

PARKWEST MEDICAL CENTER TRAFFIC STUDY



Submitted to: Parkwest Medical Center

Submitted by: CDM Smith Inc.



PARKWEST MEDICAL CENTER

KNOXVILLE, TENNESSEE

TRAFFIC IMPACT STUDY

Submitted to:

Parkwest Medical Center



September 2017

Submitted by:

**CDM Smith, Inc.
1100 Marion Street, Suite 300
Knoxville, Tennessee 37921**



September 7, 2017

Mr. Danny Edsell
Vice President, Covenant Health Properties
280 Fort Sanders West Boulevard Bldg. 4, Suite 214
Knoxville, TN 37922

RE: Parkwest Medical Center Traffic Study

Dear Mr. Edsell:

In accordance with our agreement of March 10, 2017, CDM Smith Inc. is pleased to submit our draft report entitled: ***Parkwest Medical Center Traffic Study***. Our study concluded that the new planned hospital expansion of 42 beds initially and 182 ultimately, and related changes to the Parkwest Medical Center Campus will generate approximately 310 new daily trips by 2019 with and approximately 1,330 new trips per day with the ultimate addition of 182 beds. Relocating Parkwest Boulevard can be accomplished without negatively impacting traffic access. In fact, there are many advantages to doing so including improved pedestrian safety and enhancing the campus environment. In addition to affirming the feasibility of relocating Parkwest Boulevard, the study also identified some off-site road improvements that would benefit the area.

We appreciate the opportunity to conduct this study and hope it is helpful as you plan for expansion of Parkwest Medical Center.

Sincerely,
CDM Smith

W. Hollis Loveday, P.E.
Principal
WHL/whl



Table of Contents

Introduction	1
Proposed Street Realignment.....	5
Purpose.....	5
Data Collection Activities	6
Existing Traffic Characteristics.....	7
Existing Traffic Control Devices and Intersection Geometry	7
Existing Peak Hour Volumes	7
Level of Service Definitions.....	13
Existing Level of Service	14
Sherrill Boulevard at Park 40 Boulevard/Christian Academy Boulevard --	14
Background Traffic	18
Background Traffic Capacity and LOS	30
Medical Center Expansion Trip Generation.....	36
Medical Center Expansion Trip Distribution	37
Medical Center Expansion Projected Traffic Conditions	40
Trip Assignment.....	40
Projected 2019 and 2030 Traffic.....	40
Capacity and Level of Service with Medical Center Expansion.....	51
Geometric Improvements	56
Parkwest Hospital Construction	64
Summary and Conclusion	68
Appendix	71

List of Figures

Figure 1. Parkwest Hospital Vicinity	2
Figure 2. Parkwest Hospital Study Area	3
Figure 3. Site Plan.....	4
Figure 4. 72-Hr Average Weekday Traffic (AWT).....	9
Figure 5. Existing Traffic Control and Intersection Geometry	10
Figure 6A. 2017 Existing AM and PM Peak Hour Volumes	11
Figure 6B. 2019 Existing Midday and School Peak-Hour Volumes.....	12
Figure 7A. 2017 Existing AM and PM Levels of Service	16
Figure 7B. 2017 Existing Midday and School Levels of Service	17
Figure 8A. 2019 AM and PM Background Growth Traffic	20
Figure 8B. 2019 Midday and School Background Growth Traffic.....	21
Figure 9A. 2030 AM and PM Background Growth Traffic	22
Figure 9B. 2030 Midday and School Background Growth Traffic.....	23
Figure 10A. AM and PM MOB Peak-Hour Trip Assignment	24
Figure 10B. Midday and School MOB Peak-Hour Trip Assignment.....	25
Figure 11A. 2019 Am and PM Total Background Traffic	26
Figure 11B. Midday and School Total Background Traffic	27
Figure 12A. 2030 AM and PM Total Background Traffic	28
Figure 12B. 2030 Midday and School Total Background Traffic.....	29
Figure 13A. 2019 Background AM and PM Levels of Service	32
Figure 13B. 2019 Background Midday and School Levels of Service.....	33
Figure 14A. 2030 Background AM and PM Levels of Service	34
Figure 14B. 2030 Background Midday and School Levels of Service.....	35
Figure 15A. AM and PM Peak-Hour Trip Distribution.....	38
Figure 15B. Midday and School Peak-Hour Trip Distribution	39
Figure 16A. 2019 AM and PM Peak-Hour Trip Assignment.....	41
Figure 16B. 2019 Midday and School Peak-Hour Trip Assignment	42
Figure 17A. 2030 AM and PM Peak-Hour Trip Assignment.....	43

