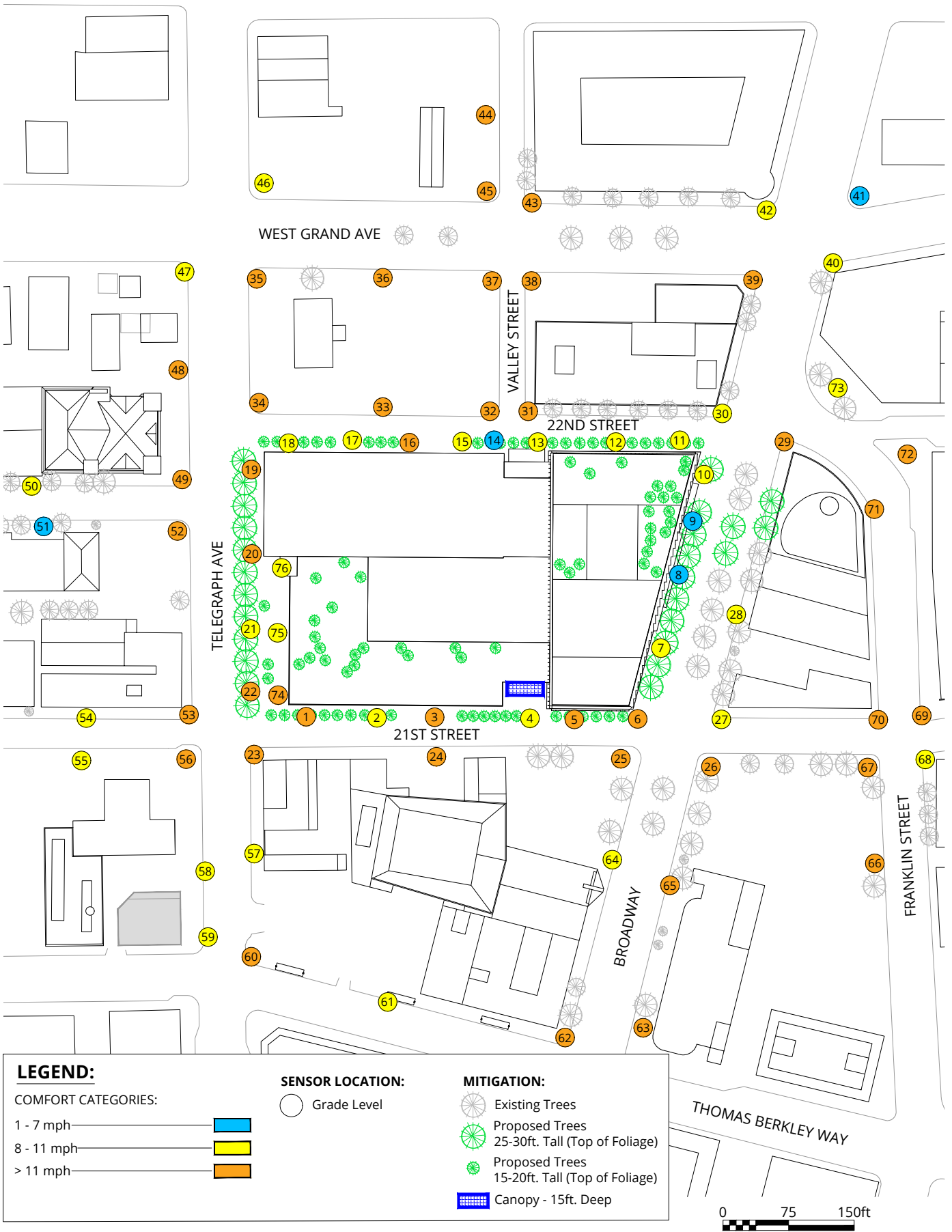
**SENSOR LOCATION:**

- Grade Level

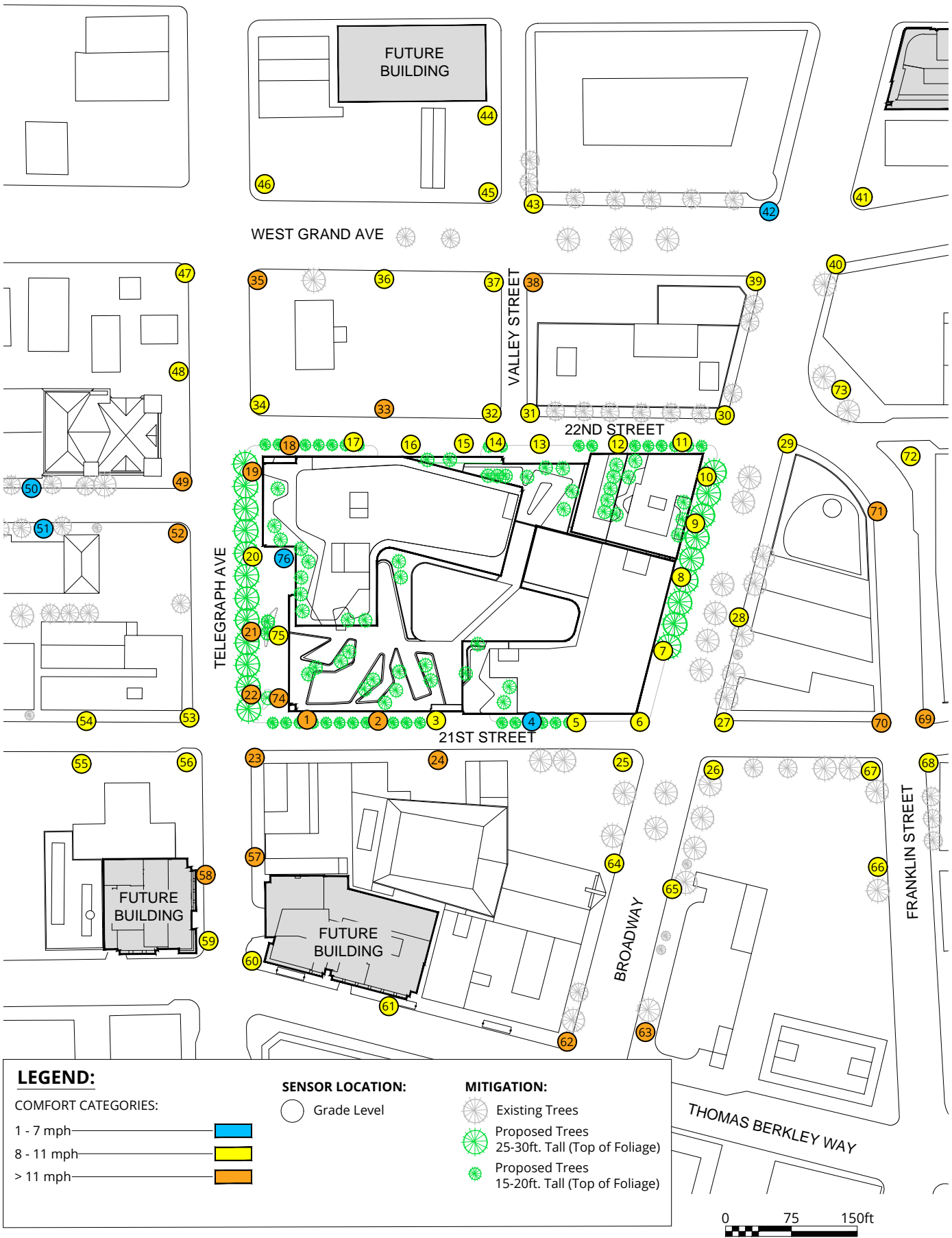
**MITIGATION:**

- Existing Trees
- Proposed Trees 25-30ft. Tall (Top of Foliage)
- Proposed Trees 15-20ft. Tall (Top of Foliage)





|   |                   |                                  |  |
|---|-------------------|----------------------------------|--|
| <p><b>Pedestrian Wind Comfort Conditions</b><br/>         Existing + All Office Final Development Plan<br/>         Annual (January to December)</p> <p>2100 Telegraph Avenue - Oakland, CA</p> | <p>True North</p> | <p>Drawn by: DBB Figure: 2C</p>  |  |
|   |                   | <p>Approx. Scale: 1"=150'</p>    |  |
|   |                   | <p>Date Revised: Nov 9, 2017</p> |  |



**LEGEND:**

COMFORT CATEGORIES:

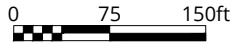
- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

SENSOR LOCATION:

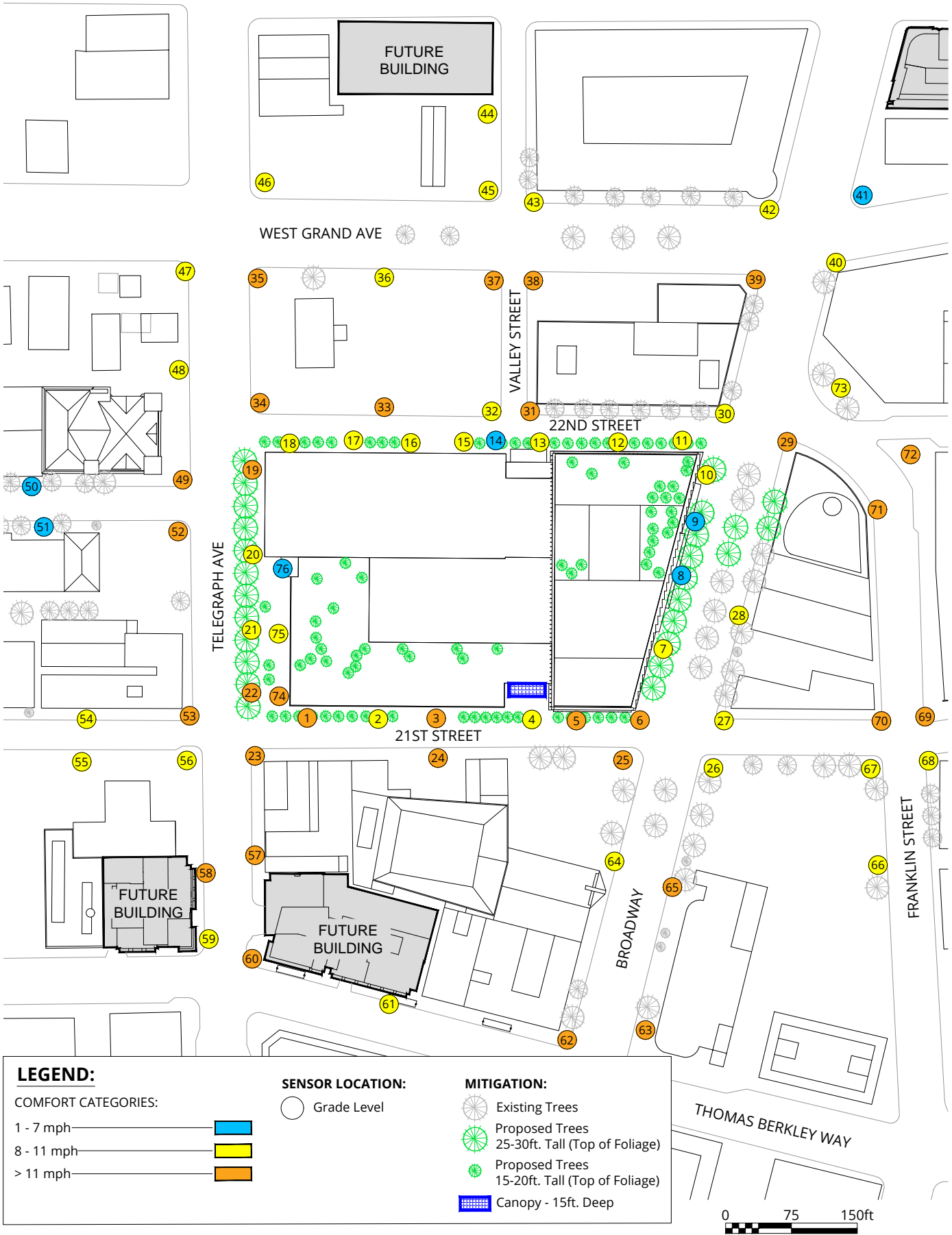
- Grade Level

MITIGATION:

- Existing Trees
- Proposed Trees 25-30ft. Tall (Top of Foliage)
- Proposed Trees 15-20ft. Tall (Top of Foliage)







The background features a large, light beige curved shape on the right side, and a blue curved shape on the left side, separated by a white border.

# TABLES



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 1        | Existing                 | 21   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 35   | 0                        | 0            |         | 19  | 39                  | 9                  | e       |
|          | Existing + All Office    | 28   | 0                        | 0            |         | 13  | 18                  | 3                  | e       |
|          | Resi/Office + Cumulative | 34   | 0                        | 0            |         | 16  | 32                  | 6                  | e       |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 13  | 18                  | 3                  | e       |
| 2        | Existing                 | 19   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 10  | 5                   | 1                  |         |
|          | Existing + All Office    | 23   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 12  | 12                  | 3                  | e       |
|          | All Office + Cumulative  | 23   | 0                        | 0            |         | 10  | 8                   | 1                  |         |
| 3        | Existing                 | 18   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 21   | 0                        | 0            |         | 10  | 6                   | 2                  |         |
|          | Existing + All Office    | 27   | 0                        | 0            |         | 12  | 15                  | 4                  | e       |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 11  | 10                  | 3                  |         |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 12  | 13                  | 4                  | e       |
| 4        | Existing                 | 19   | 0                        |              |         | 9   | 2                   |                    |         |
|          | Existing + Resi/Office   | 23   | 0                        | 0            |         | 8   | 2                   | -1                 |         |
|          | Existing + All Office    | 28   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 7   | 2                   | -2                 |         |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
| 5        | Existing                 | 22   | 0                        |              |         | 10  | 6                   |                    |         |
|          | Existing + Resi/Office   | 24   | 0                        | 0            |         | 8   | 3                   | -2                 |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 13  | 18                  | 3                  | e       |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 9   | 4                   | -1                 |         |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 12  | 14                  | 2                  | e       |
| 6        | Existing                 | 20   | 0                        |              |         | 5   | 1                   |                    |         |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 9   | 4                   | 4                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 14  | 26                  | 9                  | e       |
|          | Resi/Office + Cumulative | 26   | 0                        | 0            |         | 11  | 10                  | 6                  |         |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 13  | 23                  | 8                  | e       |
| 7        | Existing                 | 17   | 0                        |              |         | 7   | 1                   |                    |         |
|          | Existing + Resi/Office   | 23   | 0                        | 0            |         | 7   | 2                   | 0                  |         |
|          | Existing + All Office    | 22   | 0                        | 0            |         | 8   | 3                   | 1                  |         |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 9   | 4                   | 2                  |         |
|          | All Office + Cumulative  | 19   | 0                        | 0            |         | 8   | 1                   | 1                  |         |
| 8        | Existing                 | 16   | 0                        |              |         | 5   | 1                   |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 7   | 2                   | 2                  |         |
|          | Existing + All Office    | 20   | 0                        | 0            |         | 7   | 2                   | 2                  |         |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 6   | 2                   | 1                  |         |
|          | All Office + Cumulative  | 19   | 0                        | 0            |         | 7   | 1                   | 2                  |         |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 9        | Existing                 | 16   | 0                        |              |         | 5   | 0                   |                    |         |
|          | Existing + Resi/Office   | 25   | 0                        | 0            |         | 8   | 3                   | 3                  |         |
|          | Existing + All Office    | 20   | 0                        | 0            |         | 7   | 1                   | 2                  |         |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 7   | 2                   | 2                  |         |
|          | All Office + Cumulative  | 19   | 0                        | 0            |         | 7   | 1                   | 2                  |         |
| 10       | Existing                 | 20   | 0                        |              |         | 5   | 1                   |                    |         |
|          | Existing + Resi/Office   | 19   | 0                        | 0            |         | 8   | 2                   | 3                  |         |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 10  | 6                   | 5                  |         |
|          | Resi/Office + Cumulative | 20   | 0                        | 0            |         | 8   | 2                   | 3                  |         |
|          | All Office + Cumulative  | 25   | 0                        | 0            |         | 8   | 3                   | 3                  |         |
| 11       | Existing                 | 21   | 0                        |              |         | 7   | 2                   |                    |         |
|          | Existing + Resi/Office   | 28   | 0                        | 0            |         | 11  | 10                  | 4                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 11  | 10                  | 4                  |         |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 10  | 7                   | 3                  |         |
|          | All Office + Cumulative  | 32   | 0                        | 0            |         | 10  | 8                   | 3                  |         |
| 12       | Existing                 | 19   | 0                        |              |         | 8   | 1                   |                    |         |
|          | Existing + Resi/Office   | 17   | 0                        | 0            |         | 6   | 1                   | -2                 |         |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 8   | 3                   | 0                  |         |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 10  | 7                   | 2                  |         |
|          | All Office + Cumulative  | 28   | 0                        | 0            |         | 8   | 3                   | 0                  |         |
| 13       | Existing                 | 26   | 0                        |              |         | 12  | 12                  |                    | e       |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 10  | 5                   | -2                 |         |
|          | Existing + All Office    | 24   | 0                        | 0            |         | 11  | 10                  | -1                 |         |
|          | Resi/Office + Cumulative | 20   | 0                        | 0            |         | 9   | 4                   | -3                 |         |
|          | All Office + Cumulative  | 23   | 0                        | 0            |         | 11  | 10                  | -1                 |         |
| 14       | Existing                 | 22   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 23   | 0                        | 0            |         | 9   | 3                   | 1                  |         |
|          | Existing + All Office    | 16   | 0                        | 0            |         | 7   | 1                   | -1                 |         |
|          | Resi/Office + Cumulative | 20   | 0                        | 0            |         | 8   | 1                   | 0                  |         |
|          | All Office + Cumulative  | 16   | 0                        | 0            |         | 7   | 0                   | -1                 |         |
| 15       | Existing                 | 19   | 0                        |              |         | 7   | 1                   |                    |         |
|          | Existing + Resi/Office   | 19   | 0                        | 0            |         | 8   | 2                   | 1                  |         |
|          | Existing + All Office    | 19   | 0                        | 0            |         | 9   | 3                   | 2                  |         |
|          | Resi/Office + Cumulative | 18   | 0                        | 0            |         | 8   | 1                   | 1                  |         |
|          | All Office + Cumulative  | 18   | 0                        | 0            |         | 9   | 2                   | 2                  |         |
| 16       | Existing                 | 20   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 19   | 0                        | 0            |         | 9   | 2                   | 1                  |         |
|          | Existing + All Office    | 25   | 0                        | 0            |         | 12  | 12                  | 4                  | e       |
|          | Resi/Office + Cumulative | 17   | 0                        | 0            |         | 8   | 1                   | 0                  |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 11  | 10                  | 3                  |         |





**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 17       | Existing                 | 20   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 21   | 0                        | 0            |         | 9   | 4                   | 0                  |         |
|          | Existing + All Office    | 21   | 0                        | 0            |         | 9   | 3                   | 0                  |         |
|          | Resi/Office + Cumulative | 20   | 0                        | 0            |         | 8   | 2                   | -1                 |         |
|          | All Office + Cumulative  | 21   | 0                        | 0            |         | 9   | 2                   | 0                  |         |
| 18       | Existing                 | 22   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 14  | 23                  | 5                  | e       |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 10  | 6                   | 1                  |         |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 12  | 16                  | 3                  | e       |
|          | All Office + Cumulative  | 25   | 0                        | 0            |         | 9   | 4                   | 0                  |         |
| 19       | Existing                 | 23   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 32   | 0                        | 0            |         | 14  | 26                  | 6                  | e       |
|          | Existing + All Office    | 29   | 0                        | 0            |         | 13  | 18                  | 5                  | e       |
|          | Resi/Office + Cumulative | 31   | 0                        | 0            |         | 14  | 27                  | 6                  | e       |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 12  | 16                  | 4                  | e       |
| 20       | Existing                 | 21   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 24   | 0                        | 0            |         | 12  | 14                  | 4                  | e       |
|          | Existing + All Office    | 25   | 0                        | 0            |         | 12  | 15                  | 4                  | e       |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 11  | 10                  | 3                  |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 11  | 10                  | 3                  |         |
| 21       | Existing                 | 25   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 31   | 0                        | 0            |         | 12  | 17                  | 1                  | e       |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 12  | 17                  | 1                  | e       |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
| 22       | Existing                 | 23   | 0                        |              |         | 9   | 4                   |                    |         |
|          | Existing + Resi/Office   | 31   | 0                        | 0            |         | 15  | 29                  | 6                  | e       |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 14  | 23                  | 5                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 14  | 27                  | 5                  | e       |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 14  | 23                  | 5                  | e       |
| 23       | Existing                 | 25   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 34   | 0                        | 0            |         | 16  | 29                  | 6                  | e       |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 13  | 22                  | 3                  | e       |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 13  | 19                  | 3                  | e       |
|          | All Office + Cumulative  | 28   | 0                        | 0            |         | 13  | 17                  | 3                  | e       |
| 24       | Existing                 | 24   | 0                        |              |         | 10  | 6                   |                    |         |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 12  | 14                  | 2                  | e       |
|          | Existing + All Office    | 28   | 0                        | 0            |         | 13  | 17                  | 3                  | e       |
|          | Resi/Office + Cumulative | 26   | 0                        | 0            |         | 12  | 12                  | 2                  | e       |
|          | All Office + Cumulative  | 28   | 0                        | 0            |         | 13  | 16                  | 3                  | e       |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 25       | Existing                 | 18   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 29   | 0                        | 0            |         | 10  | 7                   | 2                  |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 13  | 20                  | 5                  | e       |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 9   | 5                   | 1                  |         |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 12  | 14                  | 4                  | e       |
| 26       | Existing                 | 22   | 0                        |              |         | 9   | 4                   |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 9   | 5                   | 0                  |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 12  | 14                  | 3                  | e       |
|          | Resi/Office + Cumulative | 26   | 0                        | 0            |         | 9   | 3                   | 0                  |         |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
| 27       | Existing                 | 25   | 0                        |              |         | 6   | 2                   |                    |         |
|          | Existing + Resi/Office   | 27   | 0                        | 0            |         | 9   | 4                   | 3                  |         |
|          | Existing + All Office    | 29   | 0                        | 0            |         | 10  | 7                   | 4                  |         |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 8   | 2                   | 2                  |         |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 10  | 6                   | 4                  |         |
| 28       | Existing                 | 15   | 0                        |              |         | 7   | 0                   |                    |         |
|          | Existing + Resi/Office   | 34   | 0                        | 0            |         | 9   | 4                   | 2                  |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 10  | 8                   | 4                  |         |
|          | Resi/Office + Cumulative | 33   | 0                        | 0            |         | 8   | 3                   | 1                  |         |
|          | All Office + Cumulative  | 32   | 0                        | 0            |         | 10  | 7                   | 3                  |         |
| 29       | Existing                 | 25   | 0                        |              |         | 9   | 5                   |                    |         |
|          | Existing + Resi/Office   | 27   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 12  | 14                  | 3                  | e       |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 10  | 8                   | 1                  |         |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 12  | 12                  | 3                  | e       |
| 30       | Existing                 | 26   | 0                        |              |         | 9   | 4                   |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 10  | 8                   | 1                  |         |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 10  | 5                   | 1                  |         |
| 31       | Existing                 | 29   | 0                        |              |         | 13  | 17                  |                    | e       |
|          | Existing + Resi/Office   | 25   | 0                        | 0            |         | 11  | 10                  | -2                 |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 15  | 31                  | 2                  | e       |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 11  | 10                  | -2                 |         |
|          | All Office + Cumulative  | 31   | 0                        | 0            |         | 15  | 29                  | 2                  | e       |
| 32       | Existing                 | 20   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 10  | 8                   | 1                  |         |
|          | Existing + All Office    | 27   | 0                        | 0            |         | 12  | 13                  | 3                  | e       |
|          | Resi/Office + Cumulative | 25   | 0                        | 0            |         | 9   | 4                   | 0                  |         |
|          | All Office + Cumulative  | 26   | 0                        | 0            |         | 11  | 10                  | 2                  |         |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 33       | Existing                 | 22   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 31   | 0                        | 0            |         | 14  | 21                  | 5                  | e       |
|          | Existing + All Office    | 35   | 0                        | 0            |         | 15  | 26                  | 6                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 13  | 16                  | 4                  | e       |
|          | All Office + Cumulative  | 32   | 0                        | 0            |         | 14  | 24                  | 5                  | e       |
| 34       | Existing                 | 24   | 0                        |              |         | 10  | 6                   |                    |         |
|          | Existing + Resi/Office   | 34   | 0                        | 0            |         | 12  | 15                  | 2                  | e       |
|          | Existing + All Office    | 35   | 0                        | 0            |         | 16  | 36                  | 6                  | e       |
|          | Resi/Office + Cumulative | 33   | 0                        | 0            |         | 11  | 10                  | 1                  |         |
|          | All Office + Cumulative  | 35   | 0                        | 0            |         | 15  | 33                  | 5                  | e       |
| 35       | Existing                 | 23   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 25   | 0                        | 0            |         | 12  | 12                  | 2                  | e       |
|          | Existing + All Office    | 31   | 0                        | 0            |         | 14  | 24                  | 4                  | e       |
|          | Resi/Office + Cumulative | 25   | 0                        | 0            |         | 12  | 13                  | 2                  | e       |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 13  | 21                  | 3                  | e       |
| 36       | Existing                 | 23   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 10  | 7                   | 0                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 12  | 13                  | 2                  | e       |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 10  | 8                   | 0                  |         |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 11  | 10                  | 1                  |         |
| 37       | Existing                 | 28   | 0                        |              |         | 9   | 4                   |                    |         |
|          | Existing + Resi/Office   | 29   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 13  | 20                  | 4                  | e       |
|          | Resi/Office + Cumulative | 26   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 13  | 18                  | 4                  | e       |
| 38       | Existing                 | 31   | 0                        |              |         | 12  | 17                  |                    | e       |
|          | Existing + Resi/Office   | 32   | 0                        | 0            |         | 14  | 23                  | 2                  | e       |
|          | Existing + All Office    | 34   | 0                        | 0            |         | 15  | 29                  | 3                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 12  | 17                  | 0                  | e       |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 14  | 25                  | 2                  | e       |
| 39       | Existing                 | 26   | 0                        |              |         | 8   | 4                   |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 11  | 10                  | 3                  |         |
|          | Existing + All Office    | 35   | 0                        | 0            |         | 13  | 18                  | 5                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 11  | 10                  | 3                  |         |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 12  | 15                  | 4                  | e       |
| 40       | Existing                 | 23   | 0                        |              |         | 8   | 3                   |                    |         |
|          | Existing + Resi/Office   | 28   | 0                        | 0            |         | 9   | 4                   | 1                  |         |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 10  | 7                   | 2                  |         |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 9   | 3                   | 1                  |         |
|          | All Office + Cumulative  | 25   | 0                        | 0            |         | 11  | 10                  | 3                  |         |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 41       | Existing                 | 33   | 0                        |              |         | 3   | 0                   |                    |         |
|          | Existing + Resi/Office   | 33   | 0                        | 0            |         | 3   | 0                   | 0                  |         |
|          | Existing + All Office    | 33   | 0                        | 0            |         | 3   | 0                   | 0                  |         |
|          | Resi/Office + Cumulative | 33   | 0                        | 0            |         | 14  | 22                  | 11                 | e       |
|          | All Office + Cumulative  | 33   | 0                        | 0            |         | 3   | 0                   | 0                  |         |
| 42       | Existing                 | 25   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 32   | 0                        | 0            |         | 9   | 5                   | -1                 |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 9   | 6                   | -1                 |         |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 7   | 3                   | -3                 |         |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 9   | 5                   | -1                 |         |
| 43       | Existing                 | 26   | 0                        |              |         | 12  | 16                  |                    | e       |
|          | Existing + Resi/Office   | 31   | 0                        | 0            |         | 14  | 23                  | 2                  | e       |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 13  | 20                  | 1                  | e       |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 10  | 5                   | -2                 |         |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 11  | 10                  | -1                 |         |
| 44       | Existing                 | 29   | 0                        |              |         | 13  | 22                  |                    | e       |
|          | Existing + Resi/Office   | 28   | 0                        | 0            |         | 13  | 18                  | 0                  | e       |
|          | Existing + All Office    | 25   | 0                        | 0            |         | 12  | 15                  | -1                 | e       |
|          | Resi/Office + Cumulative | 21   | 0                        | 0            |         | 10  | 6                   | -3                 |         |
|          | All Office + Cumulative  | 22   | 0                        | 0            |         | 11  | 10                  | -2                 |         |
| 45       | Existing                 | 28   | 0                        |              |         | 13  | 16                  |                    | e       |
|          | Existing + Resi/Office   | 31   | 0                        | 0            |         | 14  | 21                  | 1                  | e       |
|          | Existing + All Office    | 31   | 0                        | 0            |         | 13  | 18                  | 0                  | e       |
|          | Resi/Office + Cumulative | 25   | 0                        | 0            |         | 9   | 4                   | -4                 |         |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 10  | 5                   | -3                 |         |
| 46       | Existing                 | 23   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Existing + All Office    | 24   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | All Office + Cumulative  | 23   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
| 47       | Existing                 | 21   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 21   | 0                        | 0            |         | 9   | 3                   | -1                 |         |
|          | Existing + All Office    | 27   | 0                        | 0            |         | 9   | 4                   | -1                 |         |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 11  | 10                  | 1                  |         |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 9   | 3                   | -1                 |         |
| 48       | Existing                 | 26   | 0                        |              |         | 9   | 5                   |                    |         |
|          | Existing + Resi/Office   | 27   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 12  | 12                  | 3                  | e       |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
|          | All Office + Cumulative  | 31   | 0                        | 0            |         | 11  | 10                  | 2                  |         |





**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 49       | Existing                 | 23   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 13  | 22                  | 4                  | e       |
|          | Existing + All Office    | 36   | 0                        | 0            |         | 16  | 35                  | 7                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 12  | 16                  | 3                  | e       |
|          | All Office + Cumulative  | 34   | 0                        | 0            |         | 15  | 30                  | 6                  | e       |
| 50       | Existing                 | 18   | 0                        |              |         | 9   | 2                   |                    |         |
|          | Existing + Resi/Office   | 17   | 0                        | 0            |         | 7   | 0                   | -2                 |         |
|          | Existing + All Office    | 17   | 0                        | 0            |         | 8   | 1                   | -1                 |         |
|          | Resi/Office + Cumulative | 15   | 0                        | 0            |         | 6   | 0                   | -3                 |         |
|          | All Office + Cumulative  | 15   | 0                        | 0            |         | 7   | 0                   | -2                 |         |
| 51       | Existing                 | 14   | 0                        |              |         | 6   | 0                   |                    |         |
|          | Existing + Resi/Office   | 15   | 0                        | 0            |         | 5   | 0                   | -1                 |         |
|          | Existing + All Office    | 17   | 0                        | 0            |         | 6   | 0                   | 0                  |         |
|          | Resi/Office + Cumulative | 15   | 0                        | 0            |         | 5   | 0                   | -1                 |         |
|          | All Office + Cumulative  | 17   | 0                        | 0            |         | 5   | 0                   | -1                 |         |
| 52       | Existing                 | 23   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 36   | 0                        | 0            |         | 16  | 35                  | 7                  | e       |
|          | Existing + All Office    | 42   | 5                        | 5            | e       | 18  | 41                  | 9                  | e       |
|          | Resi/Office + Cumulative | 34   | 0                        | 0            |         | 15  | 29                  | 6                  | e       |
|          | All Office + Cumulative  | 41   | 3                        | 3            | e       | 16  | 36                  | 7                  | e       |
| 53       | Existing                 | 28   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Existing + All Office    | 25   | 0                        | 0            |         | 12  | 13                  | 1                  | e       |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 12  | 12                  | 1                  | e       |
| 54       | Existing                 | 20   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 24   | 0                        | 0            |         | 8   | 3                   | 0                  |         |
|          | Existing + All Office    | 24   | 0                        | 0            |         | 8   | 3                   | 0                  |         |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 9   | 5                   | 1                  |         |
|          | All Office + Cumulative  | 23   | 0                        | 0            |         | 8   | 3                   | 0                  |         |
| 55       | Existing                 | 26   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 23   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
|          | Existing + All Office    | 23   | 0                        | 0            |         | 10  | 8                   | -1                 |         |
|          | Resi/Office + Cumulative | 22   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
|          | All Office + Cumulative  | 22   | 0                        | 0            |         | 10  | 6                   | -1                 |         |
| 56       | Existing                 | 26   | 0                        |              |         | 10  | 7                   |                    |         |
|          | Existing + Resi/Office   | 23   | 0                        | 0            |         | 11  | 10                  | 1                  |         |
|          | Existing + All Office    | 25   | 0                        | 0            |         | 12  | 13                  | 2                  | e       |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 10  | 8                   | 0                  |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 11  | 10                  | 1                  |         |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 57       | Existing                 | 24   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 9   | 4                   | 0                  |         |
|          | Existing + All Office    | 23   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 12  | 15                  | 3                  | e       |
|          | All Office + Cumulative  | 26   | 0                        | 0            |         | 12  | 13                  | 3                  | e       |
| 58       | Existing                 | 22   | 0                        |              |         | 8   | 2                   |                    |         |
|          | Existing + Resi/Office   | 18   | 0                        | 0            |         | 8   | 2                   | 0                  |         |
|          | Existing + All Office    | 20   | 0                        | 0            |         | 9   | 4                   | 1                  |         |
|          | Resi/Office + Cumulative | 25   | 0                        | 0            |         | 12  | 13                  | 4                  | e       |
|          | All Office + Cumulative  | 29   | 0                        | 0            |         | 13  | 18                  | 5                  | e       |
| 59       | Existing                 | 22   | 0                        |              |         | 10  | 4                   |                    |         |
|          | Existing + Resi/Office   | 21   | 0                        | 0            |         | 9   | 4                   | -1                 |         |
|          | Existing + All Office    | 20   | 0                        | 0            |         | 8   | 1                   | -2                 |         |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 9   | 4                   | -1                 |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 8   | 3                   | -2                 |         |
| 60       | Existing                 | 28   | 0                        |              |         | 13  | 18                  |                    | e       |
|          | Existing + Resi/Office   | 26   | 0                        | 0            |         | 12  | 12                  | -1                 | e       |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 12  | 14                  | -1                 | e       |
|          | Resi/Office + Cumulative | 24   | 0                        | 0            |         | 11  | 10                  | -2                 |         |
|          | All Office + Cumulative  | 25   | 0                        | 0            |         | 12  | 13                  | -1                 | e       |
| 61       | Existing                 | 25   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 24   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | All Office + Cumulative  | 22   | 0                        | 0            |         | 10  | 7                   | -1                 |         |
| 62       | Existing                 | 23   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 24   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 12  | 14                  | 1                  | e       |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 12  | 16                  | 1                  | e       |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 12  | 16                  | 1                  | e       |
| 63       | Existing                 | 22   | 0                        |              |         | 10  | 8                   |                    |         |
|          | Existing + Resi/Office   | 27   | 0                        | 0            |         | 12  | 13                  | 2                  | e       |
|          | Existing + All Office    | 28   | 0                        | 0            |         | 12  | 16                  | 2                  | e       |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 13  | 16                  | 3                  | e       |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 14  | 23                  | 4                  | e       |
| 64       | Existing                 | 25   | 0                        |              |         | 10  | 5                   |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 9   | 3                   | -1                 |         |
|          | Existing + All Office    | 26   | 0                        | 0            |         | 10  | 7                   | 0                  |         |
|          | Resi/Office + Cumulative | 20   | 0                        | 0            |         | 9   | 3                   | -1                 |         |
|          | All Office + Cumulative  | 24   | 0                        | 0            |         | 10  | 5                   | 0                  |         |



**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for<br>1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for<br>10% of the time) |                     |                    |         |
|----------|--------------------------|--|--------------------------|--------------|---------|---|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)  | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)   | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 65       | Existing                 | 22   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 22   | 0                        | 0            |         | 10  | 8                   | -1                 |         |
|          | Existing + All Office    | 27   | 0                        | 0            |         | 13  | 17                  | 2                  | e       |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
|          | All Office + Cumulative  | 27   | 0                        | 0            |         | 12  | 16                  | 1                  | e       |
| 66       | Existing                 | 20   | 0                        |              |         | 9   | 3                   |                    |         |
|          | Existing + Resi/Office   | 29   | 0                        | 0            |         | 12  | 12                  | 3                  | e       |
|          | Existing + All Office    | 32   | 0                        | 0            |         | 13  | 19                  | 4                  | e       |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 10  | 7                   | 1                  |         |
|          | All Office + Cumulative  | 32   | 0                        | 0            |         | 11  | 10                  | 2                  |         |
| 67       | Existing                 | 29   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 30   | 0                        | 0            |         | 12  | 12                  | 1                  | e       |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 12  | 15                  | 1                  | e       |
|          | Resi/Office + Cumulative | 30   | 0                        | 0            |         | 10  | 8                   | -1                 |         |
|          | All Office + Cumulative  | 31   | 0                        | 0            |         | 11  | 10                  | 0                  |         |
| 68       | Existing                 | 32   | 0                        |              |         | 15  | 30                  |                    | e       |
|          | Existing + Resi/Office   | 29   | 0                        | 0            |         | 11  | 10                  | -4                 |         |
|          | Existing + All Office    | 30   | 0                        | 0            |         | 11  | 10                  | -4                 |         |
|          | Resi/Office + Cumulative | 28   | 0                        | 0            |         | 11  | 10                  | -4                 |         |
|          | All Office + Cumulative  | 30   | 0                        | 0            |         | 11  | 10                  | -4                 |         |
| 69       | Existing                 | 35   | 0                        |              |         | 16  | 31                  |                    | e       |
|          | Existing + Resi/Office   | 34   | 0                        | 0            |         | 14  | 21                  | -2                 | e       |
|          | Existing + All Office    | 35   | 0                        | 0            |         | 14  | 23                  | -2                 | e       |
|          | Resi/Office + Cumulative | 33   | 0                        | 0            |         | 12  | 14                  | -4                 | e       |
|          | All Office + Cumulative  | 34   | 0                        | 0            |         | 14  | 20                  | -2                 | e       |
| 70       | Existing                 | 33   | 0                        |              |         | 14  | 24                  |                    | e       |
|          | Existing + Resi/Office   | 33   | 0                        | 0            |         | 12  | 14                  | -2                 | e       |
|          | Existing + All Office    | 34   | 0                        | 0            |         | 12  | 14                  | -2                 | e       |
|          | Resi/Office + Cumulative | 33   | 0                        | 0            |         | 12  | 14                  | -2                 | e       |
|          | All Office + Cumulative  | 32   | 0                        | 0            |         | 12  | 16                  | -2                 | e       |
| 71       | Existing                 | 28   | 0                        |              |         | 11  | 10                  |                    |         |
|          | Existing + Resi/Office   | 29   | 0                        | 0            |         | 12  | 16                  | 1                  | e       |
|          | Existing + All Office    | 31   | 0                        | 0            |         | 14  | 22                  | 3                  | e       |
|          | Resi/Office + Cumulative | 27   | 0                        | 0            |         | 12  | 14                  | 1                  | e       |
|          | All Office + Cumulative  | 28   | 0                        | 0            |         | 12  | 14                  | 1                  | e       |
| 72       | Existing                 | 31   | 0                        |              |         | 13  | 21                  |                    | e       |
|          | Existing + Resi/Office   | 28   | 0                        | 0            |         | 13  | 20                  | 0                  | e       |
|          | Existing + All Office    | 31   | 0                        | 0            |         | 14  | 27                  | 1                  | e       |
|          | Resi/Office + Cumulative | 23   | 0                        | 0            |         | 11  | 10                  | -2                 |         |
|          | All Office + Cumulative  | 26   | 0                        | 0            |         | 13  | 17                  | 0                  | e       |

**Table 1: Pedestrian Wind Hazard and Comfort Results**

| Location | Configuration            | WIND HAZARD<br>(Wind speeds exceeding 36 mph for 1 hour/year) |                          |              |         | WIND COMFORT<br>(Wind speeds exceeding 11 mph for 10% of the time) |                     |                    |         |
|----------|--------------------------|---|--------------------------|--------------|---------|--|---------------------|--------------------|---------|
|          |                          | Wind Speed Exceeded (mph)                                     | Hours per Year Exceeding | Hours Change | Exceeds | Wind Speed Exceeded (mph)  | % of Time Exceeding | Speed Change (mph) | Exceeds |
| 73       | Existing                 | 24  | 0                        |              |         | 12   | 13                  |                    | e       |
|          | Existing + Resi/Office   | 26  | 0                        | 0            |         | 12   | 13                  | 0                  | e       |
|          | Existing + All Office    | 23  | 0                        | 0            |         | 11   | 10                  | -1                 |         |
|          | Resi/Office + Cumulative | 23  | 0                        | 0            |         | 11   | 10                  | -1                 |         |
|          | All Office + Cumulative  | 23  | 0                        | 0            |         | 11   | 10                  | -1                 |         |
| 74       | Existing                 | -   | -                        |              |         | -  | -                   |                    |         |
|          | Existing + Resi/Office   | 33  | 0                        | -            |         | 15   | 30                  | -                  | e       |
|          | Existing + All Office    | 30  | 0                        | -            |         | 13   | 19                  | -                  | e       |
|          | Resi/Office + Cumulative | 31  | 0                        | -            |         | 14   | 25                  | -                  | e       |
|          | All Office + Cumulative  | 28  | 0                        | -            |         | 13   | 17                  | -                  | e       |
| 75       | Existing                 | -   | -                        |              |         | -  | -                   |                    |         |
|          | Existing + Resi/Office   | 22  | 0                        | -            |         | 11   | 10                  | -                  |         |
|          | Existing + All Office    | 21  | 0                        | -            |         | 10   | 5                   | -                  |         |
|          | Resi/Office + Cumulative | 21  | 0                        | -            |         | 10   | 7                   | -                  |         |
|          | All Office + Cumulative  | 21  | 0                        | -            |         | 10   | 4                   | -                  |         |
| 76       | Existing                 | 16  | 0                        |              |         | 7  | 1                   |                    |         |
|          | Existing + Resi/Office   | 17  | 0                        | 0            |         | 7  | 1                   | 0                  |         |
|          | Existing + All Office    | 23  | 0                        | 0            |         | 8  | 2                   | 1                  |         |
|          | Resi/Office + Cumulative | 17  | 0                        | 0            |         | 6  | 0                   | -1                 |         |
|          | All Office + Cumulative  | 22  | 0                        | 0            |         | 7  | 1                   | 0                  |         |

| SUMMARY | Configurations          | WIND HAZARD   |                   |              |                   | WIND COMFORT  |             |                    |                   |
|---------|-------------------------|---------------|-------------------|--------------|-------------------|---------------|-------------|--------------------|-------------------|
|         |                         | Average (mph) | Total Hours (> 0) | Hours Change | Total Exceedences | Average (mph) | Average (%) | Speed Change (mph) | Total Exceedences |
|         | Existing                | 23 mph        | 0 hrs             |              | 0                 | 9 mph         | 4%          |                    | 12                |
|         | Existing + All Resi     | 26 mph        | 0 hrs             | 0 hrs        | 0                 | 10 mph        | 8%          | 1 mph              | 27                |
|         | Existing + All Office   | 28 mph        | 5 hrs             | 5 hrs        | 1                 | 11 mph        | 11%         | 2 mph              | 41                |
|         | All Resi + Cumulative   | 25 mph        | 0 hrs             | 0 hrs        | 0                 | 10 mph        | 8%          | 1 mph              | 22                |
|         | All Office + Cumulative | 27 mph        | 3 hrs             | 3 hrs        | 1                 | 11 mph        | 9%          | 2 mph              | 31                |

**Notes:**

- 1) Wind Hazard = Wind speeds exceeding 36 mph for  $\geq 1$  hour/year
- 2) Wind Comfort = Wind speeds exceeding 11 mph for > 10% of the time



The title 'APPENDIX A' is centered on a large, light beige circular graphic that overlaps a blue square in the top-left corner. The text is in a blue, sans-serif font.

# APPENDIX A

### Drawing List for Model Construction

The drawings and information listed below were received from Urban Planning Partners, Inc. and were used to construct the scale model of the proposed 2100 Telegraph Avenue. Should there be any design changes that deviate from this list of drawings, the results may change. Therefore, if changes in the design are made, it is recommended that RWDI be contacted and requested to review their potential effects on wind conditions.

| File Name              | File Type        | Date Received (dd/mm/yyyy) |
|------------------------|------------------|----------------------------|
| 2100 Mixed Use_Plan A  | .3dm (Rhinceros) | 14/10/2016                 |
| 20171005_2100T Massing | .3dm (Rhinceros) | 05/10/2017                 |

# PEDESTRIAN WIND



CONSULTING ENGINEERS  
& SCIENTISTS

2100 Telegraph Avenue – Oakland, CA  
Pedestrian Wind Study  
RWDI# 1601334  
April 28, 2017

## CITY OF OAKLAND PLANNING CODE REQUIREMENT

---

The City of Oakland considers a significant wind impact to occur if a project were to “Create winds exceeding 36 mph for more than one hour during daylight hours during the year”. A wind analysis only need to be done if the project’s height is 100 feet or greater (Measured to the roof) and one of the following conditions exists: (a) the project is located adjacent to a substantial water body (i.e. Oakland Estuary, Lake Merritt or San Francisco Bay); or (b) the project is located in Downtown. Since the proposed project exceeds 100 feet in height and is located in Downtown, it is subject to the thresholds of significance.

The equivalent wind speeds for hazard exceedance were calculated according to the specifications in the City of Oakland Significant Wind Impact Criterion, whereby the mean hourly wind speed is increased when the turbulence intensity is greater than 15% according to the following formula:

$$EWS = V_m \times (2 \times TI + 0.7)$$

Where

- EWS*** = equivalent wind speed
- V<sub>m</sub>*** = mean pedestrian-level wind speed
- TI*** = turbulence intensity