Figure 17B. 2030 Midday and School Peak-Hour Trip Assignment	44
Figure 18A. 2019 AM and PM Total Projected Traffic	45
Figure 18B. 2019 Midday and School Projected Total Traffic	46
Figure 19A. 2030 AM and PM Projected Total Traffic	47
Figure 19B. 2030 Midday and School Projected Total Traffic	48
Figure 20A. 2019 Projected Average Weekday Traffic	49
Figure 20B. 2030 Projected Average Weekday Traffic	50
Figure 21A. 2019 AM and PM Peak-Hour Levels of Service.....	52
Figure 21B. 2019 Midday and School Peak-Hour Levels of Service	53
Figure 22A. 2030 AM and PM Peak-Hour Levels of Service.....	54
Figure 22B. 2030 Midday and School Peak-Hour Levels of Service	55
Figure 23A. 2019 AM and PM Peak-Hour Levels of Service with Improvements	58
Figure 23B. 2019 Midday and School Peak-Hour Levels of Service with Improvements	59
Figure 24A. 2030 AM and PM Peak-Hour Levels of Service with Improvements	60
Figure 24B. 2030 Midday and School Peak-Hour Levels of Service with Improvements	61
Figure 25. Temporary Parkwest Boulevard Relocation	65
Figure 26. Parkwest Boulevard Through Traffic	67

List of Tables

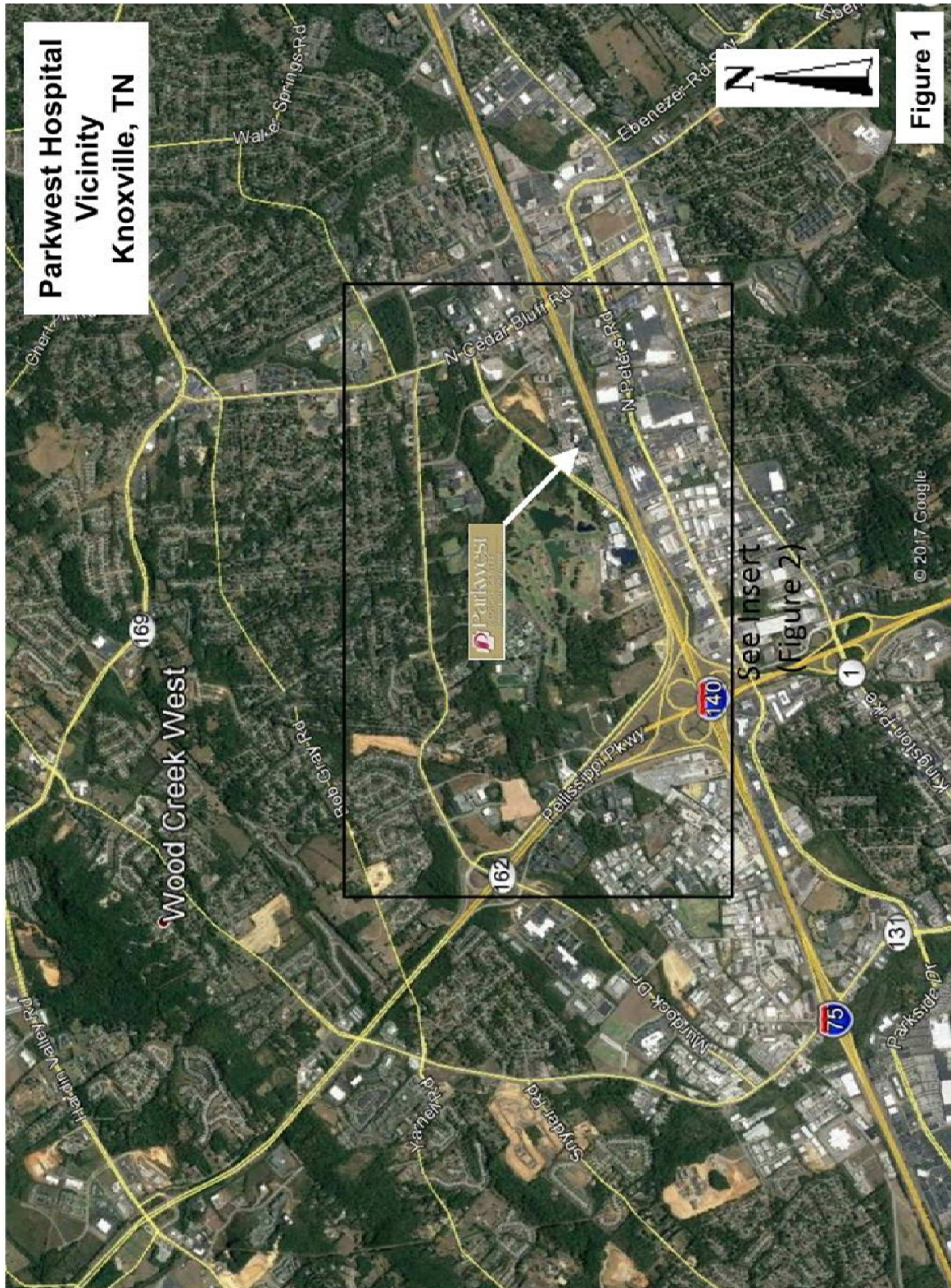
Table 1: Level of Service Criteria	13
Table 2: Medical Office Development Trip Generation	19
Table 3: Trip Generation.....	36
Table 4: Capacity and Levels of Service Summary.....	62