# FIGURES



**Wind Tunnel Study Model  
Existing + Landscaping**

2100 Telegraph Avenue – Oakland, CA

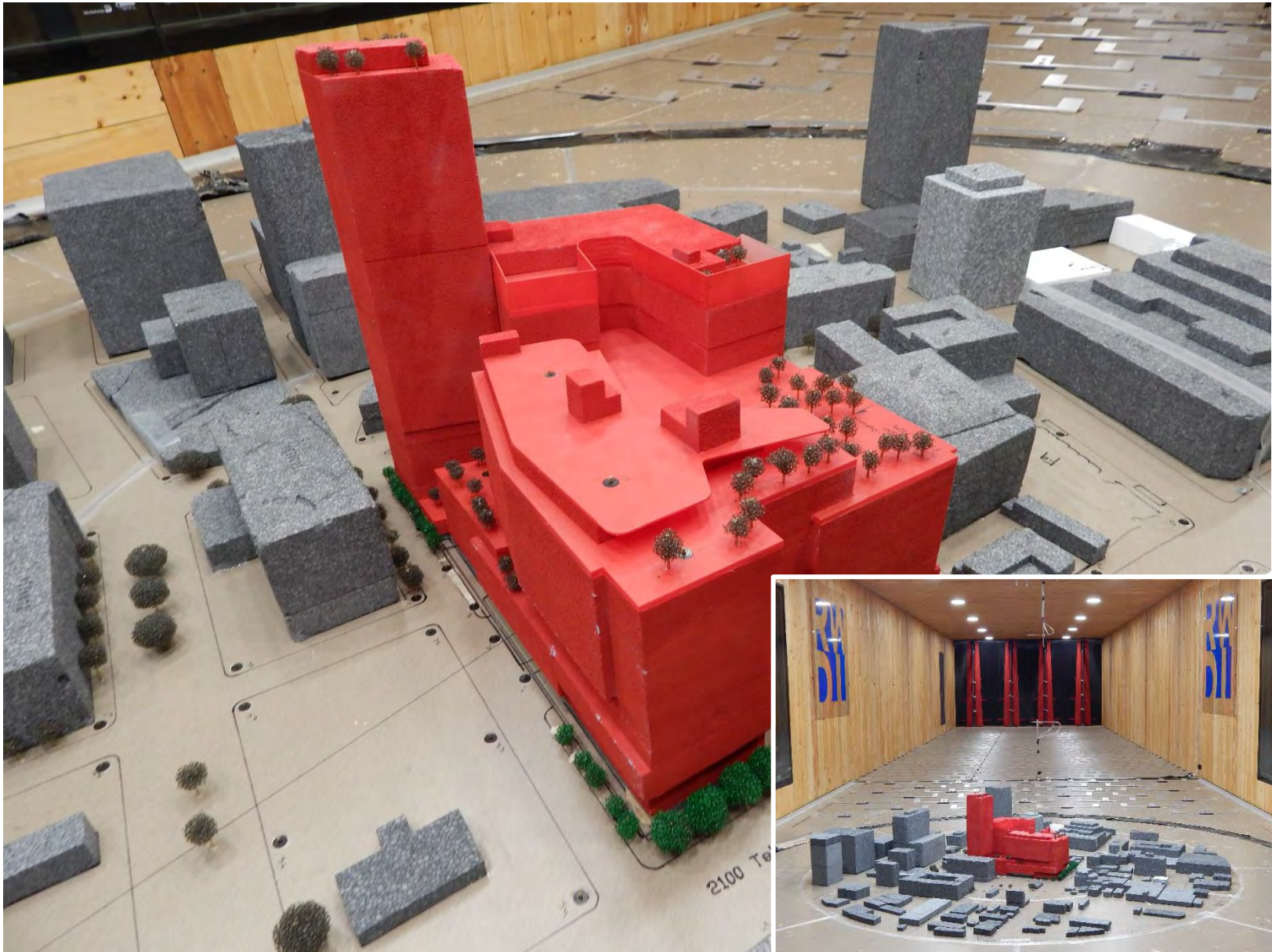
Figure No. 1a

Project #1601334

Date: October 13, 2017







**Wind Tunnel Study Model**  
**Residential/Office Mix Final Development Plan + Landscaping**

2100 Telegraph Avenue – Oakland, CA

Figure No. 1b

Project #1601334

Date: October 13, 2017







**Wind Tunnel Study Model**  
**Residential Mixed Use + Landscaping**

2100 Telegraph Avenue – Oakland, CA

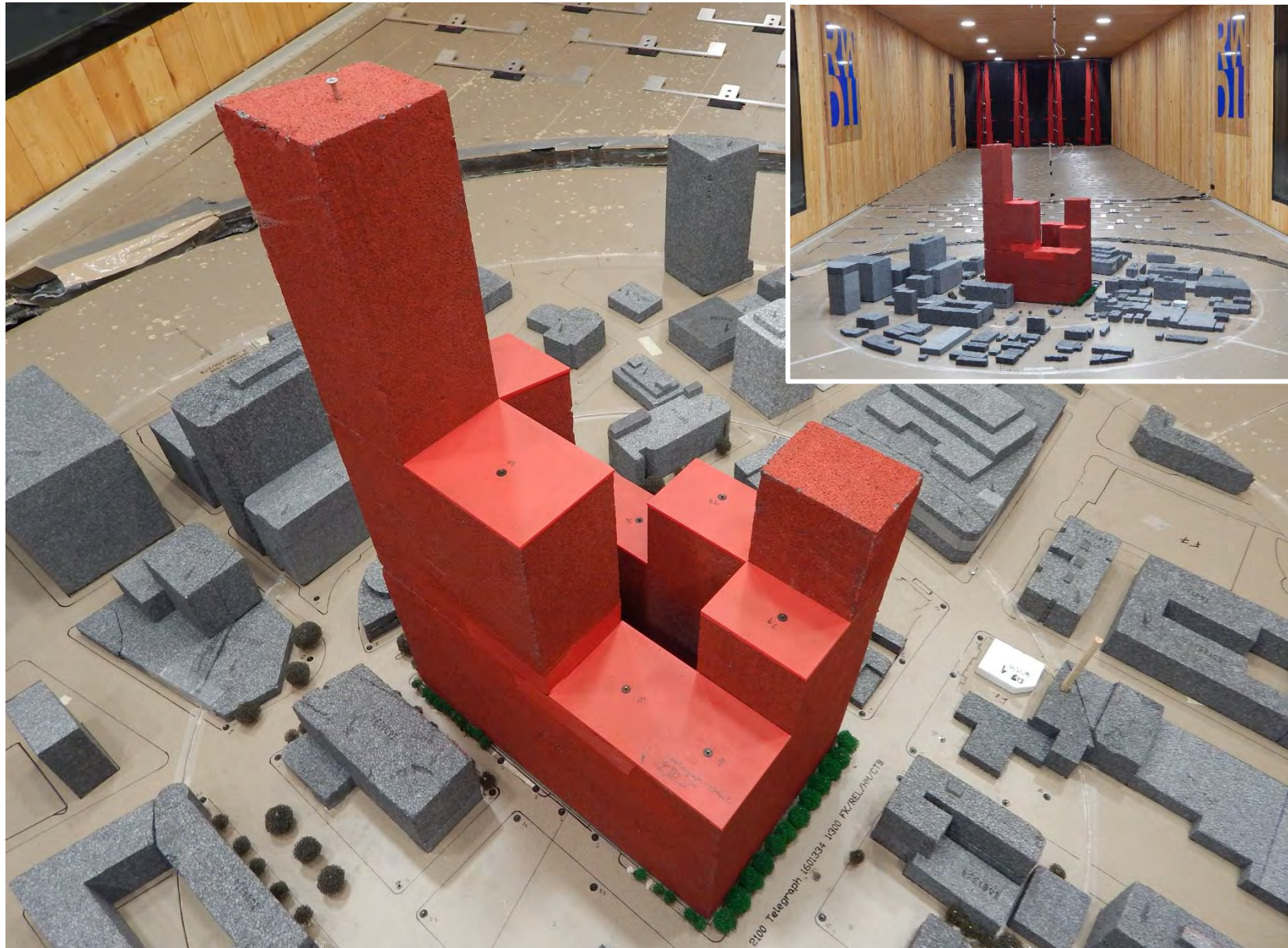
Figure No. 1c

Project #1601334

Date: October 13, 2017







**Wind Tunnel Study Model**  
**Maximum Office Development Scenario + Landscaping**

2100 Telegraph Avenue – Oakland, CA

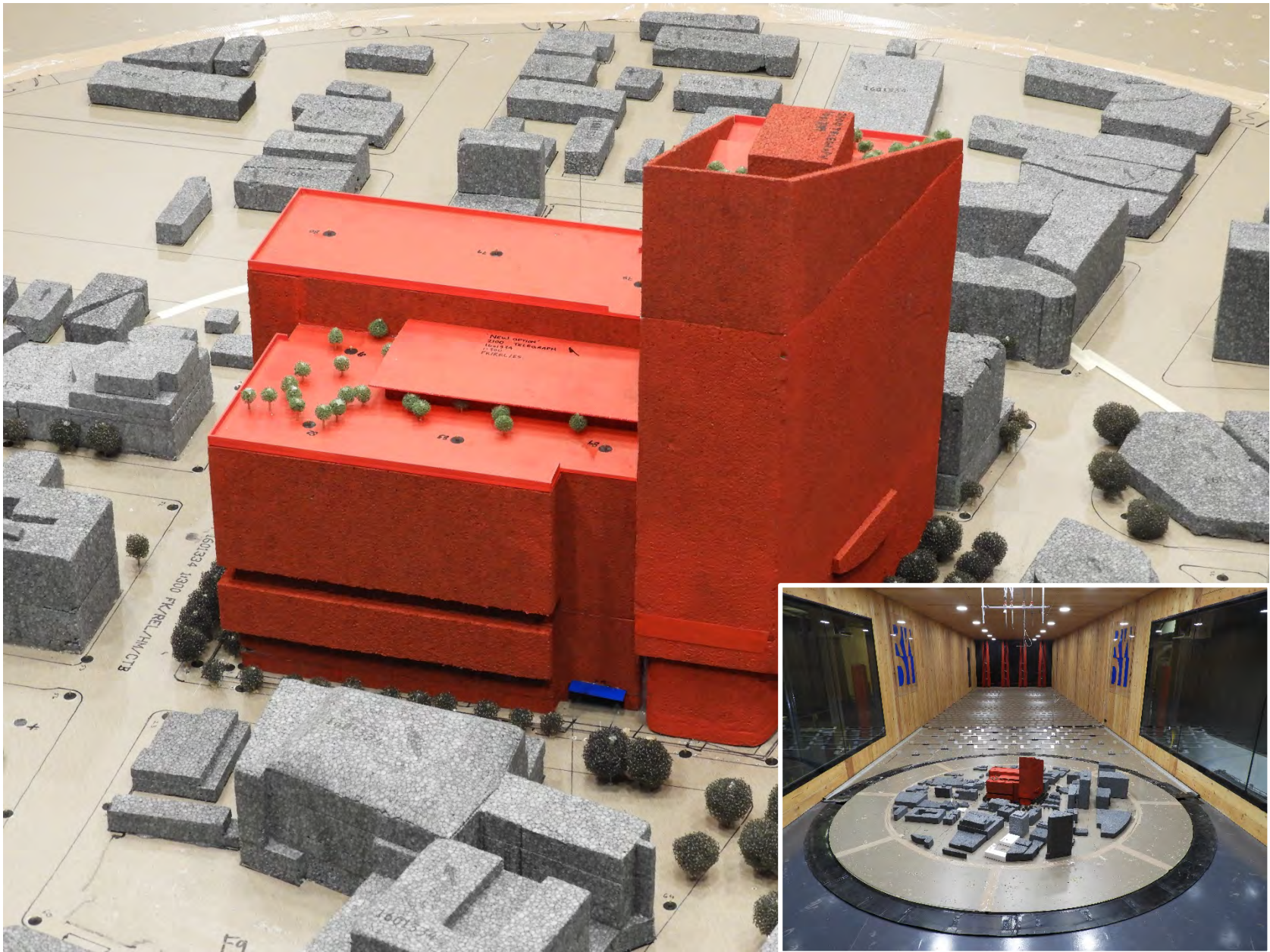
Figure No. 1d

Project #1601334

Date: October 13, 2017







**Wind Tunnel Study Model**  
**All Office Final Development Plan + Landscaping**

2100 Telegraph Avenue – Oakland, CA

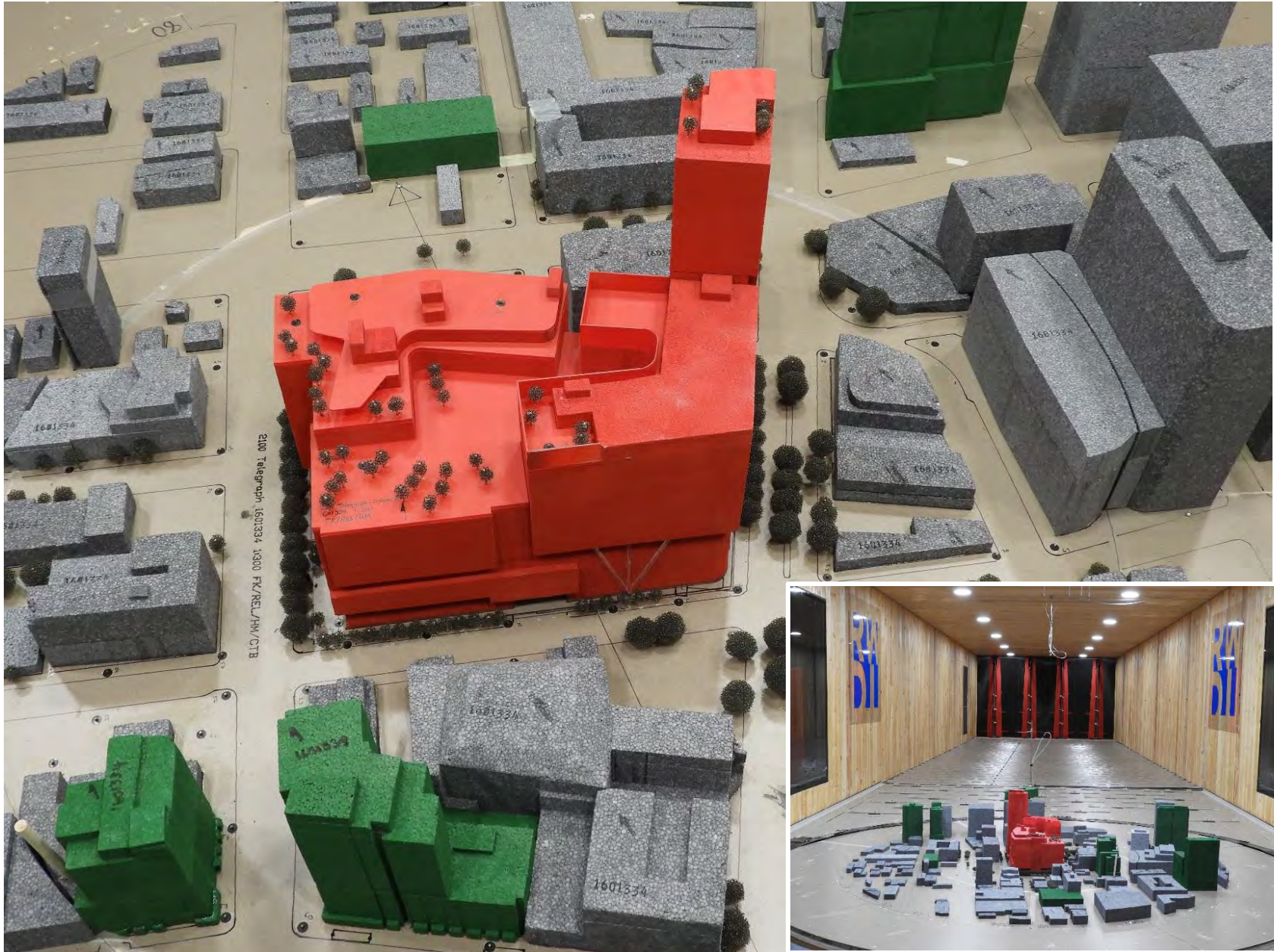
Figure No. 1e

Project #1601334

Date: November 17, 2017







**Wind Tunnel Study Model**  
**Residential/Office Mix Final Development Plan + Cumulative + Landscaping**

2100 Telegraph Avenue – Oakland, CA

Figure No. 1f

Project #1601334

Date: November 17, 2017







**Wind Tunnel Study Model**  
**Residential Mixed Use + Cumulative + Landscaping**

2100 Telegraph Avenue – Oakland, CA

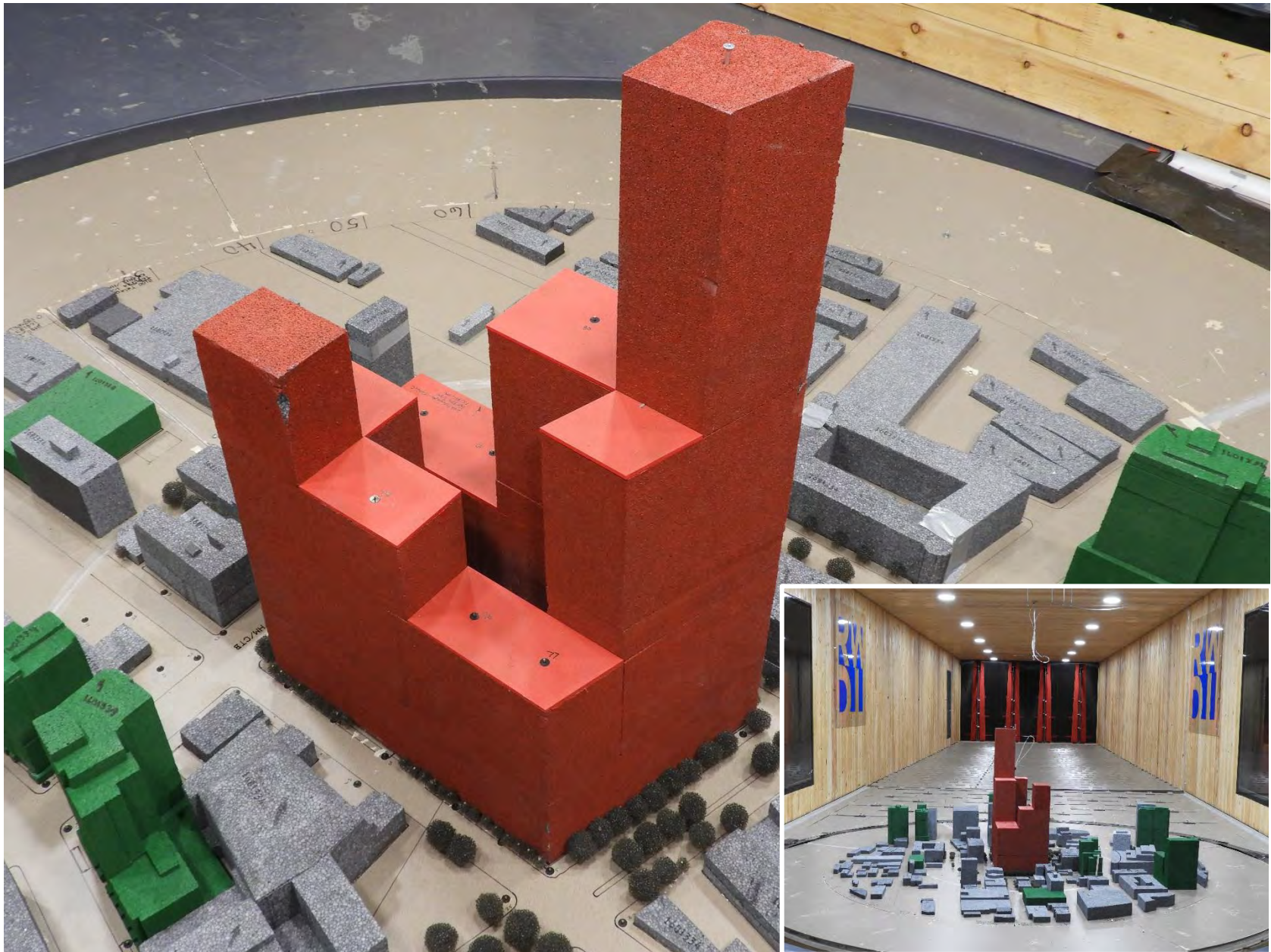
Figure No. 1g

Project #1601334

Date: November 17, 2017







**Wind Tunnel Study Model**  
**Maximum Office Development Scenario + Cumulative + Landscaping**

2100 Telegraph Avenue – Oakland, CA

Figure No. 1h

Project #1601334

Date: November 17, 2017







**Wind Tunnel Study Model**  
**All Office Final Development Plan + Cumulative + Landscaping**

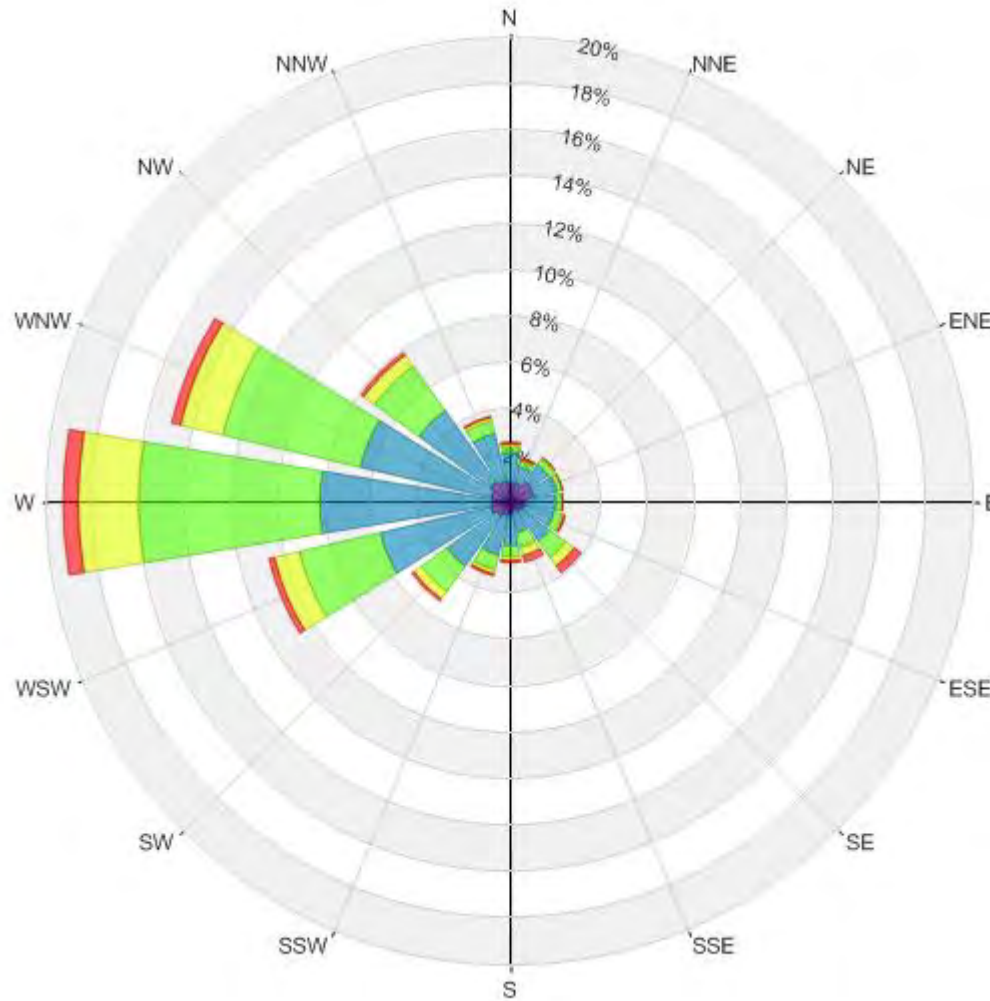
2100 Telegraph Avenue – Oakland, CA

Figure No. 1i

Project #1601334

Date: November 17, 2017





Annual Winds

| Wind Speed (mph) | Probability (%) |
|------------------|-----------------|
| Calm             | 11.8            |
| 1-5              | 12.4            |
| 6-10             | 39.0            |
| 11-15            | 26.0            |
| 16-20            | 8.3             |
| >20              | 2.6             |

**Directional Distribution (%) of Winds (Blowing From)  
Metropolitan Oakland International Airport (1984 - 2014)**

2100 Telegraph Avenue – Oakland, CA

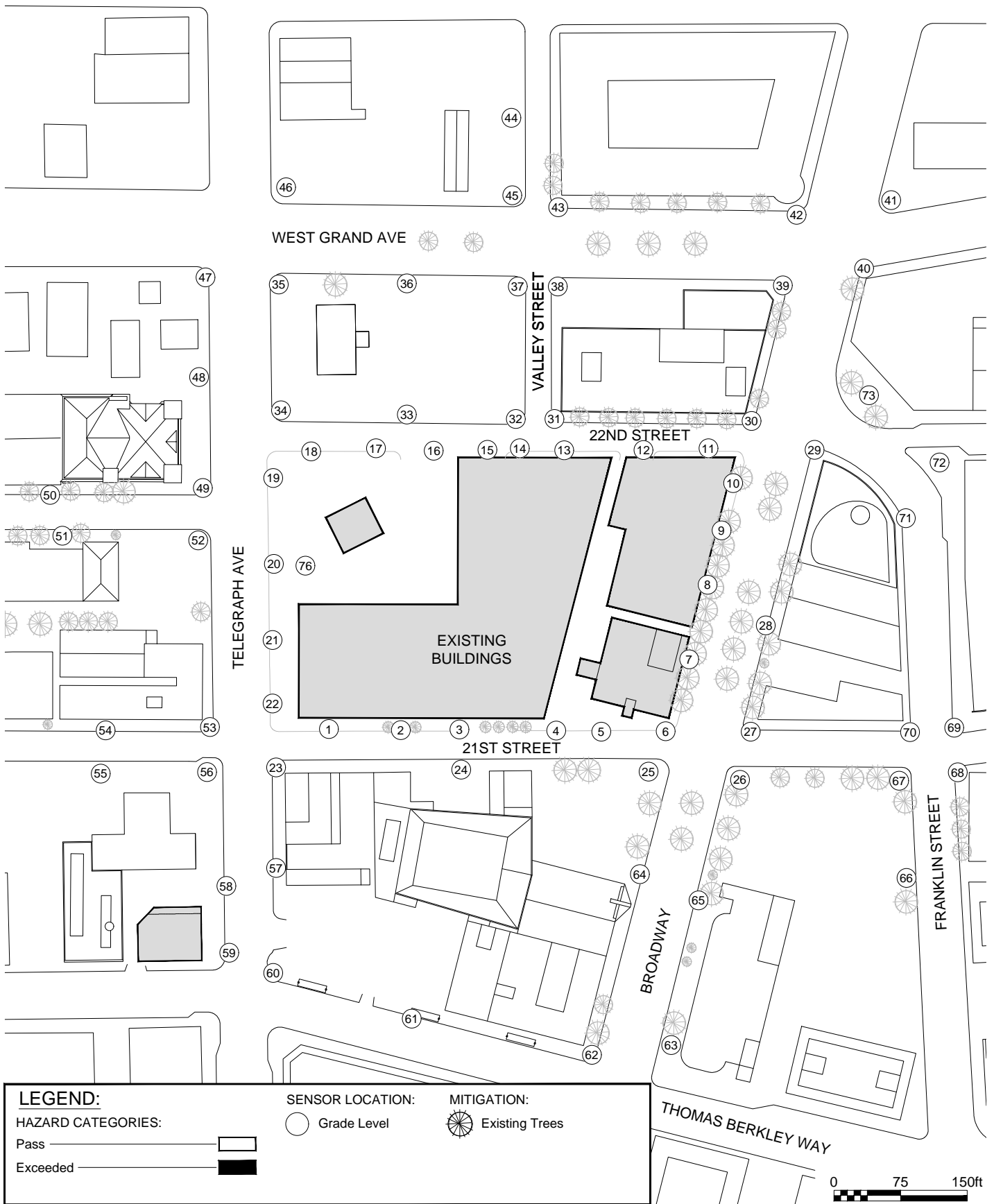
Figure No. 2

Project #1601334

Date: April 28, 2017







**LEGEND:**

**HAZARD CATEGORIES:**

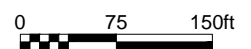
Pass   
 Exceeded

**SENSOR LOCATION:**

Grade Level

**MITIGATION:**

Existing Trees



**Pedestrian Wind Hazard Conditions**  
 Existing + Landscaping  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

True North



Drawn by: ARM Figure: 3a

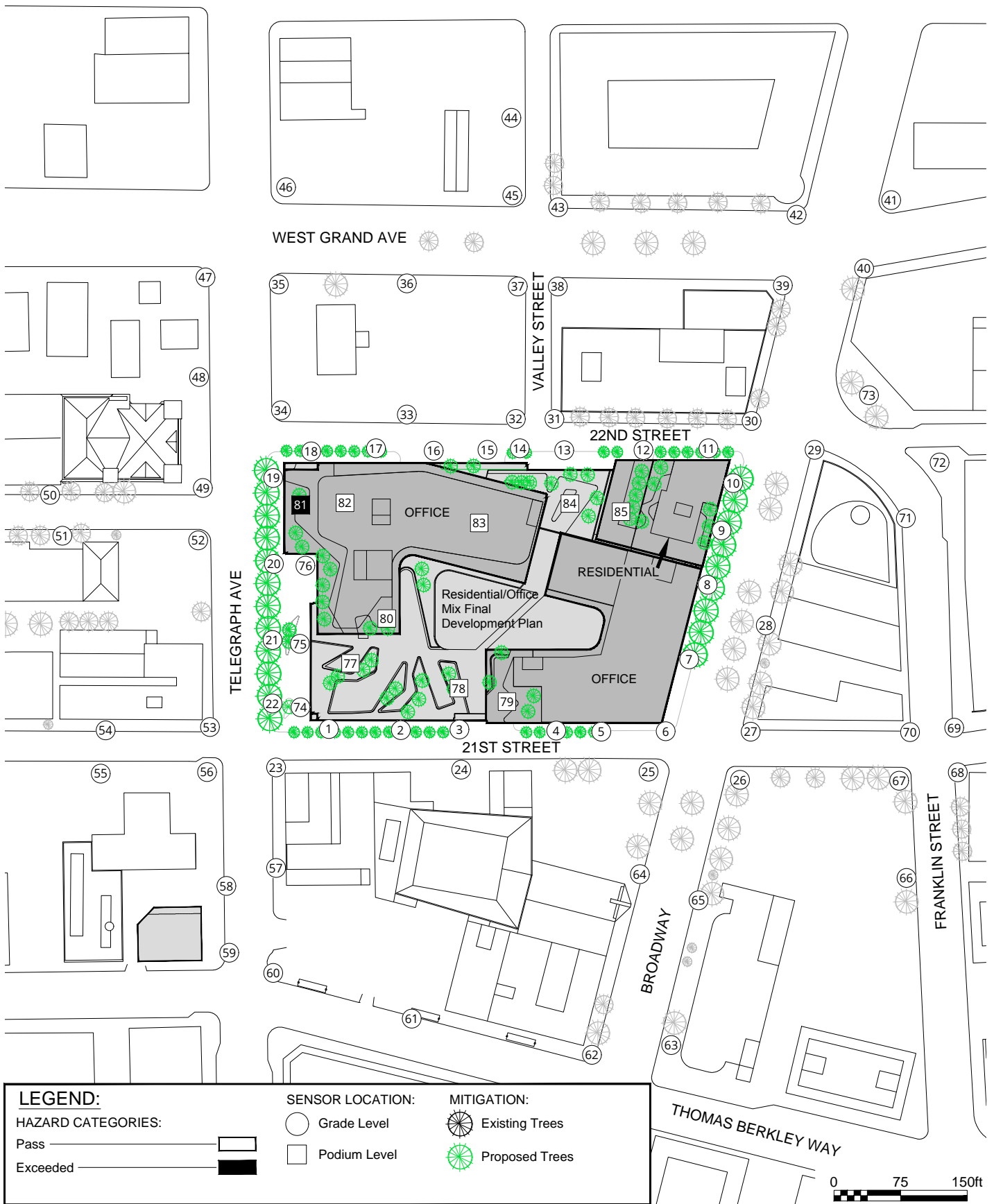
Approx. Scale: 1"=150'

Date Revised: Sept. 8, 2017



Project #1601334





**LEGEND:**

**HAZARD CATEGORIES:**

Pass   
 Exceeded

**SENSOR LOCATION:**

Grade Level   
 Podium Level

**MITIGATION:**

Existing Trees   
 Proposed Trees

**Pedestrian Wind Hazard Conditions**  
 Residential/Office Mix Final Development Plan + Landscaping  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

True North



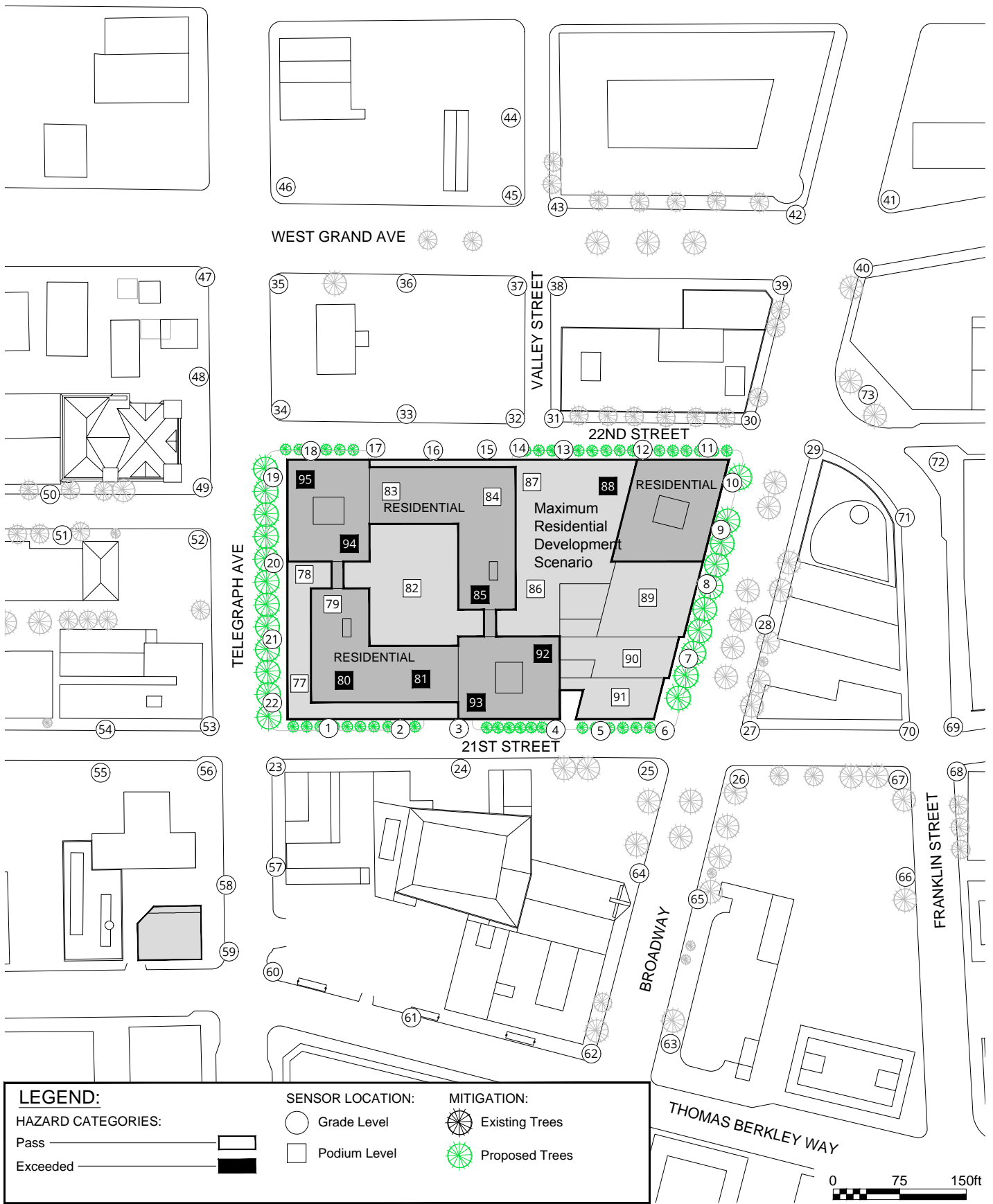
Drawn by: ARM Figure: 3b

Approx. Scale: 1"=150'

Date Revised: Sept. 8, 2017





Project #1601334





**LEGEND:**



**HAZARD CATEGORIES:**

Pass   
 Exceeded 

**SENSOR LOCATION:**

 Grade Level  
 Podium Level

**MITIGATION:**

 Existing Trees  
 Proposed Trees

**Pedestrian Wind Hazard Conditions**  
 Maximum Residential Development Scenario+ Landscaping  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA



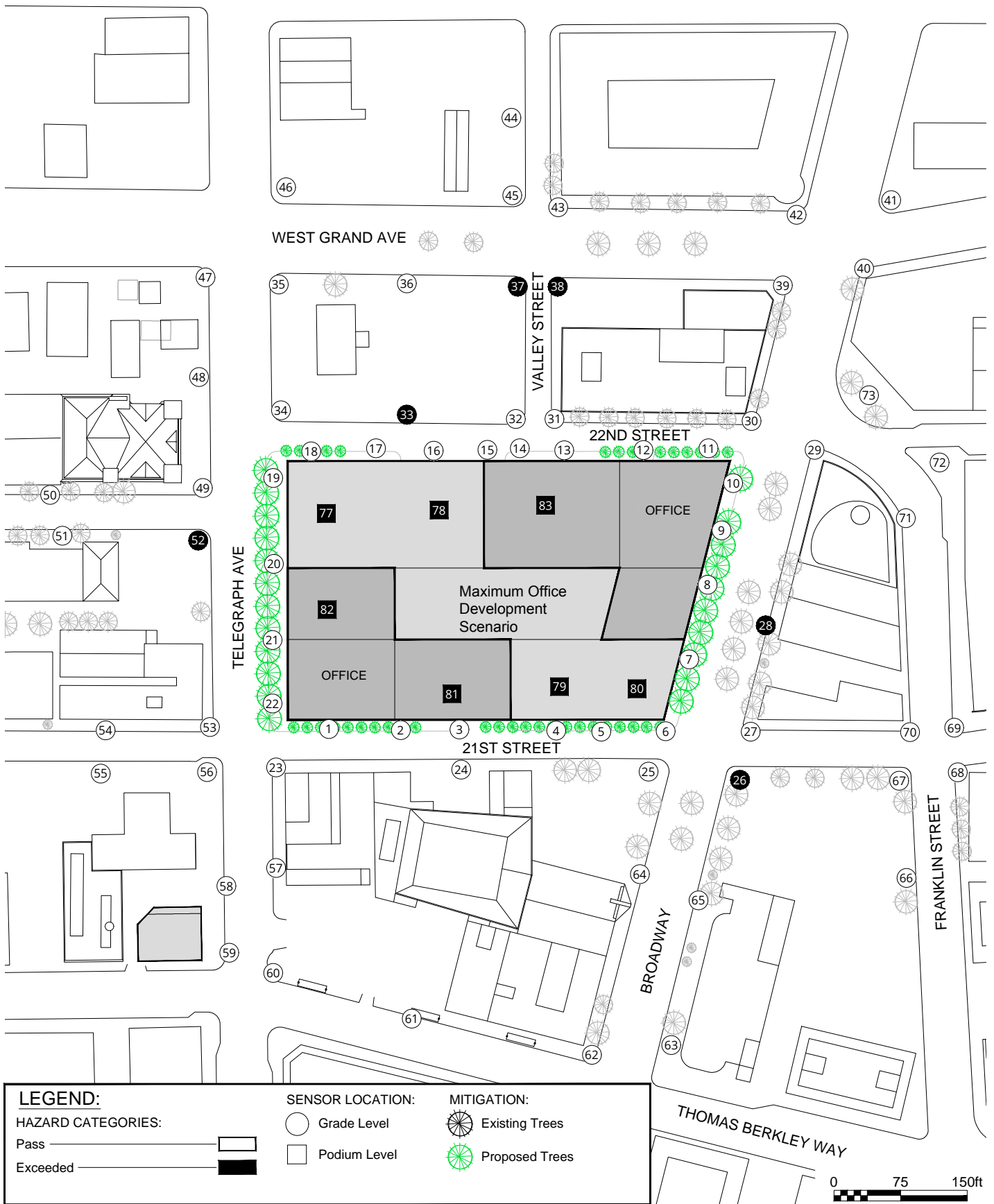
Project #1601334

Drawn by: ARM Figure: 3C

Approx. Scale: 1"=150'

Date Revised: Sept. 8, 2017





**LEGEND:**

**HAZARD CATEGORIES:**

Pass   
 Exceeded

**SENSOR LOCATION:**

Grade Level   
 Podium Level

**MITIGATION:**

Existing Trees   
 Proposed Trees

**Pedestrian Wind Hazard Conditions**  
**Maximum Office Development Scenario+ Landscaping**  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

True North



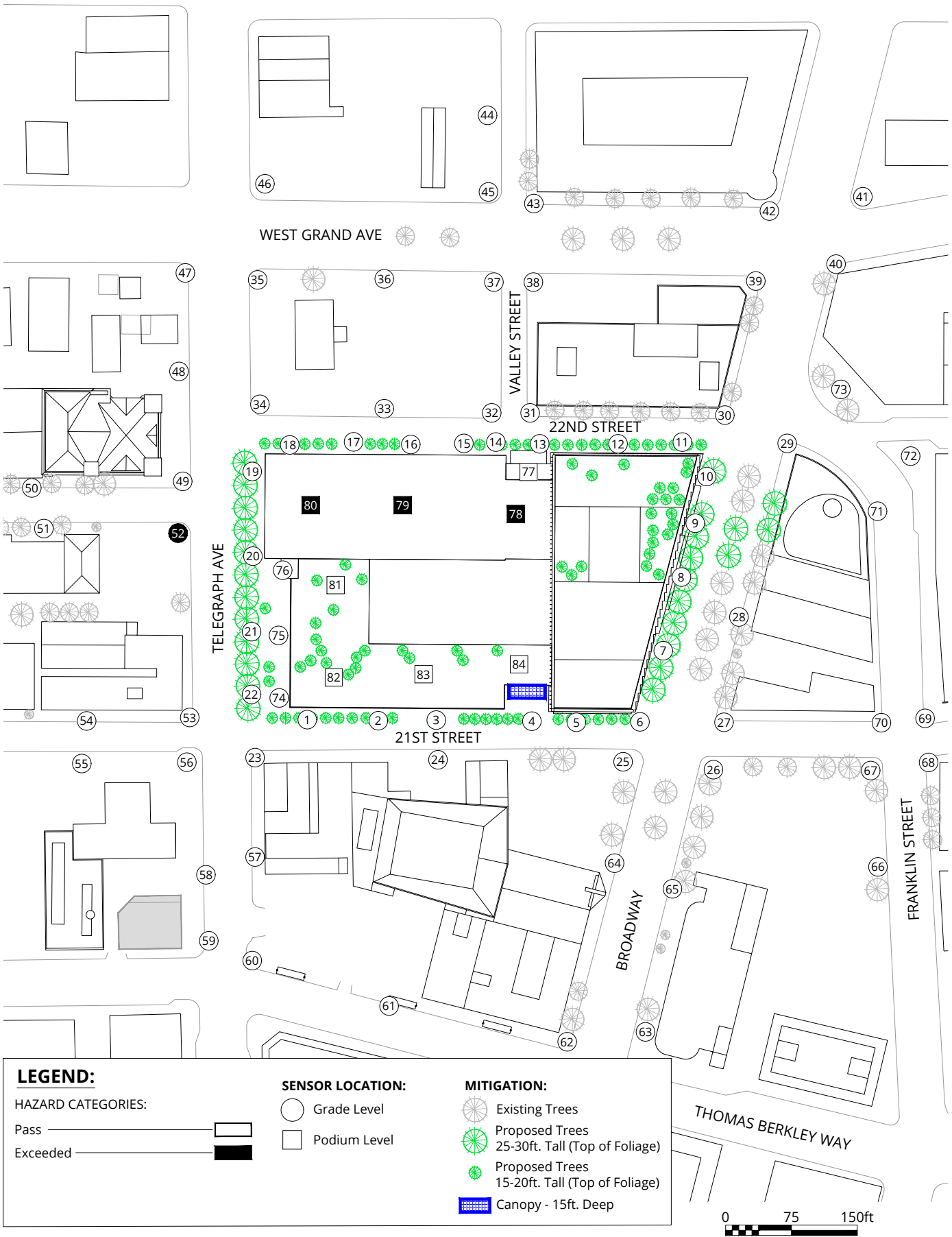
Drawn by: ARM Figure: 3d

Approx. Scale: 1"=150'

Date Revised: Sept. 8, 2017



Project #1601334



**Pedestrian Wind Hazard Conditions**  
 Existing + All Office Final Development Plan  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

True North



Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: DBB             | Figure: 3e |
| Approx. Scale: 1"=150'    |            |
| Date Revised: Nov 9, 2017 |            |





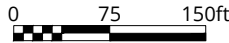


**LEGEND:**

**HAZARD CATEGORIES:**  
 Pass   
 Exceeded

**SENSOR LOCATION:**  
 ○ Grade Level  
 □ Podium Level

**MITIGATION:**  
 ○ Existing Trees  
 ● Proposed Coniferous Trees

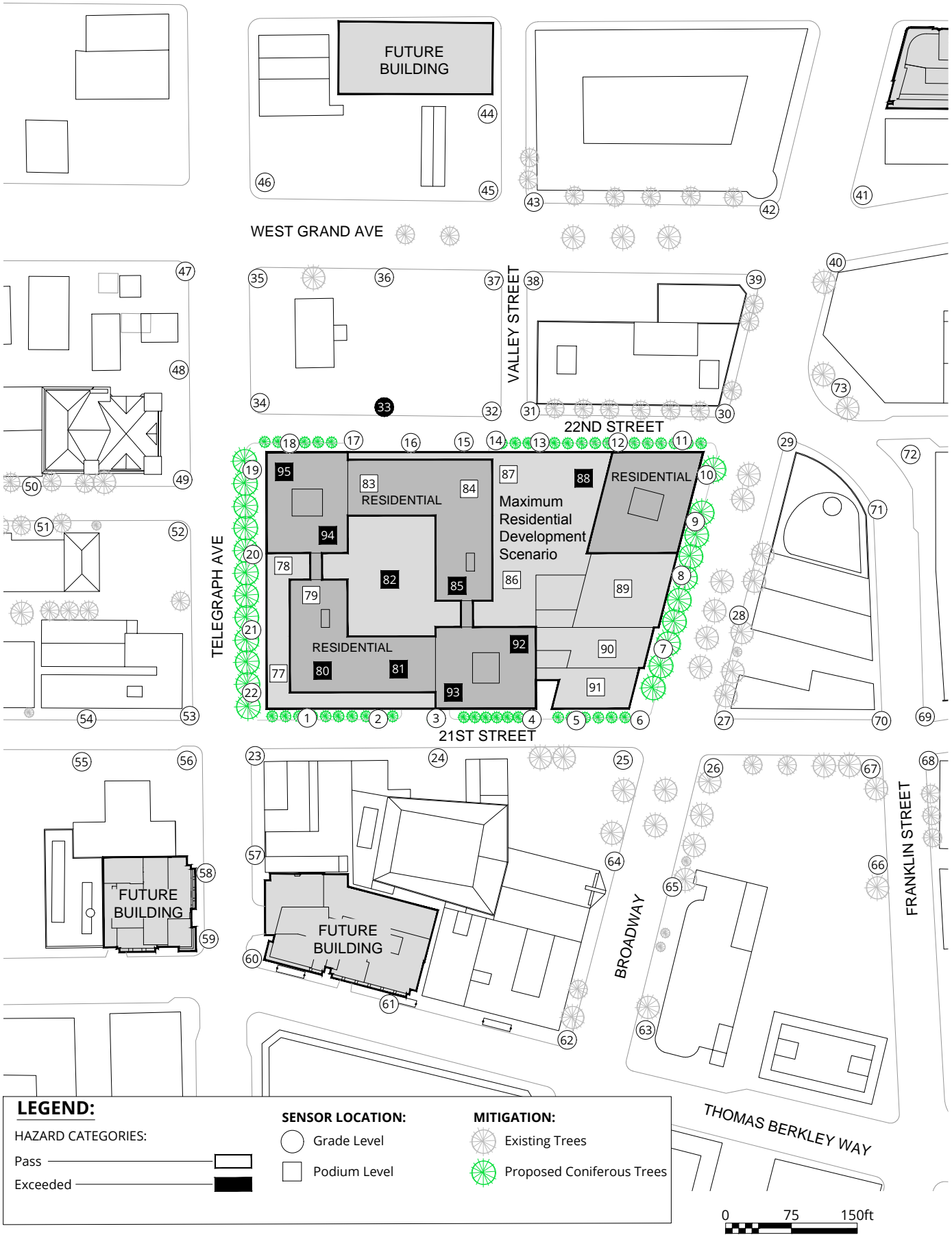


**Pedestrian Wind Hazard Conditions**  
 Residential/Office Mix Final Development Plan  
 + Cumulative + Landscaping  
 Annual (January to December)  
 2100 Telegraph Avenue - Oakland, CA

True North  
  
 Project #1601334


Drawn by: ARM Figure: 3f  
 Approx. Scale: 1"=150'  
 Date Revised: May 2, 2017







**LEGEND:**


HAZARD CATEGORIES:

Pass 


Exceeded 


**SENSOR LOCATION:**

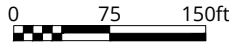
 Grade Level

 Podium Level

**MITIGATION:**

 Existing Trees

 Proposed Coniferous Trees



|  |  |                                  |   |
|--|--|----------------------------------|---|
| <p><b>Pedestrian Wind Hazard Conditions</b><br/>         Maximum Residential Development Scenario +<br/>         Cumulative + Landscaping<br/>         Annual (January to December)<br/>         2100 Telegraph Avenue - Oakland, CA</p> | <p>True North<br/> </p> | <p>Drawn by: ARM Figure: 3g</p>  |  |
|  |  | <p>Approx. Scale: 1"=150'</p>    |   |
|  |  | <p>Date Revised: May 2, 2017</p> |   |



**LEGEND:**

**HAZARD CATEGORIES:**

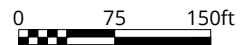
Pass   
 Exceeded

**SENSOR LOCATION:**

Grade Level   
 Podium Level

**MITIGATION:**

Existing Trees   
 Proposed Coniferous Trees



**Pedestrian Wind Hazard Conditions**

Maximum Office Development Scenario +  
Cumulative + Landscaping  
Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

True North



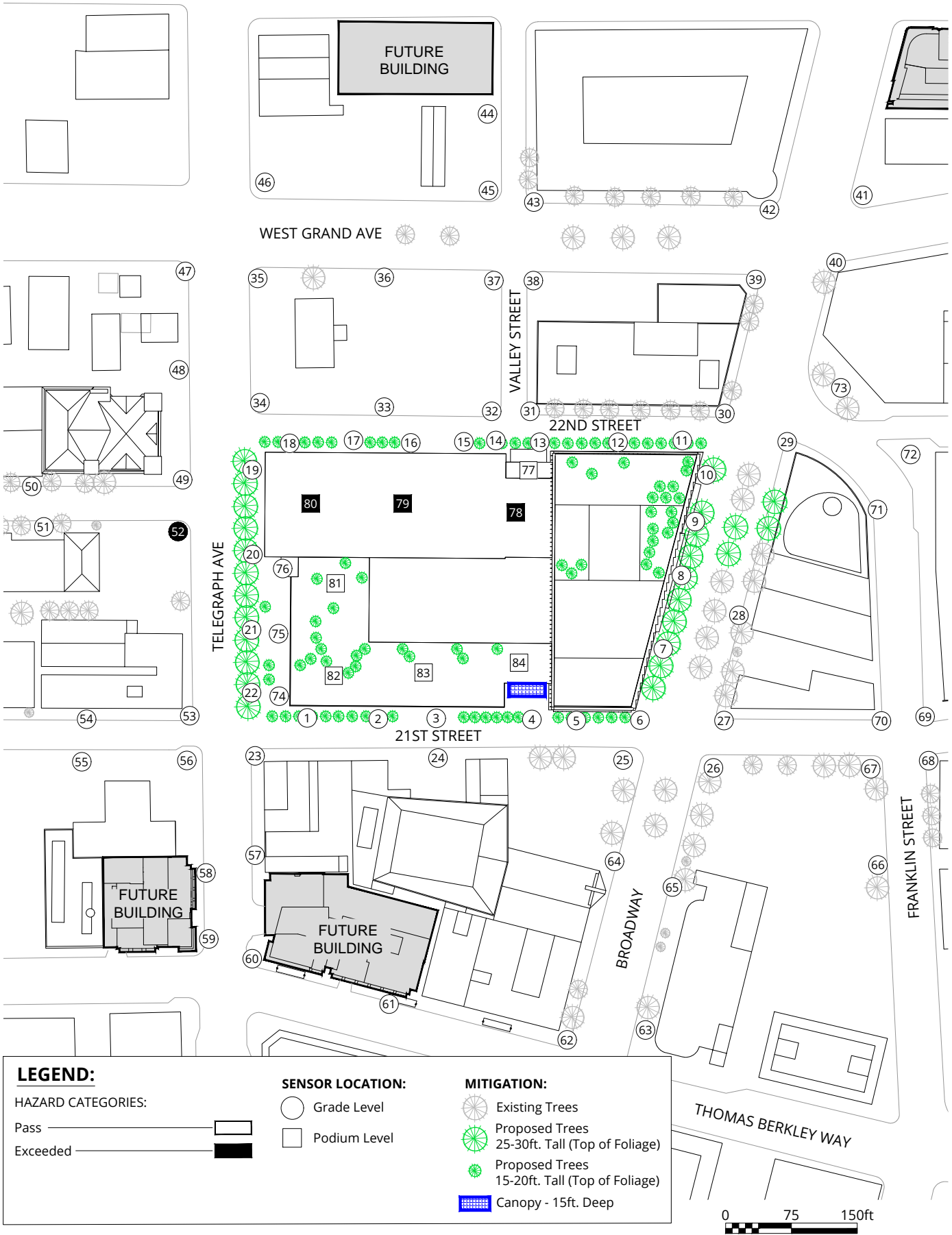
Drawn by: ARM Figure: 3h

Approx. Scale: 1"=150'

Date Revised: May 2, 2017




Project #1601334



**Pedestrian Wind Hazard Conditions**  
 All Office Final Development Plan + Cumulative  
 Annual (January to December)

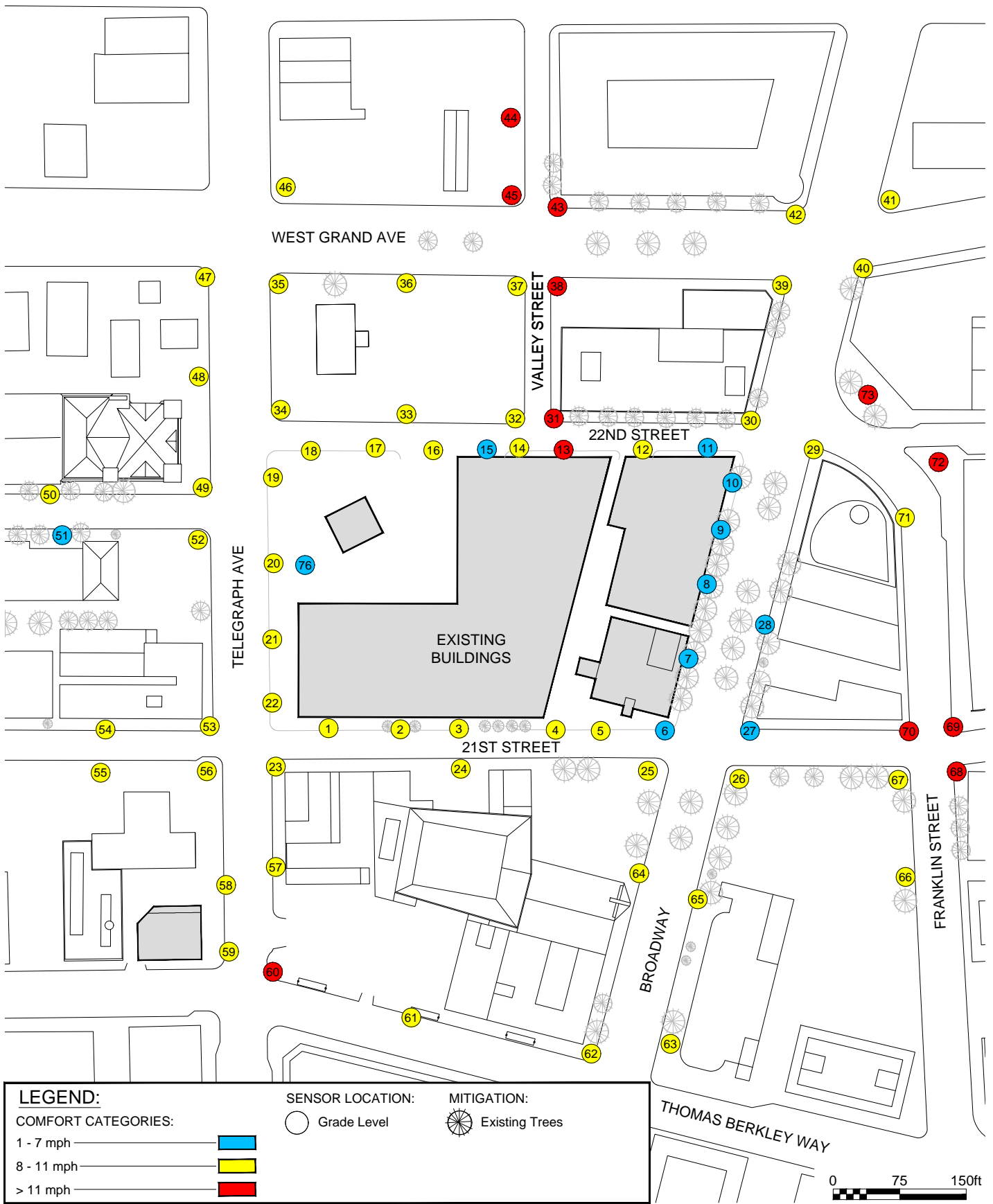
2100 Telegraph Avenue - Oakland, CA

True North  
  
 Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: DBB             | Figure: 3i |
| Approx. Scale: 1"=150'    |            |
| Date Revised: Nov 9, 2017 |            |







**Pedestrian Wind Comfort Conditions**  
 Existing + Landscaping  
 Annual (January to December)

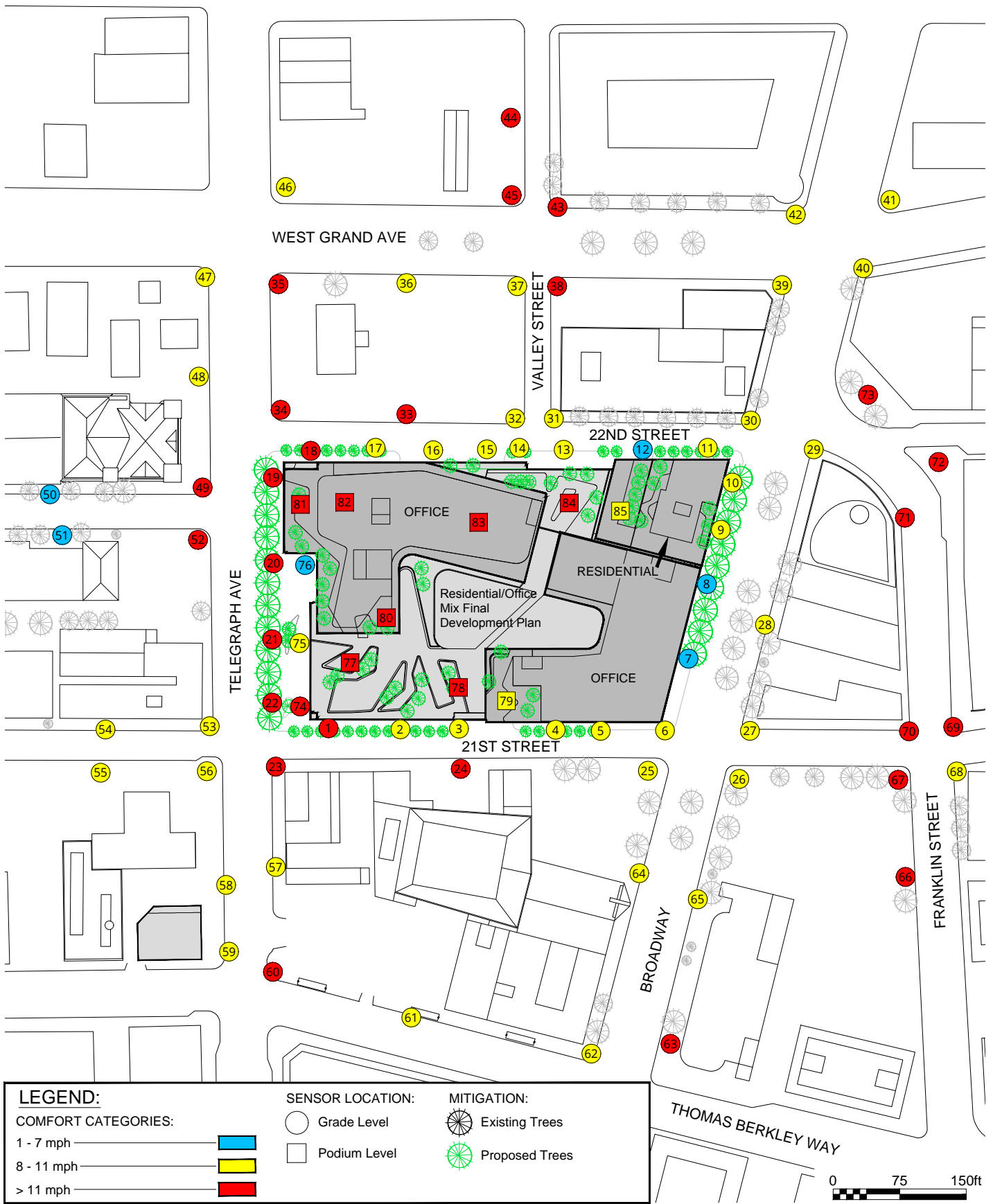
2100 Telegraph Avenue - Oakland, CA



Project #1601334

|                             |            |
|-----------------------------|------------|
| Drawn by: ARM               | Figure: 4a |
| Approx. Scale: 1"=150'      |            |
| Date Revised: Sept. 8, 2017 |            |