Introduction

Parkwest Medical Center’s mission is “We serve the community by improving the quality of life through better health.” To achieve this goal, Parkwest Medical Center has vastly expanded its services to meet the growing needs of the region. It began with a staff of 155 employees and 137 physicians in the early 1970s and grew to nearly 1,000 employees and more than 400 physicians by the end of the 1980s. In March 2005 Parkwest opened its six-story Riverstone Tower and today is West Knoxville’s largest medical center with 307 licensed beds. **Figure 1** depicts the Parkwest Medical Center site and its vicinity in relationship to the major west Knoxville road network. **Figure 2** further illustrates the Parkwest Hospital vicinity and identifies the study area. The study area is bounded to the north and south by Dutchtown Road and Interstate 40/75, Cedar Bluff Road to the east, and Sherrill Boulevard to the west. The study includes the Interstate 40/75 interchange to the south on Cedar Bluff Road.

To continue to meet the health care needs of the Knox County region, Parkwest Medical Center plans to expand its facility by adding a Bed Tower. The new Bed Tower would expand the existing facility by 182 beds at buildout with an initial 42 beds within the next few years. Preliminary plans call for new parking to be provided via two potential structures, one on the existing visitor/patient lot and one on an existing employee lot.

The expansion calls for new construction on a portion of Parkwest Boulevard in front of the existing medical center. Therefore, Parkwest Medical Center proposes to realign a section of Parkwest Boulevard and relocate its intersection with Sherrill Boulevard to the northeast. The realignment will turn Parkwest Boulevard 90-degrees north to intersect Sherrill Boulevard. **Figure 3** illustrates the site plan and the proposed realignment of Parkwest Boulevard.