**LEGEND:**

**COMFORT CATEGORIES:**

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

**SENSOR LOCATION:**

- Grade Level
- Podium Level

**MITIGATION:**

- Existing Trees
- Proposed Trees

**Pedestrian Wind Comfort Conditions  
Residential/Office Mix Final Development Plan +  
Landscaping Annual (January to December)**

2100 Telegraph Avenue - Oakland, CA

True North



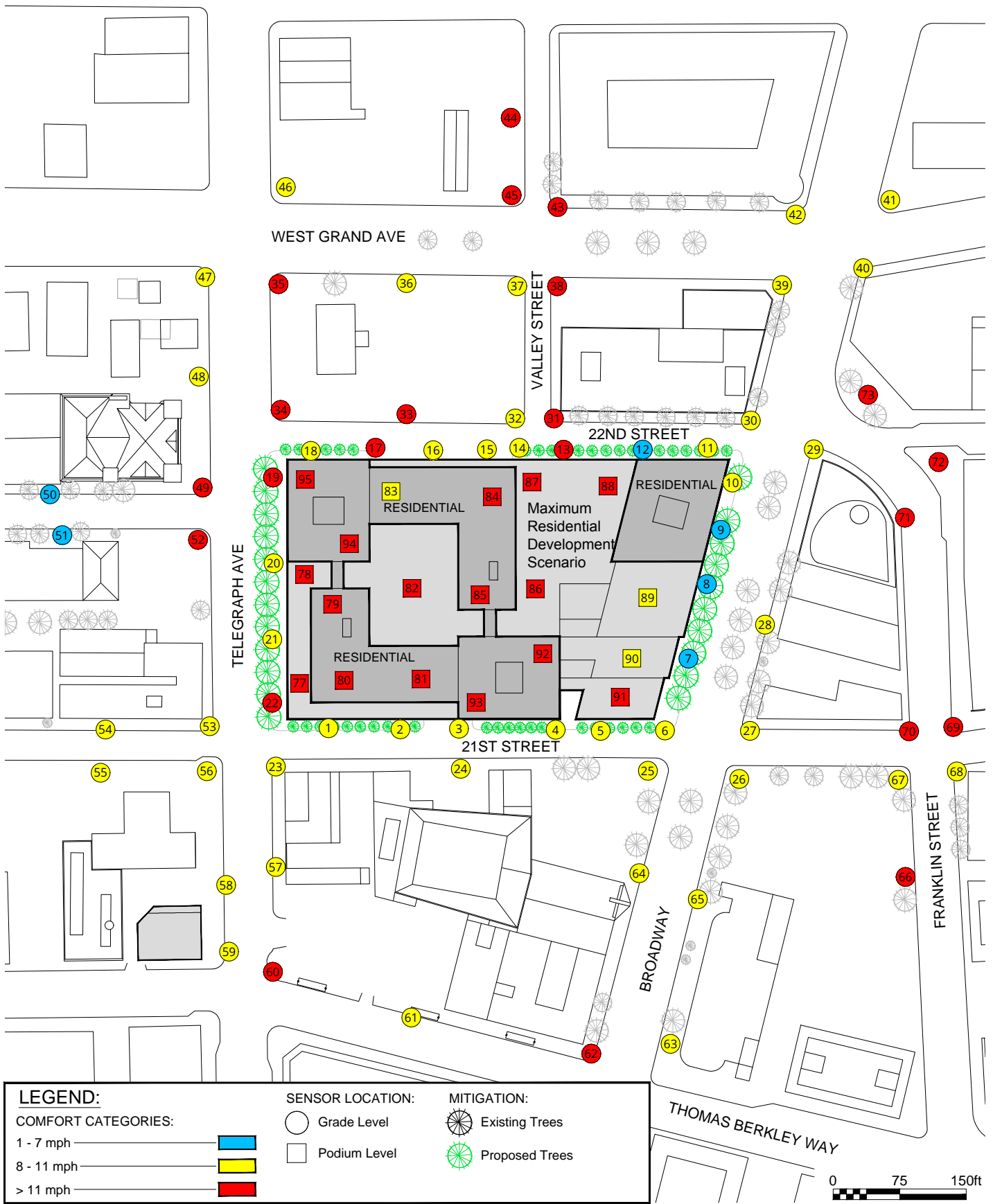
Drawn by: ARM Figure: 4b

Approx. Scale: 1"=150'

Date Revised: Sept. 8, 2017

Project #1601334





**Pedestrian Wind Comfort Conditions**  
**Maximum Residential Development Scenario + Landscaping**  
 Annual (January to December)

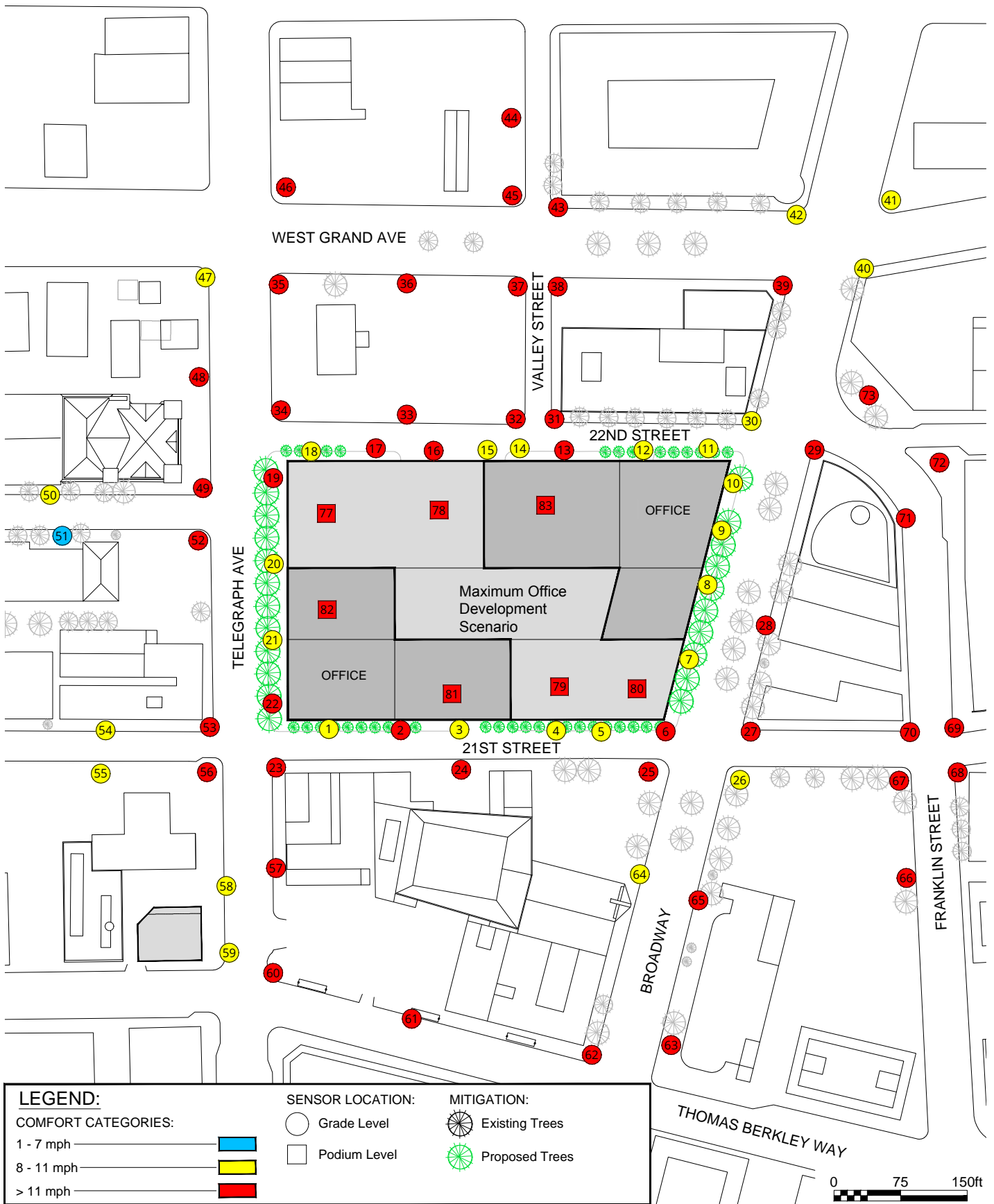
2100 Telegraph Avenue - Oakland, CA



Project #1601334

|                             |            |
|-----------------------------|------------|
| Drawn by: ARM               | Figure: 4C |
| Approx. Scale: 1"=150'      |            |
| Date Revised: Sept. 8, 2017 |            |





**Pedestrian Wind Comfort Conditions**  
**Maximum Office Development Scenario + Landscaping**  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA

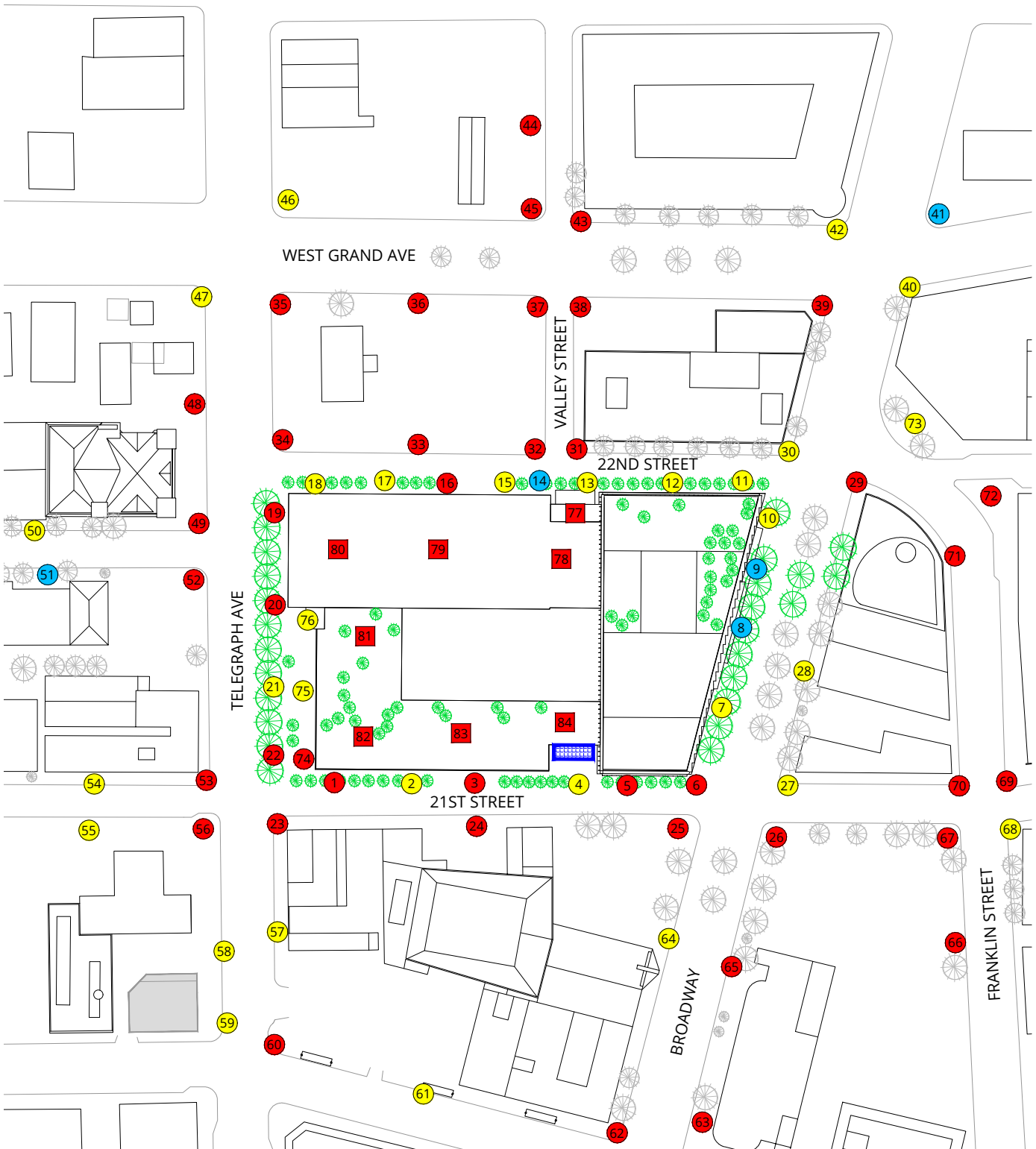


Project #1601334

|                             |            |
|-----------------------------|------------|
| Drawn by: ARM               | Figure: 4d |
| Approx. Scale: 1"=150'      |            |
| Date Revised: Sept. 8, 2017 |            |







**LEGEND:**

COMFORT CATEGORIES:

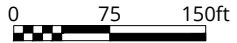
- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

**SENSOR LOCATION:**

- Grade Level
- Podium Level

**MITIGATION:**

- Existing Trees
- Proposed Trees 25-30ft. Tall (Top of Foliage)
- Proposed Trees 15-20ft. Tall (Top of Foliage)
- Canopy - 15ft. Deep



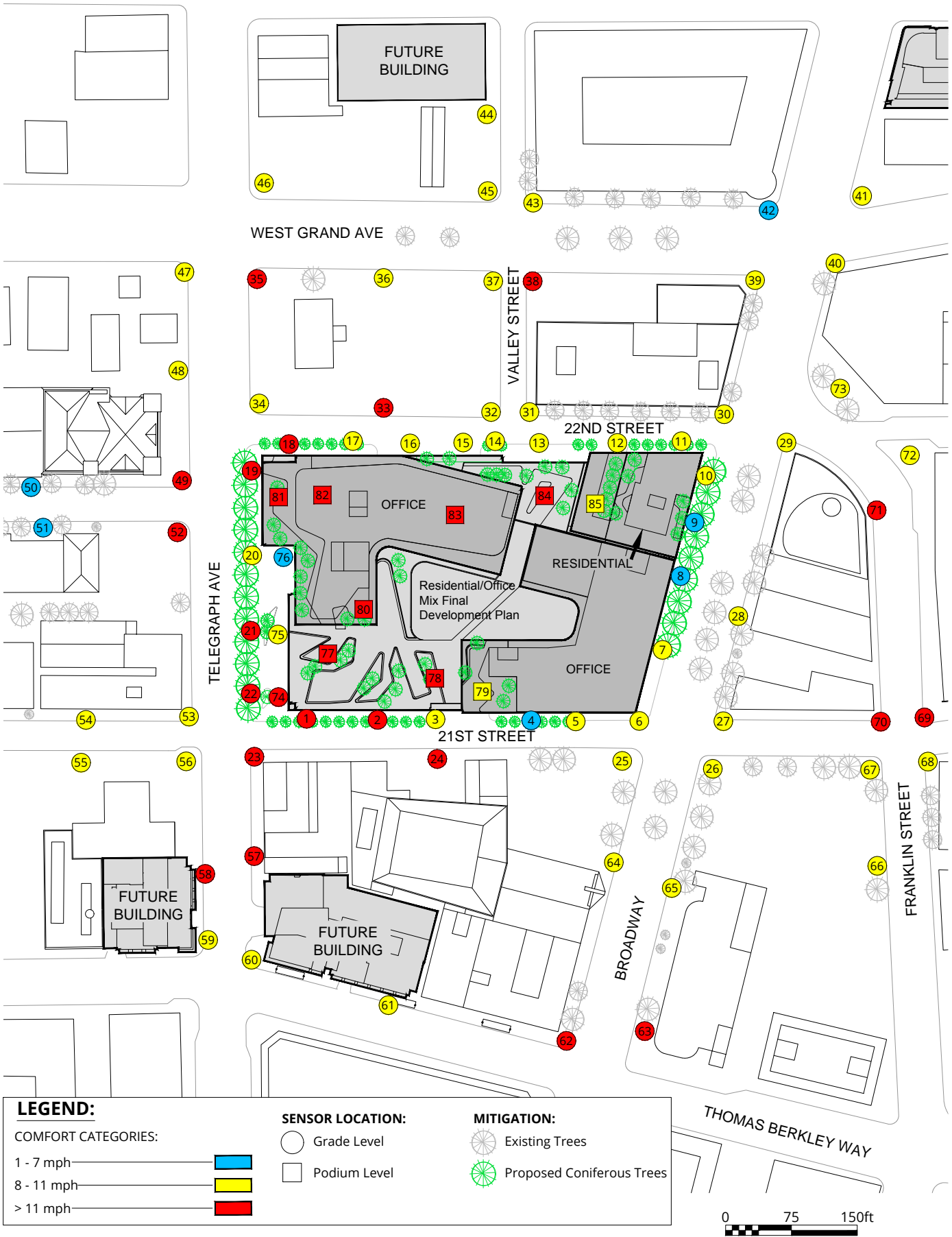
**Pedestrian Wind Comfort Conditions**  
 Existing + All Office Final Development Plan  
 Annual (January to December)  
 2100 Telegraph Avenue - Oakland, CA



Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: DBB             | Figure: 4e |
| Approx. Scale: 1"=150'    |            |
| Date Revised: Nov 9, 2017 |            |





**LEGEND:**

COMFORT CATEGORIES:

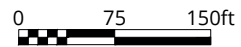
- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

**SENSOR LOCATION:**

- Grade Level
- Podium Level

**MITIGATION:**

- Existing Trees
- Proposed Coniferous Trees



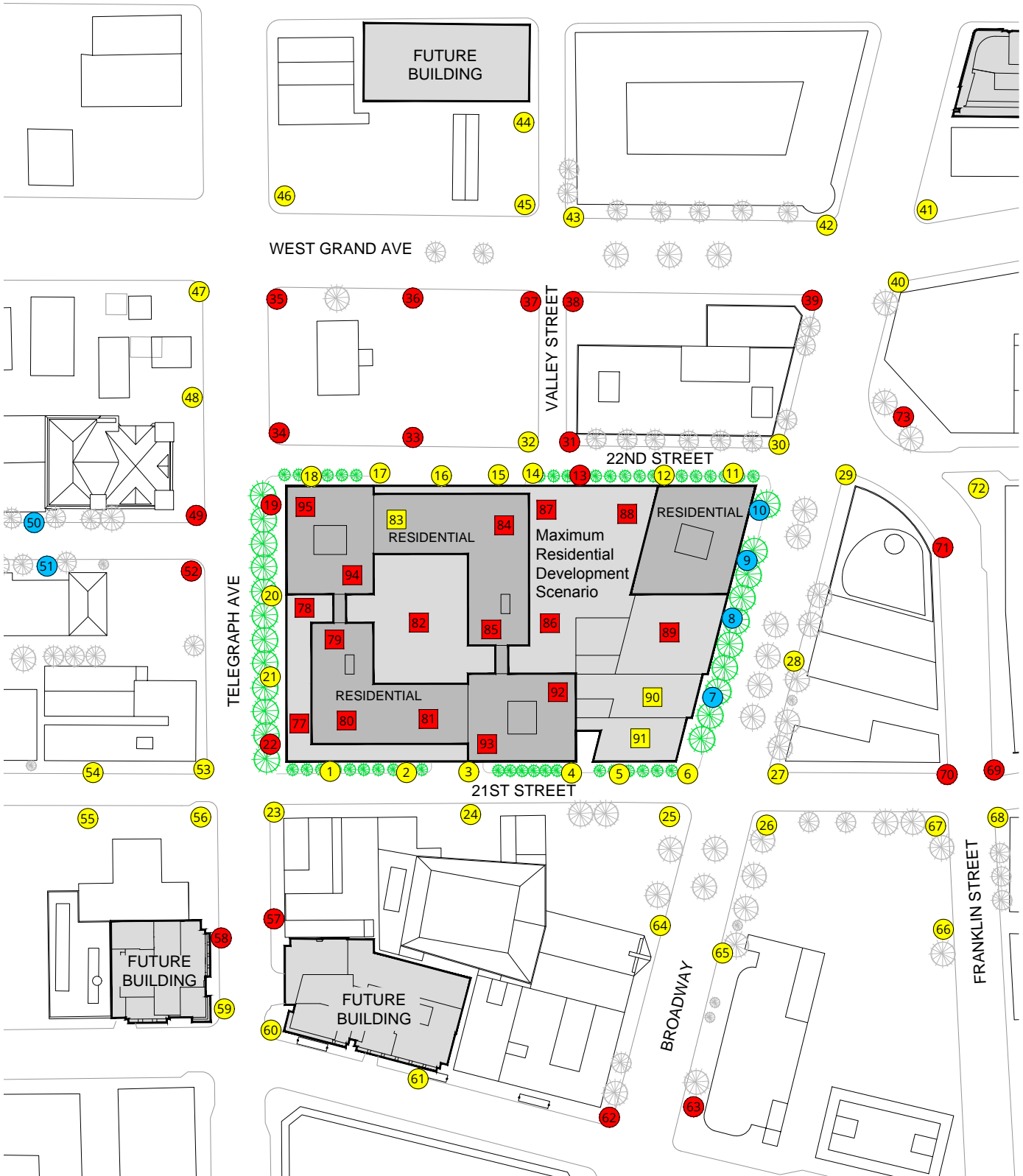
**Pedestrian Wind Comfort Conditions**  
 Residential/Office Mix Final Development Plan +  
 Cumulative + Landscaping  
 Annual (January to December)  
 2100 Telegraph Avenue - Oakland, CA



Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: ARM             | Figure: 4f |
| Approx. Scale: 1"=150'    |            |
| Date Revised: May 2, 2017 |            |





**LEGEND:**

COMFORT CATEGORIES:

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph

**SENSOR LOCATION:**

- Grade Level
- Podium Level

**MITIGATION:**

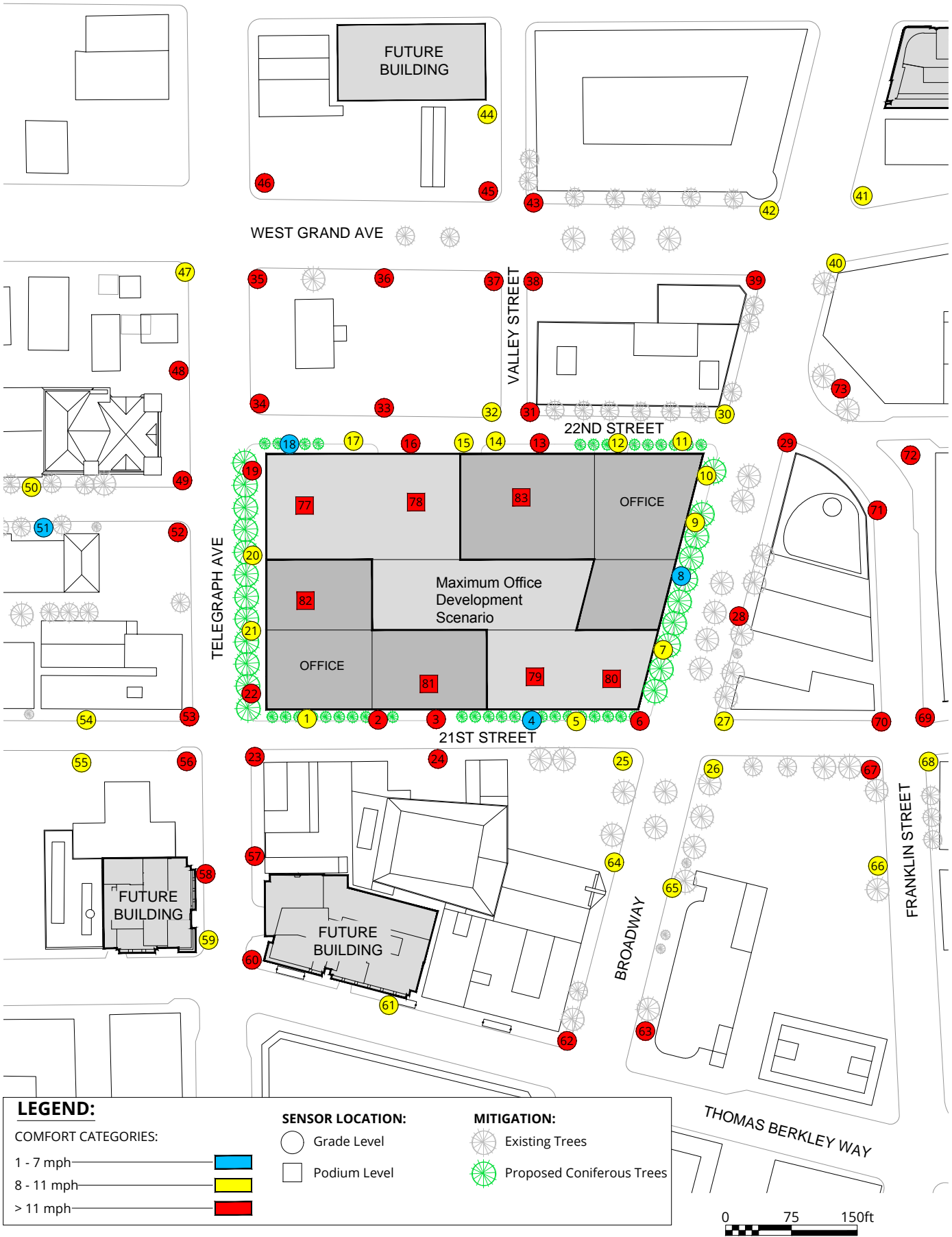
- Existing Trees
- Proposed Coniferous Trees