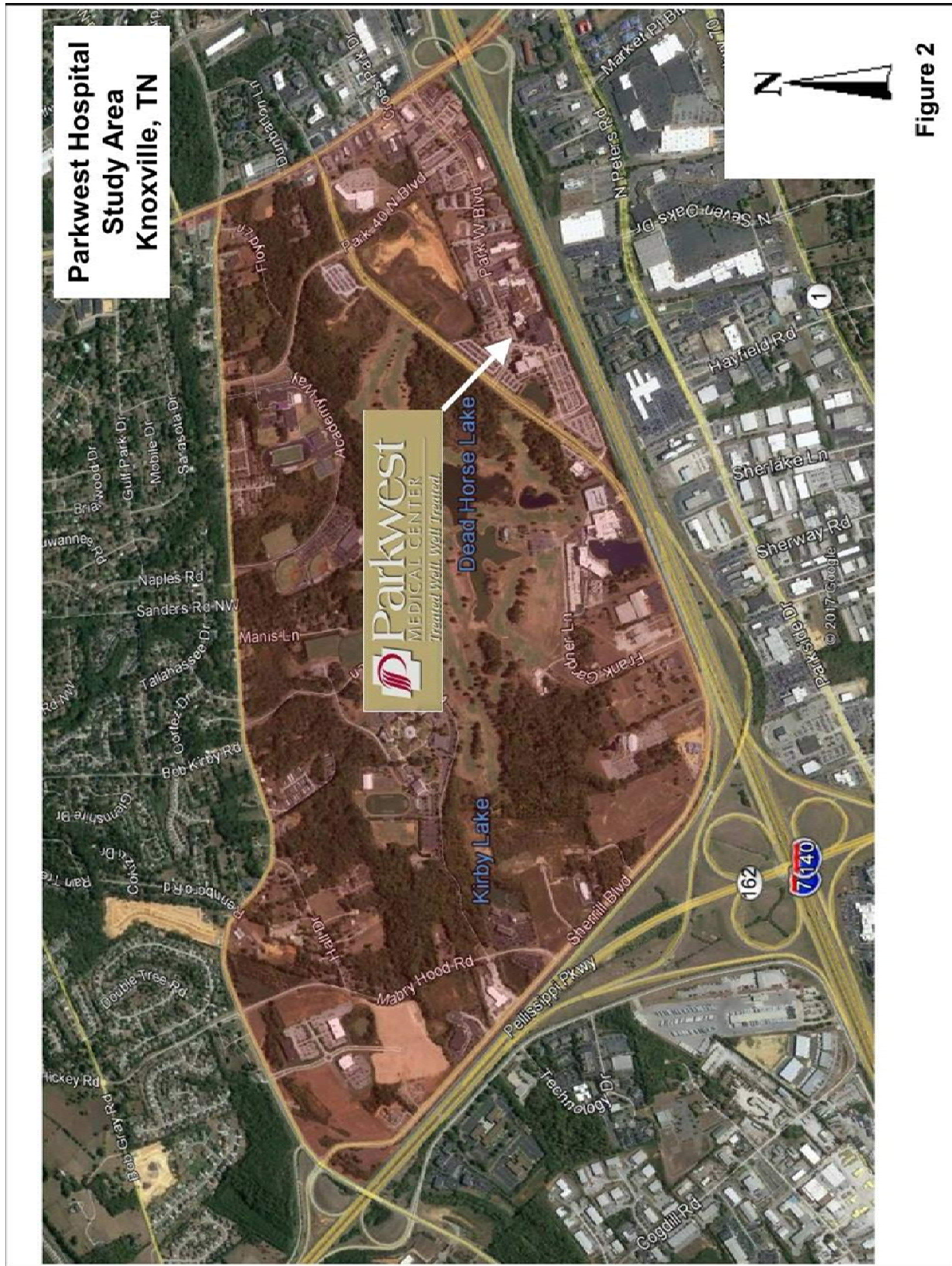


Figure 2

SITE PLAN
Parkwest Hospital



Figure 3

Proposed Street Realignment

As shown in **Figure 3**, the proposed realignment would move the intersection of Parkwest Boulevard and Sherrill Boulevard from its current location to one approximately 700 feet northeast. Parkwest Medical Center proposes to build on the section of Parkwest Boulevard immediately in front of the hospital's main entrance. The proposed expansion and road realignment would create a campus type atmosphere, which would be more pedestrian-oriented and safer. The existing section of Parkwest Boulevard from Sherrill Boulevard to its connection with the medical center service road would become a hospital access to the parking facilities, the Tower, and the medical center main entrance.

Purpose

In general, the purpose of this study is two parts. The first part is to determine the effect, on the adjacent street traffic, of realigning of Parkwest Boulevard and relocating its intersection with Sherrill Boulevard. The second is to evaluate the impact of the expansion on traffic flow in the hospital's vicinity, especially the hospital access to Cedar Bluff Road and Sherrill Boulevard. The new buildings will be connected to the existing structure by construction on a portion of Parkwest Boulevard. With the closure of this street, traffic traveling east and westbound from Sherrill Boulevard to and from the Physicians Plaza environs will have to travel a different route to their desired destinations. In addition, new trips generated by the expansion will be added to the proposed realigned street and existing street network.

There was an early plan to close Parkwest Boulevard in front of the hospital during construction of the new bed tower. Because of that possibility, CDM Smith had an origin-destination study conducted to determine the amount of through traffic on Parkwest Boulevard. However, the most recent plan is to construct a temporary Parkwest Boulevard Alignment and keep it open during construction. A section of this report will address that temporary road and its impact on traffic flow. Since Parkwest Boulevard will remain open during construction in a slightly less convenient form, it is CDM Smith's opinion that minimal change in traffic flow will occur. That is to say, only a negligible amount of traffic will divert from Parkwest Boulevard because of construction and the temporary alignment of it.

Data Collection Activities

One of the most critical components of a traffic study is data collection within the study area. Data collection began in early May 2017 and continued throughout the month. Data that were collected for this study includes:

- Turning movement counts (details included in the Appendix)
- Mechanical traffic counts (details included in the Appendix)
- Origination-Destination Bluetooth Survey (details included in the Appendix)

The turning movement counts began on May 5th and were completed on May 21st prior to the school summer recess. The turning movement counts were made during morning, midday and afternoon peak periods, 7:00 AM to 9:00 AM, 11:00 AM to 1:00 PM and 2:00 PM to 6:00 PM, respectively. These counts are used to evaluate the Level of Service (LOS) at which an intersection performs. The study intersections included:

1. Parkwest Boulevard at Park 40 Boulevard
2. Cedar Bluff Road at Dutchtown Road
3. Cedar Bluff Road at Fox Lonas Road
4. Pellissippi Parkway off-ramp at Sherrill Boulevard and Dutchtown Road
5. Parkwest Boulevard at Sherrill Boulevard
6. Park 40 Boulevard at Sherrill Boulevard
7. Cedar Bluff Road at Sherrill Boulevard
8. Cedar Bluff Road at Parkwest Boulevard/Executive Park Drive
9. Cedar Bluff Road at I-40/75 Eastbound Ramp
10. Cedar Bluff Road at I-40/75 Westbound Ramp

The existing daily traffic counts were conducted for CDM Smith Inc. within the study area. The mechanical traffic counts began on May 10th and were continuous until May 13th. The mechanical counts helped to establish daily traffic volumes within the study area. Mechanical traffic counts were conducted for 72-hours for Parkwest Boulevard east of the proposed road realignment and for Sherrill Boulevard northeast of the hospital. The average weekday traffic (AWT) volume for Parkwest Boulevard is approximately 7,480 vehicles per day (vpd). For Sherrill Boulevard, the AWT is approximately 5,780 vpd.

Historical traffic count data were obtained from Tennessee Department of Transportation (TDOT).

Existing Traffic Characteristics

Data from the field studies were utilized to analyze existing traffic conditions within the Parkwest Medical Center environs. The following sections provide a description of the analysis. **Figure 4** illustrates the 72-hour mechanical traffic count data.

Existing Traffic Control Devices and Intersection Geometry

An inventory of existing traffic control devices and intersection geometry is shown in **Figure 5**. Three of the intersections surveyed are stop controlled and seven are signalized. Signalized intersections are along Cedar Bluff Road and the intersection of Dutchtown Road and Sherrill Boulevard at Pellissippi Parkway. Stop control intersections exist on Park 40 Boulevard for its approaches to Sherrill Boulevard and Parkwest Boulevard as well as Parkwest Boulevard at Sherrill Boulevard.

Existing Peak Hour Volumes

Figure 6A illustrates the current intersection turning movement counts for the AM and PM peak hours and **Figure 6B** illustrates the midday and school peak hours. When all the intersections are considered, the morning peak hour varies between the hour beginning 7:45 and 8:45 AM, and the afternoon peak is from 5:00 to 6:00 PM.