**Pedestrian Wind Comfort Conditions**  
 Maximum Residential Development Scenario +  
 Cumulative + Landscaping  
 Annual (January to December)  
 2100 Telegraph Avenue - Oakland, CA

True North  
  
 Project #1601334

Drawn by: ARM Figure: 4g  
 Approx. Scale: 1"=150'  
 Date Revised: May 2, 2017





**LEGEND:**

COMFORT CATEGORIES:

- 1 - 7 mph
- 8 - 11 mph
- > 11 mph


SENSOR LOCATION:

- Grade Level
- Podium Level

MITIGATION:

- Existing Trees
- Proposed Coniferous Trees

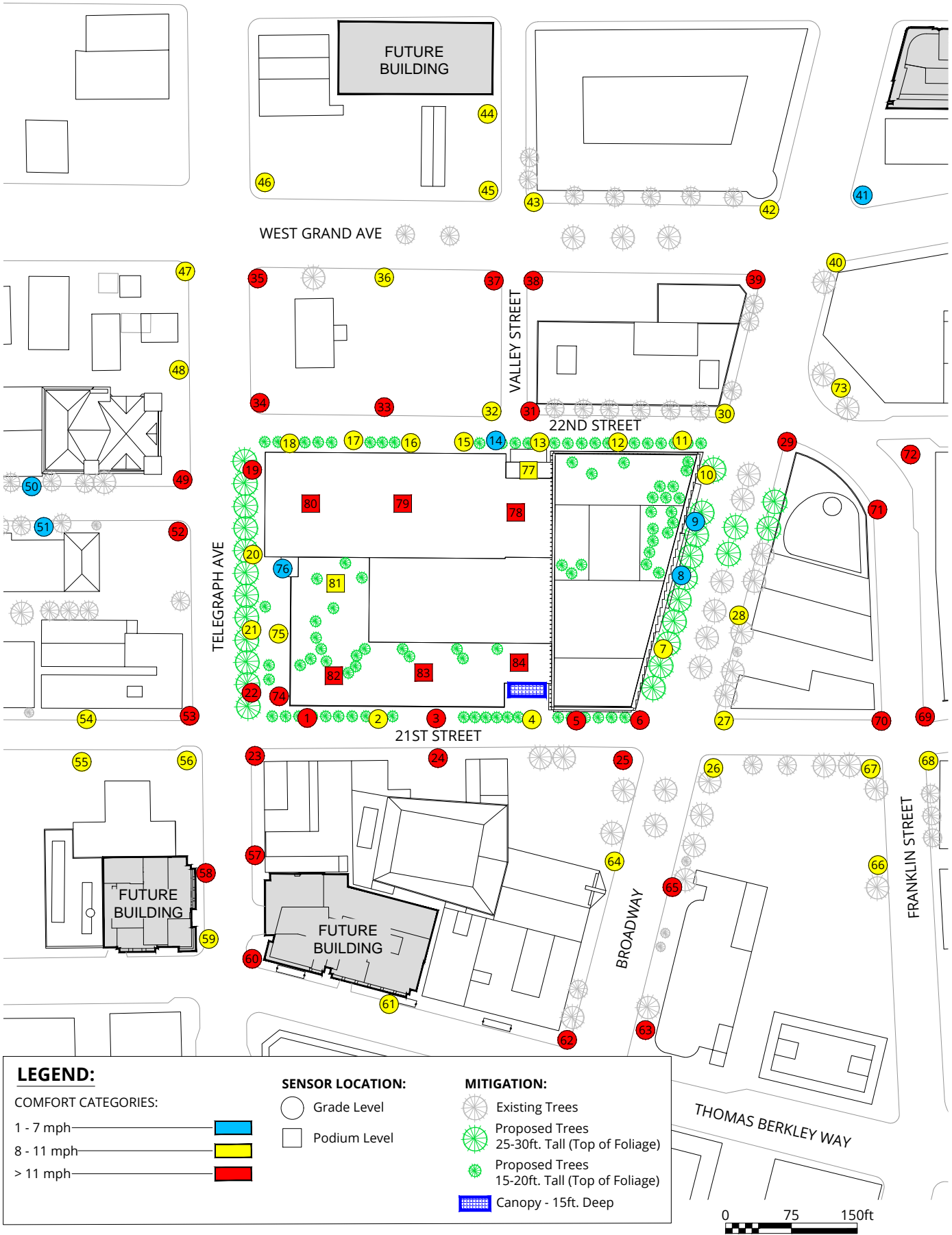
**Pedestrian Wind Comfort Conditions**  
 Maximum Office Development Scenario +  
 Cumulative + Landscaping  
 Annual (January to December)  
 2100 Telegraph Avenue - Oakland, CA

True North  
  
 Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: ARM             | Figure: 4h |
| Approx. Scale: 1"=150'    |            |
| Date Revised: May 2, 2017 |            |







**LEGEND:**

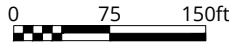
COMFORT CATEGORIES:  
 1 - 7 mph ———— ■  
 8 - 11 mph ———— ■  
 > 11 mph ———— ■

**SENSOR LOCATION:**

○ Grade Level  
 □ Podium Level

**MITIGATION:**

○ Existing Trees  
 ○ Proposed Trees 25-30ft. Tall (Top of Foliage)  
 ○ Proposed Trees 15-20ft. Tall (Top of Foliage)  
 ■ Canopy - 15ft. Deep



**Pedestrian Wind Comfort Conditions**  
 All Office Final Development Plan + Cumulative  
 Annual (January to December)

2100 Telegraph Avenue - Oakland, CA



Project #1601334

|                           |            |
|---------------------------|------------|
| Drawn by: DBB             | Figure: 4i |
| Approx. Scale: 1"=150'    |            |
| Date Revised: Nov 9, 2017 |            |



# TABLES

**Table 1: Wind Hazard Results**

| Refs | a<br>Existing +<br>Landscaping |  |   | b<br>Residential/Office Mix<br>Final Development<br>Plan + Landscaping |  |   | c<br>Maximum Residential<br>Development<br>Scenario +<br>Landscaping |  |   | d<br>Maximum Office<br>Development Scenario<br>+ Landscaping |  |   | e<br>All Office Final<br>Development Plan +<br>Landscaping |  |   | f<br>Residential/Office Mix<br>Final Development<br>Plan + Cumulative +<br>Landscaping |  |   | g<br>Maximum Residential<br>Development Scenario<br>+ Cumulative +<br>Landscaping |  |   | h<br>Maximum Office<br>Development<br>Scenario + Cumulative<br>Landscaping |  |   | i<br>All Office Final<br>Development Plan +<br>Cumulative +<br>Landscaping |   |  |
|------|--------------------------------|--|---|--|--|---|--|--|---|--|--|---|--|--|---|--|--|---|---|--|---|--|--|---|--|---|--|
|      | Location<br>Number             | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds   | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  | Wind<br>Speed<br>Exceeded<br>1hr/year<br>(mph) | Hours/<br>Year<br>Wind<br>Speeds<br>Exceed<br>Hazard<br>Criterion | Exceeds  |   |  |
| 1    | 21                             | 0  |   | 35   | 0  |   | 17   | 0  |   | 23   | 0  |   | 28   | 0  |   | 34   | 0  |   | 24  | 0  |   | 25   | 0  |   | 27   | 0 |  |
| 2    | 19                             | 0  |   | 22   | 0  |   | 22   | 0  |   | 32   | 0  |   | 23   | 0  |   | 27   | 0  |   | 25  | 0  |   | 33   | 0  |   | 23   | 0 |  |
| 3    | 18                             | 0  |   | 21   | 0  |   | 20   | 0  |   | 25   | 0  |   | 27   | 0  |   | 24   | 0  |   | 19  | 0  |   | 28   | 0  |   | 27   | 0 |  |
| 4    | 19                             | 0  |   | 23   | 0  |   | 30   | 0  |   | 19   | 0  |   | 28   | 0  |   | 22   | 0  |   | 30  | 0  |   | 21   | 0  |   | 27   | 0 |  |
| 5    | 22                             | 0  |   | 24   | 0  |   | 24   | 0  |   | 23   | 0  |   | 32   | 0  |   | 23   | 0  |   | 21  | 0  |   | 24   | 0  |   | 30   | 0 |  |
| 6    | 20                             | 0  |   | 26   | 0  |   | 22   | 0  |   | 35   | 0  |   | 33   | 0  |   | 27   | 0  |   | 21  | 0  |   | 33   | 0  |   | 29   | 0 |  |
| 7    | 17                             | 0  |   | 23   | 0  |   | 20   | 0  |   | 30   | 0  |   | 22   | 0  |   | 28   | 0  |   | 21  | 0  |   | 28   | 0  |   | 19   | 0 |  |
| 8    | 16                             | 0  |   | 22   | 0  |   | 20   | 0  |   | 24   | 0  |   | 20   | 0  |   | 22   | 0  |   | 21  | 0  |   | 22   | 0  |   | 19   | 0 |  |
| 9    | 16                             | 0  |   | 25   | 0  |   | 27   | 0  |   | 29   | 0  |   | 20   | 0  |   | 24   | 0  |   | 28  | 0  |   | 33   | 0  |   | 19   | 0 |  |
| 10   | 20                             | 0  |   | 19   | 0  |   | 25   | 0  |   | 26   | 0  |   | 26   | 0  |   | 20   | 0  |   | 21  | 0  |   | 29   | 0  |   | 25   | 0 |  |
| 11   | 21                             | 0  |   | 28   | 0  |   | 23   | 0  |   | 32   | 0  |   | 33   | 0  |   | 25   | 0  |   | 22  | 0  |   | 32   | 0  |   | 32   | 0 |  |
| 12   | 19                             | 0  |   | 17   | 0  |   | 20   | 0  |   | 23   | 0  |   | 30   | 0  |   | 23   | 0  |   | 22  | 0  |   | 29   | 0  |   | 28   | 0 |  |
| 13   | 26                             | 0  |   | 22   | 0  |   | 28   | 0  |   | 29   | 0  |   | 24   | 0  |   | 20   | 0  |   | 27  | 0  |   | 29   | 0  |   | 23   | 0 |  |
| 14   | 22                             | 0  |   | 23   | 0  |   | 27   | 0  |   | 21   | 0  |   | 16   | 0  |   | 20   | 0  |   | 23  | 0  |   | 20   | 0  |   | 16   | 0 |  |
| 15   | 19                             | 0  |   | 19   | 0  |   | 25   | 0  |   | 24   | 0  |   | 19   | 0  |   | 18   | 0  |   | 25  | 0  |   | 25   | 0  |   | 18   | 0 |  |
| 16   | 20                             | 0  |   | 19   | 0  |   | 22   | 0  |   | 26   | 0  |   | 25   | 0  |   | 18   | 0  |   | 23  | 0  |   | 27   | 0  |   | 24   | 0 |  |
| 17   | 20                             | 0  |   | 21   | 0  |   | 29   | 0  |   | 26   | 0  |   | 21   | 0  |   | 20   | 0  |   | 25  | 0  |   | 26   | 0  |   | 21   | 0 |  |
| 18   | 22                             | 0  |   | 30   | 0  |   | 21   | 0  |   | 25   | 0  |   | 26   | 0  |   | 27   | 0  |   | 21  | 0  |   | 24   | 0  |   | 25   | 0 |  |
| 19   | 23                             | 0  |   | 32   | 0  |   | 27   | 0  |   | 32   | 0  |   | 29   | 0  |   | 32   | 0  |   | 29  | 0  |   | 32   | 0  |   | 27   | 0 |  |
| 20   | 21                             | 0  |   | 24   | 0  |   | 21   | 0  |   | 30   | 0  |   | 25   | 0  |   | 24   | 0  |   | 20  | 0  |   | 29   | 0  |   | 24   | 0 |  |
| 21   | 25                             | 0  |   | 31   | 0  |   | 23   | 0  |   | 22   | 0  |   | 33   | 0  |   | 27   | 0  |   | 24  | 0  |   | 22   | 0  |   | 29   | 0 |  |
| 22   | 23                             | 0  |   | 31   | 0  |   | 30   | 0  |   | 35   | 0  |   | 30   | 0  |   | 30   | 0  |   | 27  | 0  |   | 33   | 0  |   | 29   | 0 |  |
| 23   | 25                             | 0  |   | 34   | 0  |   | 24   | 0  |   | 35   | 0  |   | 30   | 0  |   | 29   | 0  |   | 25  | 0  |   | 35   | 0  |   | 28   | 0 |  |
| 24   | 24                             | 0  |   | 26   | 0  |   | 28   | 0  |   | 30   | 0  |   | 28   | 0  |   | 26   | 0  |   | 27  | 0  |   | 30   | 0  |   | 28   | 0 |  |
| 25   | 18                             | 0  |   | 29   | 0  |   | 26   | 0  |   | 33   | 0  |   | 32   | 0  |   | 29   | 0  |   | 24  | 0  |   | 31   | 0  |   | 30   | 0 |  |
| 26   | 22                             | 0  |   | 30   | 0  |   | 24   | 0  |   | 37   | 1  | e   | 32   | 0  |   | 26   | 0  |   | 24  | 0  |   | 33   | 0  |   | 29   | 0 |  |
| 27   | 25                             | 0  |   | 27   | 0  |   | 20   | 0  |   | 32   | 0  |   | 29   | 0  |   | 24   | 0  |   | 20  | 0  |   | 29   | 0  |   | 27   | 0 |  |
| 28   | 15                             | 0  |   | 34   | 0  |   | 35   | 0  |   | 46   | 10   | e   | 32   | 0  |   | 34   | 0  |   | 35  | 0  |   | 42   | 7  | e   | 32   | 0 |  |
| 29   | 25                             | 0  |   | 27   | 0  |   | 24   | 0  |   | 32   | 0  |   | 32   | 0  |   | 27   | 0  |   | 27  | 0  |   | 33   | 0  |   | 33   | 0 |  |
| 30   | 26                             | 0  |   | 30   | 0  |   | 30   | 0  |   | 32   | 0  |   | 33   | 0  |   | 31   | 0  |   | 31  | 0  |   | 31   | 0  |   | 33   | 0 |  |
| 31   | 29                             | 0  |   | 25   | 0  |   | 28   | 0  |   | 32   | 0  |   | 32   | 0  |   | 24   | 0  |   | 28  | 0  |   | 32   | 0  |   | 31   | 0 |  |

**Table 1:** Wind Hazard Results

|    |    |   |  |    |   |  |    |   |  |    |   |   |    |   |   |    |   |  |    |   |   |    |   |   |    |   |   |
|----|----|---|--|----|---|--|----|---|--|----|---|---|----|---|---|----|---|--|----|---|---|----|---|---|----|---|---|
| 32 | 20 | 0 |  | 26 | 0 |  | 27 | 0 |  | 28 | 0 |   | 27 | 0 |   | 25 | 0 |  | 26 | 0 |   | 26 | 0 |   | 26 | 0 |   |
| 33 | 22 | 0 |  | 31 | 0 |  | 35 | 0 |  | 41 | 6 | e | 35 | 0 |   | 31 | 0 |  | 38 | 2 | e | 42 | 7 | e | 32 | 0 |   |
| 34 | 24 | 0 |  | 34 | 0 |  | 35 | 0 |  | 35 | 0 |   | 35 | 0 |   | 34 | 0 |  | 33 | 0 |   | 35 | 0 |   | 35 | 0 |   |
| 35 | 23 | 0 |  | 25 | 0 |  | 28 | 0 |  | 33 | 0 |   | 31 | 0 |   | 25 | 0 |  | 29 | 0 |   | 34 | 0 |   | 29 | 0 |   |
| 36 | 23 | 0 |  | 26 | 0 |  | 25 | 0 |  | 35 | 0 |   | 33 | 0 |   | 28 | 0 |  | 27 | 0 |   | 35 | 0 |   | 33 | 0 |   |
| 37 | 28 | 0 |  | 29 | 0 |  | 28 | 0 |  | 38 | 3 | e | 33 | 0 |   | 26 | 0 |  | 26 | 0 |   | 35 | 0 |   | 33 | 0 |   |
| 38 | 31 | 0 |  | 32 | 0 |  | 31 | 0 |  | 38 | 2 | e | 34 | 0 |   | 30 | 0 |  | 29 | 0 |   | 35 | 0 |   | 33 | 0 |   |
| 39 | 26 | 0 |  | 30 | 0 |  | 29 | 0 |  | 33 | 0 |   | 35 | 0 |   | 30 | 0 |  | 28 | 0 |   | 34 | 0 |   | 33 | 0 |   |
| 40 | 23 | 0 |  | 28 | 0 |  | 25 | 0 |  | 32 | 0 |   | 30 | 0 |   | 23 | 0 |  | 23 | 0 |   | 25 | 0 |   | 25 | 0 |   |
| 41 | 23 | 0 |  | 22 | 0 |  | 22 | 0 |  | 25 | 0 |   | 33 | 0 |   | 22 | 0 |  | 22 | 0 |   | 25 | 0 |   | 33 | 0 |   |
| 42 | 25 | 0 |  | 32 | 0 |  | 31 | 0 |  | 35 | 0 |   | 32 | 0 |   | 28 | 0 |  | 27 | 0 |   | 31 | 0 |   | 30 | 0 |   |
| 43 | 26 | 0 |  | 31 | 0 |  | 31 | 0 |  | 34 | 0 |   | 30 | 0 |   | 22 | 0 |  | 23 | 0 |   | 30 | 0 |   | 27 | 0 |   |
| 44 | 29 | 0 |  | 28 | 0 |  | 28 | 0 |  | 27 | 0 |   | 25 | 0 |   | 21 | 0 |  | 22 | 0 |   | 22 | 0 |   | 22 | 0 |   |
| 45 | 28 | 0 |  | 31 | 0 |  | 31 | 0 |  | 35 | 0 |   | 31 | 0 |   | 25 | 0 |  | 27 | 0 |   | 33 | 0 |   | 29 | 0 |   |
| 46 | 23 | 0 |  | 22 | 0 |  | 24 | 0 |  | 30 | 0 |   | 24 | 0 |   | 22 | 0 |  | 23 | 0 |   | 30 | 0 |   | 23 | 0 |   |
| 47 | 21 | 0 |  | 21 | 0 |  | 20 | 0 |  | 31 | 0 |   | 27 | 0 |   | 24 | 0 |  | 23 | 0 |   | 33 | 0 |   | 30 | 0 |   |
| 48 | 26 | 0 |  | 27 | 0 |  | 27 | 0 |  | 33 | 0 |   | 32 | 0 |   | 27 | 0 |  | 26 | 0 |   | 32 | 0 |   | 31 | 0 |   |
| 49 | 23 | 0 |  | 30 | 0 |  | 31 | 0 |  | 35 | 0 |   | 36 | 0 |   | 30 | 0 |  | 31 | 0 |   | 35 | 0 |   | 34 | 0 |   |
| 50 | 18 | 0 |  | 17 | 0 |  | 18 | 0 |  | 22 | 0 |   | 17 | 0 |   | 15 | 0 |  | 16 | 0 |   | 20 | 0 |   | 15 | 0 |   |
| 51 | 14 | 0 |  | 15 | 0 |  | 16 | 0 |  | 20 | 0 |   | 17 | 0 |   | 15 | 0 |  | 17 | 0 |   | 20 | 0 |   | 17 | 0 |   |
| 52 | 23 | 0 |  | 35 | 0 |  | 35 | 0 |  | 42 | 5 | e | 42 | 5 | e | 35 | 0 |  | 35 | 0 |   | 41 | 4 | e | 41 | 3 | e |
| 53 | 28 | 0 |  | 26 | 0 |  | 26 | 0 |  | 30 | 0 |   | 25 | 0 |   | 24 | 0 |  | 24 | 0 |   | 31 | 0 |   | 24 | 0 |   |
| 54 | 20 | 0 |  | 24 | 0 |  | 23 | 0 |  | 35 | 0 |   | 24 | 0 |   | 25 | 0 |  | 24 | 0 |   | 31 | 0 |   | 23 | 0 |   |
| 55 | 26 | 0 |  | 23 | 0 |  | 23 | 0 |  | 29 | 0 |   | 23 | 0 |   | 22 | 0 |  | 22 | 0 |   | 28 | 0 |   | 22 | 0 |   |
| 56 | 26 | 0 |  | 23 | 0 |  | 25 | 0 |  | 35 | 0 |   | 25 | 0 |   | 24 | 0 |  | 24 | 0 |   | 34 | 0 |   | 24 | 0 |   |
| 57 | 24 | 0 |  | 22 | 0 |  | 25 | 0 |  | 30 | 0 |   | 23 | 0 |   | 28 | 0 |  | 28 | 0 |   | 28 | 0 |   | 26 | 0 |   |
| 58 | 22 | 0 |  | 18 | 0 |  | 20 | 0 |  | 26 | 0 |   | 20 | 0 |   | 25 | 0 |  | 26 | 0 |   | 30 | 0 |   | 29 | 0 |   |
| 59 | 22 | 0 |  | 21 | 0 |  | 19 | 0 |  | 19 | 0 |   | 20 | 0 |   | 24 | 0 |  | 24 | 0 |   | 21 | 0 |   | 24 | 0 |   |
| 60 | 28 | 0 |  | 26 | 0 |  | 25 | 0 |  | 26 | 0 |   | 26 | 0 |   | 24 | 0 |  | 25 | 0 |   | 27 | 0 |   | 25 | 0 |   |
| 61 | 25 | 0 |  | 24 | 0 |  | 25 | 0 |  | 31 | 0 |   | 26 | 0 |   | 23 | 0 |  | 23 | 0 |   | 24 | 0 |   | 22 | 0 |   |
| 62 | 23 | 0 |  | 24 | 0 |  | 25 | 0 |  | 27 | 0 |   | 26 | 0 |   | 27 | 0 |  | 27 | 0 |   | 28 | 0 |   | 27 | 0 |   |
| 63 | 22 | 0 |  | 27 | 0 |  | 24 | 0 |  | 26 | 0 |   | 28 | 0 |   | 28 | 0 |  | 28 | 0 |   | 29 | 0 |   | 30 | 0 |   |
| 64 | 25 | 0 |  | 22 | 0 |  | 21 | 0 |  | 30 | 0 |   | 26 | 0 |   | 20 | 0 |  | 20 | 0 |   | 26 | 0 |   | 24 | 0 |   |
| 65 | 22 | 0 |  | 22 | 0 |  | 23 | 0 |  | 30 | 0 |   | 27 | 0 |   | 23 | 0 |  | 25 | 0 |   | 28 | 0 |   | 27 | 0 |   |
| 66 | 20 | 0 |  | 29 | 0 |  | 27 | 0 |  | 35 | 0 |   | 32 | 0 |   | 28 | 0 |  | 26 | 0 |   | 34 | 0 |   | 32 | 0 |   |
| 67 | 29 | 0 |  | 30 | 0 |  | 27 | 0 |  | 33 | 0 |   | 30 | 0 |   | 31 | 0 |  | 27 | 0 |   | 35 | 0 |   | 31 | 0 |   |
| 68 | 32 | 0 |  | 29 | 0 |  | 28 | 0 |  | 31 | 0 |   | 30 | 0 |   | 28 | 0 |  | 27 | 0 |   | 32 | 0 |   | 30 | 0 |   |
| 69 | 35 | 0 |  | 34 | 0 |  | 34 | 0 |  | 35 | 0 |   | 35 | 0 |   | 33 | 0 |  | 34 | 0 |   | 37 | 2 | e | 34 | 0 |   |
| 70 | 33 | 0 |  | 33 | 0 |  | 31 | 0 |  | 35 | 0 |   | 34 | 0 |   | 33 | 0 |  | 33 | 0 |   | 35 | 0 |   | 32 | 0 |   |
| 71 | 28 | 0 |  | 29 | 0 |  | 29 | 0 |  | 33 | 0 |   | 31 | 0 |   | 27 | 0 |  | 28 | 0 |   | 33 | 0 |   | 28 | 0 |   |



**Table 1:** Wind Hazard Results

|  |               |              |                |               |              |                |               |               |                |               |                |                |               |              |                |               |              |                |               |               |                |               |                |                |               |              |                |    |   |  |
|--|---------------|--------------|----------------|---------------|--------------|----------------|---------------|---------------|----------------|---------------|----------------|----------------|---------------|--------------|----------------|---------------|--------------|----------------|---------------|---------------|----------------|---------------|----------------|----------------|---------------|--------------|----------------|----|---|--|
| 72   | 31            | 0            |                | 28            | 0            |                | 28            | 0             |                | 29            | 0              |                | 31            | 0            |                | 23            | 0            |                | 24            | 0             |                | 28            | 0              |                | 26            | 0            |                |    |   |  |
| 73   | 24            | 0            |                | 26            | 0            |                | 26            | 0             |                | 28            | 0              |                | 23            | 0            |                | 24            | 0            |                | 24            | 0             |                | 26            | 0              |                | 23            | 0            |                |    |   |  |
| 74   |               |              |                | 33            | 0            |                |               |               |                |               |                |                | 30            | 0            |                | 31            | 0            |                |               |               |                |               |                |                | 28            | 0            |                | 28 | 0 |  |
| 75   |               |              |                | 22            | 0            |                |               |               |                |               |                |                | 21            | 0            |                | 21            | 0            |                |               |               |                |               |                |                | 21            | 0            |                | 21 | 0 |  |
| 76   | 16            | 0            |                | 17            | 0            |                |               |               |                |               |                |                | 23            | 0            |                |               |              |                |               |               |                |               |                |                | 22            | 0            |                | 22 | 0 |  |
| <b>Average speed, Total hours, Total</b>       | <b>23 mph</b> | <b>0 hrs</b> | <b>0 of 74</b> | <b>26 mph</b> | <b>0 hrs</b> | <b>0 of 76</b> | <b>26 mph</b> | <b>0 hrs</b>  | <b>0 of 73</b> | <b>30 mph</b> | <b>27 hrs</b>  | <b>6 of 73</b> | <b>28 mph</b> | <b>5 hrs</b> | <b>1 of 76</b> | <b>25 mph</b> | <b>0 hrs</b> | <b>0 of 76</b> | <b>25 mph</b> | <b>2 hrs</b>  | <b>1 of 73</b> | <b>30 mph</b> | <b>20 hrs</b>  | <b>4 of 73</b> | <b>27 mph</b> | <b>3 hrs</b> | <b>1 of 76</b> |    |   |  |
| <b>Above Grade</b>                             |               |              |                |               |              |                |               |               |                |               |                |                |               |              |                |               |              |                |               |               |                |               |                |                |               |              |                |    |   |  |
| 77   |               |              |                | 26            | 0            |                | 34            | 0             |                | 51            | 21             | e              | 26            | 0            |                | 25            | 0            |                | 34            | 0             |                | 51            | 20             | e              | 24            | 0            |                |    |   |  |
| 78   |               |              |                | 35            | 0            |                | 35            | 0             |                | 47            | 22             | e              | 39            | 2            | e              | 35            | 0            |                | 33            | 0             |                | 47            | 20             | e              | 38            | 2            | e              |    |   |  |
| 79   |               |              |                | 25            | 0            |                | 35            | 0             |                | 40            | 3              | e              | 39            | 2            | e              | 25            | 0            |                | 35            | 0             |                | 39            | 2              | e              | 38            | 2            | e              |    |   |  |
| 80   |               |              |                | 29            | 0            |                | 38            | 2             | e              | 43            | 9              | e              | 39            | 3            | e              | 28            | 0            |                | 39            | 2             | e              | 43            | 6              | e              | 37            | 2            | e              |    |   |  |
| 81   |               |              |                | 38            | 2            | e              | 42            | 5             | e              | 44            | 10             | e              | 30            | 0            |                | 35            | 0            |                | 42            | 5             | e              | 44            | 12             | e              | 25            | 0            |                |    |   |  |
| 82   |               |              |                | 32            | 0            |                | 35            | 0             |                | 51            | 15             | e              | 35            | 0            |                | 32            | 0            |                | 37            | 1             | e              | 51            | 16             | e              | 33            | 0            |                |    |   |  |
| 83   |               |              |                | 28            | 0            |                | 30            | 0             |                | 54            | 55             | e              | 36            | 0            |                | 28            | 0            |                | 33            | 0             |                | 56            | 63             | e              | 34            | 0            |                |    |   |  |
| 84   |               |              |                | 27            | 0            |                | 35            | 0             |                |               |                |                |               |              |                | 26            | 0            |                | 35            | 0             |                |               |                |                |               |              |                | 28 | 0 |  |
| 85   |               |              |                | 22            | 0            |                | 40            | 4             | e              |               |                |                |               |              |                | 21            | 0            |                | 39            | 3             | e              |               |                |                |               |              |                |    |   |  |
| 86   |               |              |                |               |              |                | 34            | 0             |                |               |                |                |               |              |                |               |              |                | 34            | 0             |                |               |                |                |               |              |                |    |   |  |
| 87   |               |              |                |               |              |                | 35            | 0             |                |               |                |                |               |              |                |               |              |                | 35            | 0             |                |               |                |                |               |              |                |    |   |  |
| 88   |               |              |                |               |              |                | 37            | 1             | e              |               |                |                |               |              |                |               |              |                | 37            | 1             | e              |               |                |                |               |              |                |    |   |  |
| 89   |               |              |                |               |              |                | 35            | 0             |                |               |                |                |               |              |                |               |              |                | 33            | 0             |                |               |                |                |               |              |                |    |   |  |
| 90   |               |              |                |               |              |                | 35            | 0             |                |               |                |                |               |              |                |               |              |                | 34            | 0             |                |               |                |                |               |              |                |    |   |  |
| 91   |               |              |                |               |              |                | 26            | 0             |                |               |                |                |               |              |                |               |              |                | 24            | 0             |                |               |                |                |               |              |                |    |   |  |
| 92   |               |              |                |               |              |                | 42            | 6             | e              |               |                |                |               |              |                |               |              |                | 43            | 7             | e              |               |                |                |               |              |                |    |   |  |
| 93   |               |              |                |               |              |                | 47            | 20            | e              |               |                |                |               |              |                |               |              |                | 47            | 27            | e              |               |                |                |               |              |                |    |   |  |
| 94   |               |              |                |               |              |                | 46            | 10            | e              |               |                |                |               |              |                |               |              |                | 48            | 12            | e              |               |                |                |               |              |                |    |   |  |
| 95   |               |              |                |               |              |                | 44            | 11            | e              |               |                |                |               |              |                |               |              |                | 44            | 11            | e              |               |                |                |               |              |                |    |   |  |
| <b>Average speed, Total hours, Total excee</b> |               |              |                | <b>30 mph</b> | <b>2 hrs</b> | <b>1 of 9</b>  | <b>38 mph</b> | <b>37 hrs</b> | <b>4 of 19</b> | <b>47 mph</b> | <b>135 hrs</b> | <b>7 of 7</b>  | <b>34 mph</b> | <b>7 hrs</b> | <b>3 of 7</b>  | <b>30 mph</b> | <b>0 hrs</b> | <b>0 of 9</b>  | <b>38 mph</b> | <b>47 hrs</b> | <b>4 of 19</b> | <b>47 mph</b> | <b>139 hrs</b> | <b>7 of 7</b>  | <b>32 mph</b> | <b>6 hrs</b> | <b>3 of 7</b>  |    |   |  |

**Table 2: Wind Comfort Results**

| Refs | a<br>Existing +<br>Landscaping |  |  | b<br>Residential/Office Mix<br>Final Development<br>Plan + Landscaping |  |  | c<br>Maximum Residential<br>Development<br>Scenario +<br>Landscaping |  |  | d<br>Maximum Office<br>Development Scenario<br>+ Landscaping |  |  | e<br>All Office Final<br>Development Plan +<br>Landscaping |  |  | f<br>Residential/Office Mix<br>Final Development<br>Plan + Cumulative +<br>Landscaping |  |  | g<br>Maximum Residential<br>Development Scenario<br>+ Cumulative +<br>Landscaping |  |  | h<br>Maximum Office<br>Development<br>Scenario + Cumulative<br>Landscaping |  |  | i<br>All Office Final<br>Development Plan +<br>Cumulative +<br>Landscaping |  |  |
|------|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|
|      | Location<br>Number             | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds   | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph | Exceeds  | Wind<br>Speed<br>Exceeded<br>10% of<br>the Time<br>(mph) | Percent<br>of Time<br>Wind<br>Speed<br>Exceeds<br>11 mph |
| 1    | 10                             | 5  |  | 19   | 39   | e  | 8  | 1  |  | 9  | 3  |  | 13   | 18   | e  | 16   | 32   | e  | 10  | 8  |  | 11   | 10   |  | 13   | 18   | e  |
| 2    | 9                              | 3  |  | 10   | 5  |  | 10   | 8  |  | 15   | 23   | e  | 11   | 10   |  | 12   | 12   | e  | 11  | 10   |  | 15   | 24   | e  | 10   | 8  |  |
| 3    | 8                              | 2  |  | 10   | 6  |  | 9  | 3  |  | 11   | 10   |  | 12   | 15   | e  | 11   | 10   |  | 9   | 4  |  | 13   | 17   | e  | 12   | 13   | e  |
| 4    | 9                              | 2  |  | 8  | 2  |  | 10   | 6  |  | 8  | 1  |  | 11   | 10   |  | 7  | 2  |  | 9   | 5  |  | 7  | 1  |  | 10   | 7  |  |
| 5    | 10                             | 6  |  | 8  | 3  |  | 10   | 6  |  | 9  | 3  |  | 13   | 18   | e  | 9  | 4  |  | 9   | 4  |  | 9  | 4  |  | 12   | 14   | e  |
| 6    | 5                              | 1  |  | 9  | 4  |  | 10   | 6  |  | 12   | 14   | e  | 14   | 26   | e  | 11   | 10   |  | 9   | 4  |  | 13   | 18   | e  | 13   | 23   | e  |
| 7    | 7                              | 1  |  | 7  | 2  |  | 7  | 1  |  | 8  | 4  |  | 8  | 3  |  | 9  | 4  |  | 7   | 1  |  | 9  | 4  |  | 8  | 1  |  |
| 8    | 5                              | 1  |  | 7  | 2  |  | 7  | 1  |  | 8  | 2  |  | 7  | 2  |  | 7  | 2  |  | 7   | 1  |  | 7  | 1  |  | 7  | 1  |  |
| 9    | 5                              | 0  |  | 8  | 3  |  | 7  | 2  |  | 8  | 2  |  | 7  | 1  |  | 7  | 2  |  | 7   | 2  |  | 8  | 2  |  | 7  | 1  |  |
| 10   | 5                              | 1  |  | 8  | 2  |  | 8  | 2  |  | 9  | 5  |  | 10   | 6  |  | 8  | 2  |  | 7   | 2  |  | 9  | 4  |  | 8  | 3  |  |
| 11   | 7                              | 2  |  | 11   | 10   |  | 8  | 2  |  | 9  | 4  |  | 11   | 10   |  | 10   | 7  |  | 8   | 2  |  | 10   | 6  |  | 10   | 8  |  |
| 12   | 8                              | 1  |  | 6  | 1  |  | 7  | 1  |  | 8  | 2  |  | 8  | 3  |  | 10   | 7  |  | 9   | 4  |  | 10   | 6  |  | 8  | 3  |  |
| 13   | 12                             | 12   | e  | 10   | 5  |  | 13   | 17   | e  | 13   | 20   | e  | 11   | 10   |  | 9  | 4  |  | 12  | 15   | e  | 14   | 21   | e  | 11   | 10   |  |
| 14   | 8                              | 2  |  | 9  | 3  |  | 11   | 10   |  | 11   | 10   |  | 7  | 1  |  | 8  | 2  |  | 10  | 5  |  | 10   | 6  |  | 7  | 0  |  |
| 15   | 7                              | 1  |  | 8  | 2  |  | 11   | 10   |  | 11   | 10   |  | 9  | 3  |  | 8  | 1  |  | 11  | 10   |  | 11   | 10   |  | 9  | 2  |  |
| 16   | 8                              | 2  |  | 9  | 2  |  | 11   | 10   |  | 12   | 13   | e  | 12   | 12   | e  | 8  | 1  |  | 11  | 10   |  | 12   | 14   | e  | 11   | 10   |  |
| 17   | 9                              | 3  |  | 9  | 4  |  | 13   | 19   | e  | 12   | 12   | e  | 9  | 3  |  | 8  | 2  |  | 11  | 10   |  | 11   | 10   |  | 9  | 2  |  |
| 18   | 9                              | 3  |  | 14   | 23   | e  | 8  | 2  |  | 8  | 2  |  | 10   | 6  |  | 12   | 16   | e  | 8   | 2  |  | 7  | 1  |  | 9  | 4  |  |
| 19   | 8                              | 2  |  | 14   | 26   | e  | 13   | 18   | e  | 15   | 27   | e  | 13   | 18   | e  | 14   | 27   | e  | 13  | 18   | e  | 15   | 30   | e  | 12   | 16   | e  |
| 20   | 8                              | 2  |  | 12   | 14   | e  | 8  | 2  |  | 10   | 5  |  | 12   | 15   | e  | 11   | 10   |  | 9   | 3  |  | 10   | 6  |  | 11   | 10   |  |
| 21   | 11                             | 10   |  | 12   | 17   | e  | 11   | 10   |  | 9  | 4  |  | 11   | 10   |  | 12   | 17   | e  | 11  | 10   |  | 9  | 4  |  | 10   | 7  |  |
| 22   | 9                              | 4  |  | 15   | 29   | e  | 13   | 20   | e  | 16   | 31   | e  | 14   | 23   | e  | 14   | 27   | e  | 12  | 14   | e  | 15   | 26   | e  | 14   | 23   | e  |
| 23   | 10                             | 5  |  | 16   | 29   | e  | 9  | 4  |  | 13   | 18   | e  | 13   | 22   | e  | 13   | 19   | e  | 10  | 6  |  | 13   | 20   | e  | 13   | 17   | e  |
| 24   | 10                             | 6  |  | 12   | 14   | e  | 11   | 10   |  | 14   | 23   | e  | 13   | 17   | e  | 12   | 12   | e  | 11  | 10   |  | 14   | 23   | e  | 13   | 16   | e  |
| 25   | 8                              | 2  |  | 10   | 7  |  | 10   | 7  |  | 13   | 18   | e  | 13   | 20   | e  | 9  | 6  |  | 10  | 5  |  | 11   | 10   |  | 12   | 14   | e  |
| 26   | 9                              | 4  |  | 9  | 5  |  | 11   | 10   |  | 11   | 10   |  | 12   | 14   | e  | 9  | 3  |  | 10  | 8  |  | 11   | 10   |  | 11   | 10   |  |
| 27   | 6                              | 2  |  | 9  | 4  |  | 10   | 5  |  | 12   | 13   | e  | 10   | 7  |  | 8  | 2  |  | 9   | 4  |  | 10   | 8  |  | 10   | 6  |  |
| 28   | 7                              | 0  |  | 9  | 4  |  | 10   | 8  |  | 12   | 13   | e  | 10   | 8  |  | 8  | 3  |  | 10  | 7  |  | 12   | 12   | e  | 10   | 7  |  |
| 29   | 9                              | 5  |  | 11   | 10   |  | 10   | 7  |  | 13   | 21   | e  | 12   | 14   | e  | 11   | 10   |  | 11  | 10   |  | 13   | 18   | e  | 12   | 12   | e  |
| 30   | 9                              | 4  |  | 11   | 10   |  | 9  | 5  |  | 11   | 10   |  | 10   | 8  |  | 11   | 10   |  | 9   | 5  |  | 11   | 10   |  | 10   | 5  |  |
| 31   | 13                             | 17   | e  | 11   | 10   |  | 13   | 20   | e  | 15   | 29   | e  | 15   | 31   | e  | 11   | 10   |  | 13  | 19   | e  | 15   | 27   | e  | 15   | 29   | e  |

Table 2: Wind Comfort Results

|    |    |    |   |    |    |   |    |    |   |    |    |   |    |    |   |    |    |   |    |    |   |    |    |   |    |    |   |
|----|----|----|---|----|----|---|----|----|---|----|----|---|----|----|---|----|----|---|----|----|---|----|----|---|----|----|---|
| 32 | 9  | 3  |   | 10 | 8  |   | 11 | 10 |   | 12 | 15 | e | 12 | 13 | e | 9  | 4  |   | 10 | 7  |   | 11 | 10 |   | 11 | 10 |   |
| 33 | 9  | 3  |   | 14 | 21 | e | 17 | 31 | e | 18 | 35 | e | 15 | 26 | e | 13 | 16 | e | 17 | 31 | e | 18 | 33 | e | 14 | 24 | e |
| 34 | 10 | 6  |   | 12 | 15 | e | 14 | 24 | e | 15 | 32 | e | 16 | 36 | e | 11 | 10 |   | 13 | 20 | e | 15 | 30 | e | 15 | 33 | e |
| 35 | 10 | 5  |   | 12 | 12 | e | 13 | 16 | e | 15 | 27 | e | 14 | 24 | e | 12 | 13 | e | 13 | 20 | e | 16 | 30 | e | 13 | 21 | e |
| 36 | 10 | 5  |   | 10 | 7  |   | 11 | 10 |   | 13 | 20 | e | 12 | 13 | e | 10 | 8  |   | 12 | 12 | e | 14 | 23 | e | 11 | 10 |   |
| 37 | 9  | 4  |   | 11 | 10 |   | 11 | 10 |   | 14 | 24 | e | 13 | 20 | e | 10 | 7  |   | 12 | 12 | e | 14 | 25 | e | 13 | 18 | e |
| 38 | 12 | 17 | e | 14 | 23 | e | 14 | 25 | e | 16 | 36 | e | 15 | 29 | e | 13 | 17 | e | 13 | 22 | e | 16 | 34 | e | 14 | 25 | e |
| 39 | 8  | 4  |   | 11 | 10 |   | 11 | 10 |   | 13 | 20 | e | 13 | 18 | e | 11 | 10 |   | 12 | 12 | e | 13 | 20 | e | 12 | 15 | e |
| 40 | 8  | 3  |   | 9  | 4  |   | 9  | 5  |   | 11 | 10 |   | 10 | 7  |   | 9  | 4  |   | 9  | 4  |   | 10 | 6  |   | 11 | 10 |   |
| 41 | 10 | 8  |   | 10 | 6  |   | 10 | 8  |   | 11 | 10 |   | 3  | 0  |   | 10 | 6  |   | 10 | 8  |   | 11 | 10 |   | 3  | 0  |   |
| 42 | 10 | 5  |   | 9  | 5  |   | 9  | 4  |   | 9  | 5  |   | 9  | 6  |   | 7  | 3  |   | 8  | 3  |   | 8  | 5  |   | 9  | 5  |   |
| 43 | 12 | 16 | e | 14 | 23 | e | 14 | 24 | e | 14 | 28 | e | 13 | 20 | e | 10 | 5  |   | 10 | 6  |   | 12 | 12 | e | 11 | 10 |   |
| 44 | 13 | 22 | e | 13 | 18 | e | 13 | 19 | e | 13 | 20 | e | 12 | 15 | e | 10 | 6  |   | 10 | 7  |   | 10 | 7  |   | 11 | 10 |   |
| 45 | 13 | 16 | e | 14 | 21 | e | 14 | 20 | e | 14 | 23 | e | 13 | 18 | e | 9  | 4  |   | 10 | 6  |   | 12 | 13 | e | 10 | 5  |   |
| 46 | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 12 | 16 | e | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 13 | 18 | e | 10 | 7  |   |
| 47 | 10 | 5  |   | 9  | 3  |   | 9  | 3  |   | 10 | 6  |   | 9  | 4  |   | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 9  | 3  |   |
| 48 | 9  | 5  |   | 10 | 7  |   | 10 | 8  |   | 13 | 20 | e | 12 | 12 | e | 10 | 7  |   | 11 | 10 |   | 13 | 20 | e | 11 | 10 |   |
| 49 | 9  | 3  |   | 13 | 22 | e | 14 | 26 | e | 16 | 34 | e | 16 | 35 | e | 12 | 16 | e | 14 | 24 | e | 15 | 30 | e | 15 | 30 | e |
| 50 | 9  | 2  |   | 7  | 0  |   | 7  | 1  |   | 9  | 4  |   | 8  | 1  |   | 6  | 0  |   | 6  | 0  |   | 9  | 3  |   | 7  | 0  |   |
| 51 | 6  | 0  |   | 5  | 0  |   | 5  | 0  |   | 6  | 1  |   | 6  | 0  |   | 5  | 0  |   | 5  | 0  |   | 6  | 1  |   | 5  | 0  |   |
| 52 | 9  | 3  |   | 16 | 35 | e | 15 | 34 | e | 17 | 41 | e | 18 | 41 | e | 15 | 29 | e | 15 | 32 | e | 17 | 38 | e | 16 | 36 | e |
| 53 | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 14 | 24 | e | 12 | 13 | e | 10 | 8  |   | 11 | 10 |   | 14 | 25 | e | 12 | 12 | e |
| 54 | 8  | 2  |   | 8  | 3  |   | 8  | 2  |   | 8  | 5  |   | 8  | 3  |   | 9  | 5  |   | 9  | 5  |   | 9  | 5  |   | 8  | 3  |   |
| 55 | 11 | 10 |   | 10 | 7  |   | 10 | 7  |   | 10 | 8  |   | 10 | 8  |   | 10 | 7  |   | 10 | 6  |   | 10 | 6  |   | 10 | 6  |   |
| 56 | 10 | 7  |   | 11 | 10 |   | 11 | 10 |   | 15 | 26 | e | 12 | 13 | e | 10 | 8  |   | 11 | 10 |   | 14 | 26 | e | 11 | 10 |   |
| 57 | 9  | 3  |   | 9  | 4  |   | 10 | 6  |   | 13 | 19 | e | 10 | 7  |   | 12 | 16 | e | 12 | 14 | e | 13 | 21 | e | 12 | 13 | e |
| 58 | 8  | 2  |   | 8  | 2  |   | 8  | 2  |   | 11 | 10 |   | 9  | 4  |   | 12 | 13 | e | 12 | 13 | e | 14 | 23 | e | 13 | 18 | e |
| 59 | 10 | 4  |   | 9  | 4  |   | 8  | 1  |   | 8  | 2  |   | 8  | 1  |   | 9  | 5  |   | 9  | 4  |   | 9  | 3  |   | 8  | 3  |   |
| 60 | 13 | 18 | e | 12 | 12 | e | 12 | 12 | e | 12 | 16 | e | 12 | 14 | e | 11 | 10 |   | 11 | 10 | e | 13 | 17 | e | 12 | 13 | e |
| 61 | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 13 | 16 | e | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 10 | 7  |   |
| 62 | 11 | 10 |   | 11 | 10 |   | 12 | 13 | e | 12 | 15 | e | 12 | 14 | e | 12 | 16 | e | 12 | 16 | e | 12 | 17 | e | 12 | 16 | e |
| 63 | 10 | 8  |   | 12 | 13 | e | 11 | 10 |   | 12 | 13 | e | 12 | 16 | e | 13 | 17 | e | 13 | 17 | e | 13 | 18 | e | 14 | 23 | e |
| 64 | 10 | 5  |   | 9  | 3  |   | 9  | 3  |   | 10 | 8  |   | 10 | 7  |   | 9  | 3  |   | 9  | 3  |   | 10 | 6  |   | 10 | 5  |   |
| 65 | 11 | 10 |   | 10 | 8  |   | 11 | 10 |   | 12 | 15 | e | 13 | 17 | e | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 12 | 16 | e |
| 66 | 9  | 3  |   | 12 | 12 | e | 12 | 12 | e | 13 | 16 | e | 13 | 19 | e | 10 | 7  |   | 10 | 6  |   | 11 | 10 |   | 11 | 10 |   |
| 67 | 11 | 10 |   | 12 | 12 | e | 11 | 10 |   | 13 | 18 | e | 12 | 15 | e | 10 | 8  |   | 10 | 7  |   | 12 | 14 | e | 11 | 10 |   |
| 68 | 15 | 30 | e | 11 | 10 |   | 11 | 10 |   | 12 | 11 | e | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   | 11 | 10 |   |
| 69 | 16 | 31 | e | 14 | 21 | e | 14 | 21 | e | 15 | 27 | e | 14 | 23 | e | 12 | 14 | e | 13 | 16 | e | 14 | 21 | e | 14 | 20 | e |
| 70 | 14 | 24 | e | 12 | 14 | e | 12 | 13 | e | 14 | 21 | e | 12 | 14 | e | 12 | 14 | e | 12 | 13 | e | 14 | 20 | e | 12 | 16 | e |
| 71 | 11 | 10 |   | 12 | 16 | e | 13 | 17 | e | 14 | 23 | e | 14 | 22 | e | 12 | 14 | e | 12 | 14 | e | 14 | 21 | e | 12 | 14 | e |

**Table 2:** Wind Comfort Results

|  |               |            |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |
|--|---------------|------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|---------------|-------------|-----------------|
| 72   | 13            | 21         | e               | 13            | 20          | e               | 13            | 19          | e               | 14            | 24          | e               | 14            | 27          | e               | 11            | 10          |                 | 11            | 10          |                 | 12            | 16          | e               | 13            | 17          | e               |
| 73   | 12            | 13         | e               | 12            | 13          | e               | 12            | 13          | e               | 13            | 20          | e               | 11            | 10          | e               | 11            | 10          |                 | 12            | 12          | e               | 13            | 18          | e               | 11            | 10          | e               |
| 74   |               |            |                 | 15            | 30          | e               |               |             |                 |               |             |                 | 13            | 19          | e               | 14            | 25          | e               |               |             |                 |               |             |                 | 13            | 17          | e               |
| 75   |               |            |                 | 11            | 10          |                 |               |             |                 |               |             |                 | 10            | 5           |                 | 10            | 7           |                 |               |             |                 |               |             |                 | 10            | 4           |                 |
| 76   | 7             | 1          |                 | 7             | 1           |                 |               |             |                 |               |             |                 | 8             | 2           |                 | 6             | 0           |                 |               |             |                 |               |             |                 | 7             | 1           |                 |
| <b>Average speed, Average % exceedance</b> | <b>10 mph</b> | <b>7 %</b> | <b>12 of 74</b> | <b>11 mph</b> | <b>11 %</b> | <b>27 of 76</b> | <b>11 mph</b> | <b>10 %</b> | <b>22 of 73</b> | <b>12 mph</b> | <b>15 %</b> | <b>45 of 73</b> | <b>11 mph</b> | <b>10 %</b> | <b>41 of 76</b> | <b>10 mph</b> | <b>9 %</b>  | <b>21 of 76</b> | <b>11 mph</b> | <b>9 %</b>  | <b>22 of 73</b> | <b>12 mph</b> | <b>14 %</b> | <b>38 of 73</b> | <b>10 mph</b> | <b>9 %</b>  | <b>31 of 76</b> |
| <b>Above Grade</b>                         |               |            |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |               |             |                 |
| 77   |               |            |                 | 12            | 14          | e               | 15            | 26          | e               | 19            | 44          | e               | 12            | 13          | e               | 12            | 13          | e               | 15            | 27          | e               | 19            | 43          | e               | 11            | 10          |                 |
| 78   |               |            |                 | 16            | 35          | e               | 16            | 25          | e               | 20            | 48          | e               | 19            | 42          | e               | 16            | 35          | e               | 14            | 22          | e               | 20            | 48          | e               | 18            | 42          | e               |
| 79   |               |            |                 | 9             | 6           |                 | 17            | 34          | e               | 18            | 40          | e               | 15            | 30          | e               | 9             | 5           |                 | 17            | 35          | e               | 18            | 40          | e               | 14            | 26          | e               |
| 80   |               |            |                 | 13            | 15          | e               | 15            | 25          | e               | 19            | 45          | e               | 18            | 41          | e               | 12            | 14          | e               | 14            | 22          | e               | 19            | 44          | e               | 17            | 38          | e               |
| 81   |               |            |                 | 14            | 26          | e               | 14            | 25          | e               | 18            | 38          | e               | 12            | 15          | e               | 14            | 23          | e               | 14            | 26          | e               | 18            | 37          | e               | 11            | 10          |                 |
| 82   |               |            |                 | 15            | 31          | e               | 17            | 34          | e               | 15            | 30          | e               | 12            | 16          | e               | 15            | 27          | e               | 17            | 35          | e               | 15            | 26          | e               | 12            | 15          | e               |
| 83   |               |            |                 | 13            | 17          | e               | 10            | 7           |                 | 23            | 50          | e               | 16            | 30          | e               | 12            | 15          | e               | 10            | 8           |                 | 23            | 51          | e               | 15            | 26          | e               |
| 84   |               |            |                 | 13            | 18          | e               | 15            | 31          | e               |               |             |                 |               |             |                 | 26            | 17          | e               | 16            | 34          | e               |               |             |                 | 13            | 20          | e               |
| 85   |               |            |                 | 10            | 5           |                 | 19            | 47          | e               |               |             |                 |               |             |                 | 21            | 5           |                 | 19            | 45          | e               |               |             |                 |               |             |                 |
| 86   |               |            |                 |               |             |                 | 13            | 15          | e               |               |             |                 |               |             |                 |               |             |                 | 13            | 16          | e               |               |             |                 |               |             |                 |
| 87   |               |            |                 |               |             |                 | 12            | 14          | e               |               |             |                 |               |             |                 |               |             |                 | 12            | 13          | e               |               |             |                 |               |             |                 |
| 88   |               |            |                 |               |             |                 | 17            | 40          | e               |               |             |                 |               |             |                 |               |             |                 | 17            | 39          | e               |               |             |                 |               |             |                 |
| 89   |               |            |                 |               |             |                 | 11            | 10          |                 |               |             |                 |               |             |                 |               |             |                 | 12            | 13          | e               |               |             |                 |               |             |                 |
| 90   |               |            |                 |               |             |                 | 11            | 10          |                 |               |             |                 |               |             |                 |               |             |                 | 11            | 10          |                 |               |             |                 |               |             |                 |
| 91   |               |            |                 |               |             |                 | 12            | 12          | e               |               |             |                 |               |             |                 |               |             |                 | 11            | 10          |                 |               |             |                 |               |             |                 |
| 92   |               |            |                 |               |             |                 | 16            | 30          | e               |               |             |                 |               |             |                 |               |             |                 | 15            | 29          | e               |               |             |                 |               |             |                 |
| 93   |               |            |                 |               |             |                 | 17            | 30          | e               |               |             |                 |               |             |                 |               |             |                 | 16            | 29          | e               |               |             |                 |               |             |                 |
| 94   |               |            |                 |               |             |                 | 19            | 37          | e               |               |             |                 |               |             |                 |               |             |                 | 19            | 37          | e               |               |             |                 |               |             |                 |
| 95   |               |            |                 |               |             |                 | 15            | 24          | e               |               |             |                 |               |             |                 |               |             |                 | 15            | 24          | e               |               |             |                 |               |             |                 |
| <b>Average speed, Average % exceedance</b> |               |            |                 | <b>13 mph</b> | <b>20 %</b> | <b>7 of 9</b>   | <b>15 mph</b> | <b>25 %</b> | <b>15 of 19</b> | <b>19 mph</b> | <b>42 %</b> | <b>7 of 7</b>   | <b>14 mph</b> | <b>26 %</b> | <b>7 of 7</b>   | <b>12 mph</b> | <b>17 %</b> | <b>7 of 9</b>   | <b>15 mph</b> | <b>25 %</b> | <b>16 of 19</b> | <b>19 mph</b> | <b>41 %</b> | <b>7 of 7</b>   | <b>13 mph</b> | <b>23 %</b> | <b>7 of 7</b>   |





## **APPENDIX F: EBMUD Water Supply Assessment**



March 14, 2017

Peterson Vollman, Planner IV  
City of Oakland  
Bureau of Planning  
250 Frank H. Ogawa Plaza, Suite 2114  
Oakland, CA 94612-2032

Re: Water Supply Assessment – Eastline Project – 2100 Telegraph

Dear Mr. Vollman:

This letter is in response to your request dated January 5, 2017 for water agency consultation (Enclosure 1) concerning the Water Supply Assessment (WSA) for the Eastline Project – 2100 Telegraph (Project), located in the City of Oakland (City), which is within East Bay Municipal Utility District's (EBMUD's) Ultimate Service Boundary. EBMUD appreciates the opportunity to provide this response.

Pursuant to Sections 10910-10915 of the California Water Code, the Project meets the threshold requirement for an assessment of water supply availability based on the amount of water this Project would require, which is greater than the amount of water required by a 500-dwelling-unit project.

Please note that this WSA addresses the issue of water supply only and is not a guarantee of service, and future water service is subject to the rates and regulations in effect at that time.

### **Project Demand**

The water demand for the Project is accounted for in EBMUD's water demand projections, as published in EBMUD's Urban Water Management Plan (UWMP) 2015 (Enclosure 2). EBMUD's water demand projections account for anticipated future water demands within EBMUD's service boundaries and for variations in demand-attributed changes in development patterns. The historical water use in the Project area is approximately 1,730 gallons per day (gpd). The projected water demand at Project build-out is estimated to be approximately 162,000 gpd for the Mixed-Use Alternative, 265,000 gpd for the Maximum Office Alternative, and 273,000 gpd for the Maximum Residential Alternative.

EBMUD's demand projections indicate both densification and land use changes in a few existing land use classifications, including commercial and residential land use areas. These changes increase EBMUD's overall demand. EBMUD's UWMP 2015 projects water demands over time, accounting for estimated variations in demand usage less conservation and recycled supply



sources as noted in the UWMP 2015, Table 4-1, Mid-Cycle Demand Projections (Table 1). Typically, EBMUD prepares a full demand study every ten years; the most recent version, the 2040 Demand Study, was completed in 2009. For planning purposes, water demands are estimated in five-year increments, but it is recognized that actual incremental amounts may occur stepwise in shorter time increments. An increase in usage by one customer in a particular customer class does not require a strict gallon-for-gallon increase in conservation by other customers in that class as, in actuality, the amount of potable demand, conservation and recycled water use EBMUD-wide will vary somewhat. In 2014, EBMUD prepared the Mid-Cycle Demand Assessment (MCDA) in order to assess any significant effects on metered water consumption caused by the 2008-2010 drought and the economic downturn that affected growth in the Bay Area. As part of the MCDA, recently updated city and county general plans were reviewed for significant changes since the 2040 Demand Study was completed, and meetings were also held with representatives from the cities of Alameda, Oakland, Richmond, and San Ramon. The MCDA concluded that, while the cities and counties might reach their build-out goals later than originally anticipated, they would still reach these goals by 2040. Accordingly, the MCDA validated the 2040 Demand Study, as the demands are expected to gradually increase back to 2040 projected demand levels as development and water use return to pre-drought and pre-recession conditions. EBMUD plans to complete another full demand study in 2019 looking out at a long-term horizon of 2050. As part of the demand study, EBMUD will be reaching out to each city and county in the service area to ask about projected development and future land use changes. The study results will be incorporated into the UWMP 2020.

**Table 1**  
**Mid-Cycle Demand Projections (UWMP 2015, Table 4-1)**

| TABLE 4-1<br>AVERAGE ANNUAL DEMAND (MGD) | MID-CYCLE DEMAND PROJECTIONS |      |      |      |      |      |
|--|------------------------------|------|------|------|------|------|
|  | 2015                         | 2020 | 2025 | 2030 | 2035 | 2040 |
| PROJECTED TOTAL DEMAND                   | 232                          | 267  | 276  | 290  | 304  | 312  |
| CONSERVATION <sup>1</sup>                | -33                          | -39  | -44  | -51  | -57  | -62  |
| NON-POTABLE WATER <sup>1,2</sup>         | -9                           | -11  | -14  | -17  | -18  | -20  |
| PLANNING LEVEL OF DEMAND                 | 190                          | 217  | 218  | 222  | 229  | 230  |

<sup>1</sup> See Chapters 6 and 7 for more discussion of water recycling and conservation, respectively.  
<sup>2</sup> Non-potable water includes recycled water and raw water projects.

### Project Area

The Project area is bounded to the north by 22<sup>nd</sup> Street, to the east by Broadway, to the west by Telegraph Avenue, and to the south by 21<sup>st</sup> Street. The Project includes three development alternatives that vary with respect to the proposed components and Project footprint. The City requests that the WSA analyze all three alternatives, a Mixed-Use Alternative, a Maximum Office Alternative, and a Maximum Residential Alternative, which is the alternative that has the greatest projected demand. The Mixed-Use Alternative proposes up to 395 dwelling units, 18,500 square feet of community space, 880,550 square feet of office space, and 85,000 square feet of retail space. The Maximum Office Alternative proposes up to 2,689,000 square feet of office space and 87,000 square feet of retail space. The Maximum Residential Alternative proposes up to 1,556 dwelling units, 99,220 square feet of retail space, and 37,150 square feet of community space.

### **EBMUD Water Demand Projections**

Since the 1970s, water demand within EBMUD's service area has ranged from 200 to 220 million gallons per day (mgd) in non-drought years. Section 4.1 of the UWMP 2015 outlines past and current EBMUD water demand, including Figure 4.1 which shows historic water use (including metered and unmetered demands) within EBMUD's service area along with the number of customer accounts. The 2040 water demand forecast of 312 mgd for EBMUD's service area can be reduced to 230 mgd with the successful implementation of water recycling and conservation programs, as outlined in the UWMP 2015. Current demand is lower than estimated in the MCDA as a result of the recent multi-year drought. This is because the planning level of demand may differ from the actual demand in any given year due to water use reductions that typically occur during droughts. After droughts, a rebound effect is expected wherein demand rises back to projected levels. Thus, the MCDA still reflects a reasonable expectation for growth over the long term for demand in year 2040, as the demands are expected to gradually increase back to 2040 projected demand levels as development and water use return to pre-drought and pre-recession conditions. The proposed Project's future development and operations will not change EBMUD's 2040 demand projection.

### **EBMUD Water Supply, Water Rights and the UWMP 2015**

EBMUD has water right permits and licenses that allow for delivery of up to a maximum of 325 mgd from the Mokelumne River, subject to the availability of Mokelumne River runoff and the senior water rights of other users. EBMUD's position in the hierarchy of Mokelumne River water users is determined by a variety of agreements between Mokelumne River water right holders and the terms of the appropriative water right permits and licenses.

Conditions that could, depending on hydrology, restrict EBMUD's ability to receive its full entitlement include:

- Upstream water use by senior water right holders.
- Downstream water use by riparian and senior appropriators and other downstream obligations, including protection of public trust resources.
- Variability in precipitation and runoff.

During prolonged droughts, the Mokelumne River supply cannot meet EBMUD's projected customer demands. To address this, EBMUD has completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Facility, which are discussed below in the Supplemental Water Supply and Demand Management section of this assessment. EBMUD has obtained and continues to seek supplemental supplies.

The UWMP 2015, adopted on June 28, 2016 by EBMUD's Board of Directors under Resolution No. 34092-16, is a long-range planning document used to assess current and projected water usage, water supply planning, along with conservation and recycling efforts. EBMUD's water supply sources are discussed in Section 1.5.1 of the UWMP 2015. EBMUD's main water supply is the Mokelumne River, and EBMUD has rights to receive up to 325 mgd of water from this

source subject to the availability of runoff, senior water rights of other users, and downstream fishery flow requirements. EBMUD also has a Long-Term Renewal Contract (Contract No. 14-06-200-5183A-LTR1) with the U.S. Bureau of Reclamation to receive water from the Central Valley Project (CVP) through the Freeport Regional Water Project in years when EBMUD's water supplies are relatively low (for more details, see Section 3.3.2 of the UWMP 2015). During some dry years, EBMUD may purchase water transfers to help meet customer demands. Section 5.1 of the UWMP 2015 discusses EBMUD's water transfer program.

EBMUD maintains a biennial budget and five-year capital improvement program to optimize investments and maximize drinking water quality, and the reliability, safety, flexibility, and overall efficiency of the water supply system. EBMUD's most recently adopted budget, which includes capital expenditures for the delivery of water supplies to its customers, can be found at <http://www.ebmud.com/about-us/investors/budget-and-rates/>.

EBMUD complies with applicable local, state, and federal regulations in the operation of its water supply system. Figure 1-4 of the UWMP 2015 illustrates the numerous local, state, and federal agencies that may regulate EBMUD's facilities and operations.

A summary of EBMUD's demand and supply projections, in five-year increments, for a 25-year planning horizon is provided in UWMP 2015, Table 4-5, Preliminary EBMUD Baseline Supply and Demand Analysis (Table 2).

EBMUD's evaluation of water supply availability accounts for the diversions of both upstream and downstream water right holders and fishery releases on the Mokelumne River. Fishery releases are based on the requirements of a 1998 Joint Settlement Agreement (JSA) between EBMUD, United States (U.S.) Fish and Wildlife Service, and the California Department of Fish and Wildlife. The JSA requires EBMUD to make minimum flow releases from its reservoirs to the lower Mokelumne River to protect and enhance the fishery resources and ecosystem of the river. As this water is released downriver, it is, therefore, not available for use by EBMUD's customers.

**Table 2**  
**Preliminary EBMUD Baseline Supply and Demand Analysis (UWMP 2015, Table 4-5)**

| TABLE 4-5   |                                    | PRELIMINARY EBMUD BASELINE SUPPLY & DEMAND ANALYSIS |      |      |      |      |      |
|---|------------------------------------|---|------|------|------|------|------|
| SUPPLY AND DEMAND COMPARISON - NORMAL YEAR (MGD)    |                                    | 2015  | 2020 | 2025 | 2030 | 2035 | 2040 |
| MOKELUMNE SYSTEM                                    |                                    | >190  | >217 | >218 | >222 | >229 | >230 |
| DIFFERENCE  |                                    | 0   | 0    | 0    | 0    | 0    | 0    |
| DRY YEAR RESULTS FROM EBMUDSIM (MGD)                |                                    | 2015  | 2020 | 2025 | 2030 | 2035 | 2040 |
| SINGLE DRY YEAR OR FIRST YEAR OF MULTI-YEAR DROUGHT | MOKELUMNE SYSTEM                   | 145   | 169  | 170  | 173  | 179  | 179  |
|   | CVP SUPPLIES <sup>2</sup>          | 36  | 35   | 35   | 35   | 35   | 35   |
|   | BAYSIDE <sup>3</sup>               | 0   | 0    | 0    | 0    | 0    | 0    |
|   | PLANNING LEVEL DEMAND <sup>1</sup> | 190   | 217  | 218  | 222  | 229  | 230  |
|   | RATIONING <sup>4</sup>             | 5%  | 6%   | 6%   | 6%   | 7%   | 7%   |
|   | NEED FOR WATER (TAD) <sup>5</sup>  | 0   | 0    | 0    | 0    | 0    | 0    |
|   | SECOND YEAR                        | MOKELUMNE SYSTEM                                    | 81   | 103  | 103  | 107  | 112  |
|   | CVP SUPPLIES <sup>2</sup>          | 71  | 71   | 71   | 71   | 71   | 71   |
|   | BAYSIDE <sup>3</sup>               | 0   | 0    | 0    | 0    | 0    | 0    |
|   | PLANNING LEVEL DEMAND <sup>1</sup> | 190   | 217  | 218  | 222  | 229  | 230  |
|   | RATIONING <sup>4</sup>             | 20%   | 20%  | 20%  | 20%  | 20%  | 20%  |
|   | NEED FOR WATER (TAD) <sup>5</sup>  | 0   | 0    | 0    | 0    | 0    | 0    |
| THIRD YEAR  | MOKELUMNE SYSTEM                   | 111   | 132  | 132  | 125  | 120  | 104  |
|   | CVP SUPPLIES <sup>2</sup>          | 40  | 40   | 40   | 40   | 40   | 40   |
|   | BAYSIDE <sup>3</sup>               | 1   | 1    | 1    | 1    | 1    | 1    |
|   | PLANNING LEVEL DEMAND <sup>1</sup> | 190   | 217  | 218  | 222  | 229  | 230  |
|   | RATIONING <sup>4</sup>             | 20%   | 20%  | 20%  | 20%  | 20%  | 20%  |
|   | NEED FOR WATER (TAD) <sup>5</sup>  | 0   | 0    | 2    | 13   | 24   | 48   |

1. Planning Level of Demand accounts for projected savings from water recycling and conservation programs as discussed in Chapters 6 and 7 respectively. Customer demand values are based on the Mid Cycle Demand Assessment, October 2014.  
 2. Projected available CVP supplies are taken according to the Drought Management Program Guidelines discussed in Chapter 3.  
 3. For the purposes of this modeling effort, it is assumed that the Bayside Groundwater Project would be brought online in the third year of a drought.  
 4. Rationing reduction goals are determined according to projected system storage levels in the Drought Management Program Guidelines discussed in Chapter 3.  
 5. Need for Water includes unmet customer demand as well as shortages on the Lower Mokelumne River.

The available supply and demand shown in Table 2 was derived from EBMUD's baseline hydrologic model with the following assumptions:

- Customer demand values are based on the MCDA, and planning level demands account for projected savings from water recycling and conservation programs.
- EBMUD Drought Planning Sequence assumes water years 1976, 1977 and a modified 1978 hydrology.
- Total system storage is depleted by the end of the third year of the drought.
- EBMUD will implement its Drought Management Program (DMP) when necessary.



- The diversions by Amador and Calaveras Counties upstream of Pardee Reservoir will increase over time, eventually reaching the full extent of their senior rights.
- Releases are made to meet the requirements of senior downstream water right holders and fishery releases, as required by the JSA.
- EBMUD allocation of CVP supply is available the first year of a drought and subsequent drought years, according to the U.S. Bureau of Reclamation's Municipal and Industrial Shortage Policy.
- The Bayside Groundwater Project Phase 1 is available and brought online in the third year of a drought.

The UWMP 2015 concludes that EBMUD has, and will have, adequate water supplies to serve existing and projected demand within the Ultimate Service Boundary during normal and wet years but that deficits are projected for multi-year droughts. During multi-year droughts, EBMUD may require significant customer water use reductions and may also need to acquire supplemental supplies to meet customer demand.

As discussed under the DMP Guidelines section in Chapter 3 of the UWMP 2015, EBMUD's system storage generally allows EBMUD to continue serving its customers during dry-year events. EBMUD typically imposes water use restrictions based on the projected storage available at the end of September and, based on recent changes to its DMP Guidelines (summarized below), may also implement water use restrictions in response to a State of California mandate. By imposing water use restrictions in the first dry year of potential drought periods, EBMUD attempts to minimize water use restrictions in subsequent years if a drought persists. Throughout dry periods, EBMUD must continue to meet its current and subsequent-year fishery flow release requirements and obligations to downstream agencies.

The UWMP 2015 includes DMP Guidelines that establish the level of water use restrictions EBMUD may implement under varying conditions. Under the DMP Guidelines, water use restrictions may be determined based upon either projected end-of-September Total System Storage (TSS) or water use restriction mandates from the State Water Resources Control Board. When state-mandated water use restrictions exceed the reductions that would otherwise be called for based upon end-of-September TSS, EBMUD's water use reduction requirements may be guided by the applicable state mandates. Under either scenario, while EBMUD strives to keep water use reductions at or below 15 percent, if the drought is severe, mandatory water use reductions could exceed 15 percent.

Despite water savings from EBMUD's aggressive conservation and recycling programs and water use restrictions called for in the DMP Guidelines, supplemental supplies are still needed in significant, severe, and critical droughts. The proposed Project will be subject to the same drought restrictions that apply to all EBMUD customers. In addition, the proposed Project will be subject to EBMUD's regulations aimed at encouraging efficient water use, such as Sections 29 and 31 of EBMUD's Regulations Governing Water Service. Section 29, "Prohibiting Wasteful Use of Water," promotes efficient water use by EBMUD customers and includes additional restrictions on wasteful uses of potable water. Section 31, "Water Efficiency Requirements," identifies the types of water efficiency requirements (i.e., maximum flow rates for flow control devices) for water service.

## **Supplemental Water Supply and Demand Management**

The goals of meeting projected water needs and increased water reliability rely on supplemental supplies, improving reliability of existing water supply facilities, water conservation and recycled water programs.

By 2011; EBMUD completed construction of the Freeport Regional Water Facility and the Bayside Groundwater Project Phase 1 Facility to augment its water supply during drought periods. However, additional supplemental supplies beyond those provided through these facilities will still be needed, as noted above. Chapter 5 of the UWMP 2015 describes potential supplemental water supply projects that could be implemented to meet projected long-term water demands during multi-year drought periods.

The Freeport Regional Water Facility became operational in February 2011. EBMUD's ability to take delivery of CVP water through the Freeport facility is based on its Long Term Renewal Contract (LTRC) with the U.S. Bureau of Reclamation. The LTRC provides for up to 133,000 acre feet of CVP supply in a single dry year, not to exceed a total of 165,000 acre feet in three consecutive dry years. Under the LTRC, the CVP supply is available to EBMUD only in dry years when EBMUD's total stored water supply is forecast to be below 500,000 total acre feet on September 30 of each year.

EBMUD is developing the Bayside Groundwater Project in phases to provide a source of supplemental supply in dry years. Construction of the first phase was completed in 2010, allowing EBMUD to inject treated potable water into a deep aquifer in the South East Bay Plain Groundwater Basin for later extraction, treatment, and use during severe droughts. A permit from the Department of Public Health is required before the groundwater can be extracted and treated for municipal use. As described in Chapter 4 of the UWMP 2015, EBMUD's drought planning calls for using the Bayside Phase 1 Project during the third year of multi-year droughts to provide up to one mgd of water to meet customer demands. Additional information on the Bayside Project can be found in Section 5.3 and Appendix E of the UWMP 2015.

Chapter 5 of the UWMP 2015 also lists other potential supplemental water projects, including northern California water transfers, Bayside Groundwater Project Expansion, Expansion of Contra Costa Water District's Los Vaqueros Reservoir, and others that could be implemented to meet the projected long-term water supplemental need during multi-year drought periods. The UWMP 2015 identifies a broad mix of projects, with inherent scalability and the ability to adjust implementation schedules for particular components which will allow EBMUD to pursue the necessary supplemental supplies, while minimizing the risks associated with future uncertainties such as project implementation challenges and global climate change. The Environmental Impact Report that EBMUD certified for the Water Supply Management Program 2040 examined the impacts of pursuing these supplemental supply projects at a program level. Separate project-level environmental documentation will be prepared, as appropriate, for specific components as they are developed in further detail and implemented in accordance with EBMUD's water supply needs.

In addition to pursuing supplemental water supply sources, EBMUD also maximizes resources through continuous improvements in the delivery and transmission of available water supplies and investments in ensuring the safety of its existing water supply facilities. These programs, along with emergency interties and planned water recycling and conservation efforts, would ensure a reliable water supply to meet projected demands for current and future EBMUD customers within the current service area.

### **Water Conservation and Recycled Water Considerations**

The proposed Project presents opportunities to incorporate water conservation measures. Conditions of approval for the implementation of the proposed Project should require that the Project comply with the California Model Water Efficient Landscape Ordinance (Division 2, Title 23, California Code of Regulations, Chapter 2.7, Sections 490 through 495). EBMUD staff would appreciate the opportunity to meet with the City to discuss conservation measures. This meeting will explore early opportunities to expand water conservation via EBMUD's conservation programs and best management practices applicable to the Project.

Conservation strategies will be required to achieve water use reduction goals and restrictions, including compliance with Sections 29 and 31, described above, of EBMUD's Regulations Governing Water Service, and the Water Conservation Act of 2009. The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020.

The Project is not currently a candidate for recycled water. The Project has a minimal irrigation demand, and providing recycled water for toilet flushing in the structures would be prohibitively expensive. The Project area is not located within the vicinity of any existing or future planned EBMUD recycled water supply pipeline. Based on the location of the Project boundaries, EBMUD currently does not anticipate providing recycled water to any of the Project's components; however, the feasibility of providing recycled water to this area may change in the future. EBMUD encourages the City and its developers to continue to coordinate closely with EBMUD during the planning of the Project to further explore the options relating to recycled water.

The Project sponsor should contact Jennifer L. McGregor, Senior Civil Engineer, at (510) 287-1030 for further information.

Sincerely,



David J. Rehnstrom  
Manager of Water Distribution Planning Division

DJR:LAM:dks  
sb17\_033\_EastlineWSA\_Ltr to City

Peterson Vollman, Planner IV

March 14, 2017

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Enclosures: 1. Letter of Request for Water Supply Assessment dated January 5, 2017  
2. EBMUD Urban Water Management Plan 2015

cc: Board of Directors w/o Enclosure 2



CITY OF OAKLAND



DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA • SUITE 3315 • OAKLAND, CALIFORNIA 94612

Planning and Building Department  
Bureau of Planning

(510) 238-3941  
FAX (510) 238-6538  
TDD (510) 238-3254

January 5, 2017

Mr. David Rehnstrom  
East Bay Municipal Utility District  
Water Distribution Planning Division  
375 11<sup>th</sup> Street  
Oakland, CA 94607

Subject: Request for Water Supply Assessment for the proposed Eastline Project – 2100  
Telegraph Project, Oakland (ER16-011)

Dear Mr. Rehnstrom:

Per amendments to Section 10912 of the Water Code implemented by Senate Bill 610, the City of Oakland is submitting the request to the East Bay Municipal Utility District (EBMUD) to prepare a water supply assessment. The assessment is required in order to determine whether adequate water supply is available to meet the projected water demand of the proposed Eastline Project – 2100 Telegraph (the project) in the City of Oakland, which is located on an approximately 3.21-acre site in Downtown Oakland, within the block bound by Telegraph Avenue, 22<sup>nd</sup> Street, Broadway, and 21<sup>st</sup> Street.

There are currently five buildings on the site that are planned for demolition and redevelopment. The preferred development option is a residential and office mix with up to: 880,550 square feet of office, a 365,000 square-foot residential tower (up to 395 units), 85,000 square feet of ground floor retail, and 18,500 square feet of community space. This option is currently proposed as the Final Development Plan. However, to allow the flexibility for the development to be responsive to market demands and opportunities, a Planned Unit Development/preliminary development plan is proposed to provide a development framework that allows a range of development. Two primary project approvals will be considered in the EIR, as follows:

- **Planned Unit Development/Preliminary Development Plan (PUD/PDP).** A development framework to redevelop the site with an urban mixed-use project including a maximum residential scenario with 1,556 dwelling units and a maximum office scenario allowing a maximum development of up to 2.8 million square feet consistent with the site's maximum floor area ratio (FAR) of 20 and associated on-site public and private parking.
- **Final Development Plan (FDP).** A project-specific approval for the currently preferred mixed-use development option that includes up to: 880,550 square-feet of large floor-plate office,

365,000 square-foot residential tower (up to 395 units), 85,000 square feet of ground floor retail, 18,500 square-feet of community space, and four levels of public as well as private parking.

The City respectfully requests that EBMUD prepare a water supply assessment for the proposed project. The City acknowledges that this request for an assessment is required as part of the environmental documents for the project. We appreciate your prompt response to this request.

Please contact me if you need additional information. I can be reached at (510) 238-6167 or by email at [pvollmann@oaklandnet.com](mailto:pvollmann@oaklandnet.com).

Sincerely,

A handwritten signature in black ink, appearing to read 'Peterson Vollmann', with a long horizontal flourish extending to the right.

Peterson Vollmann  
Planner IV  
City of Oakland, Bureau of Planning

Attachment: Eastline Project - 2100 Telegraph Water Demand Calculations prepared by applicant, December 15, 2016.

**Eastline Project - 2100 Telegraph**

**Water Demand Calculations**

**December 15, 2016**

Estimates of annual water use for the Planned Unit Development/Preliminary Development Plan (PUD/PDP) and Final Development Plan (FDP) are shown below. These estimates were prepared by Arup on behalf of Gensler (the applicant's architect).

**Results Summary**

| <b>Development Scenario</b> | <b>Occupancy</b>             | <b>Estimated total annual water use, gal/yr</b> |
|-----------------------------|------------------------------|---|
| 1                           | Office / Res. Mixed use*     | 34,495,000                                      |
| 2                           | Max. Office over podium      | 66,525,000                                      |
| 3                           | Max. Residential over podium | 35,419,000                                      |

\*Final Development Plan





URBAN  
PLANNING  
PARTNERS  
INC.