During the PM peak hour, volumes on Cedar Bluff Road, north of Parkwest Boulevard and Executive Park Drive, are heavier in the northbound direction. However, south of this intersection the volumes are greater in the southbound direction. It could be that drivers destined for the medical center use Pellissippi Parkway and Sherrill Boulevard in the morning and then Parkwest Boulevard to Interstate 40/75 in the afternoon.

As shown in **Figure 6B**, the midday and school peak traffic volumes were also evaluated for this project. The north and southbound volumes, north of Parkwest Boulevard and Executive Park Drive, were fairly balanced, which would be expected on this section of Cedar Bluff Road with the availability of eating establishments. South of the intersection, volumes in the

southbound direction are much greater than the northbound. These could be drivers oriented to the interstate or Kingston Pike.

**72-HR Average Weekday
Traffic (AWT)**

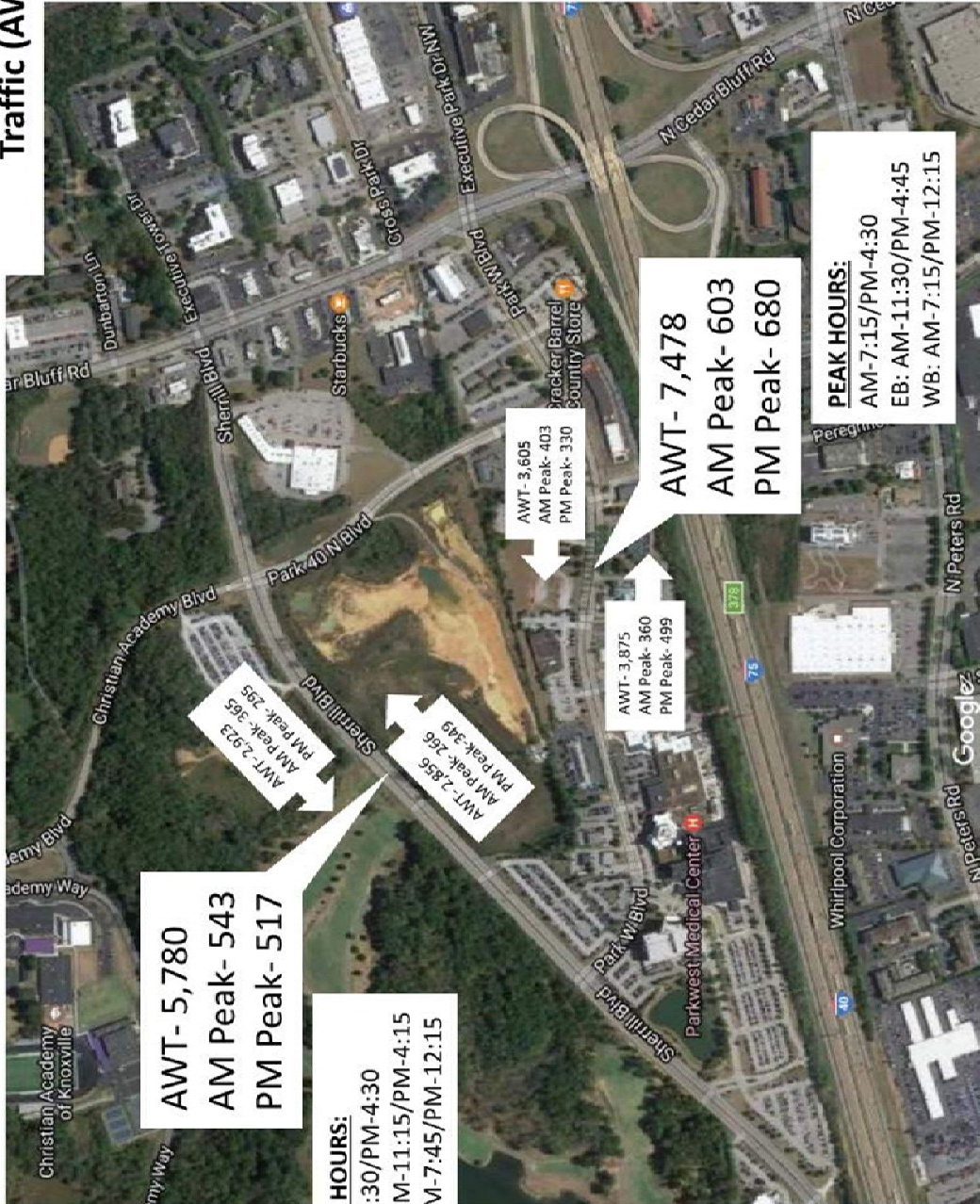
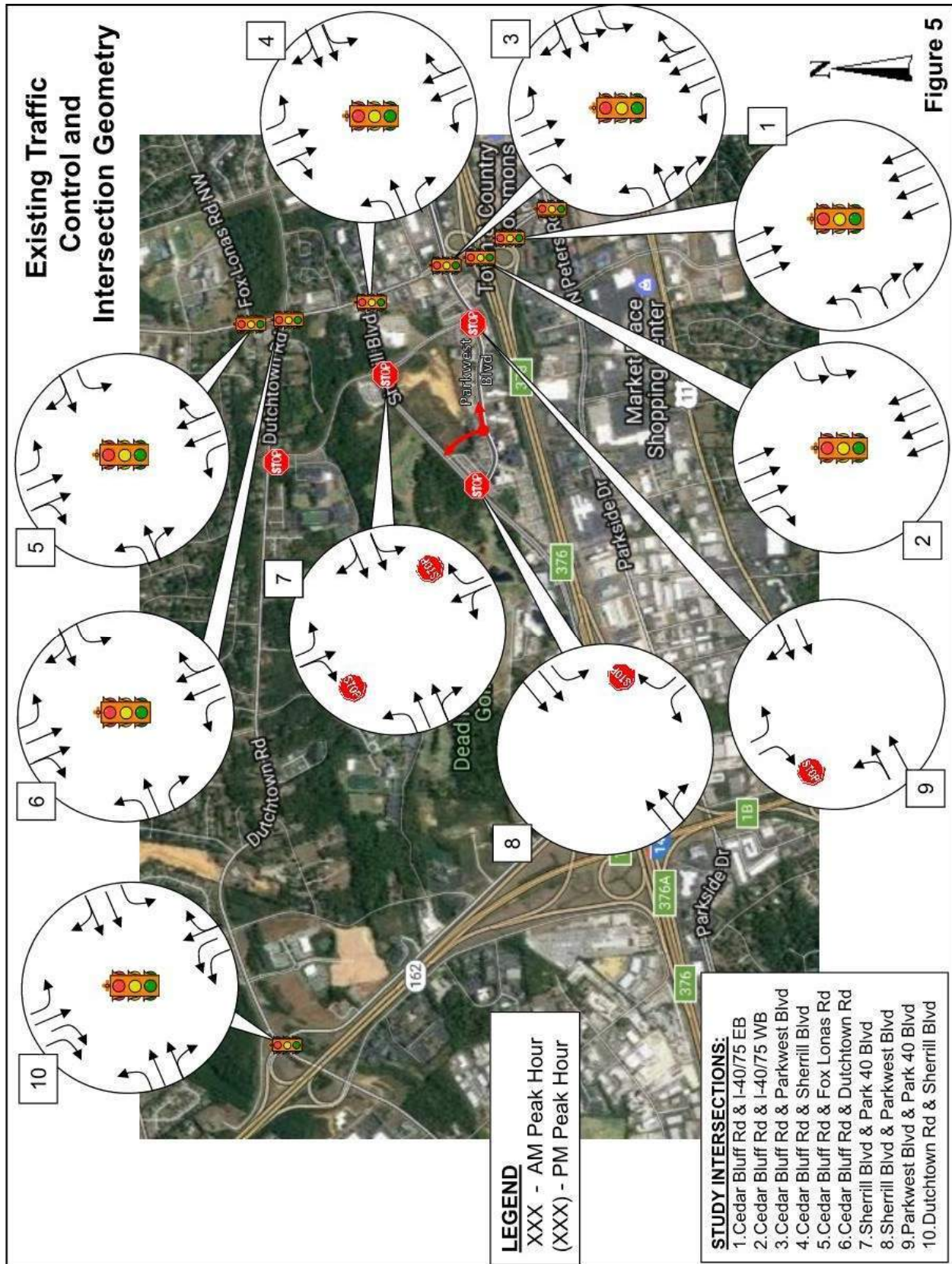
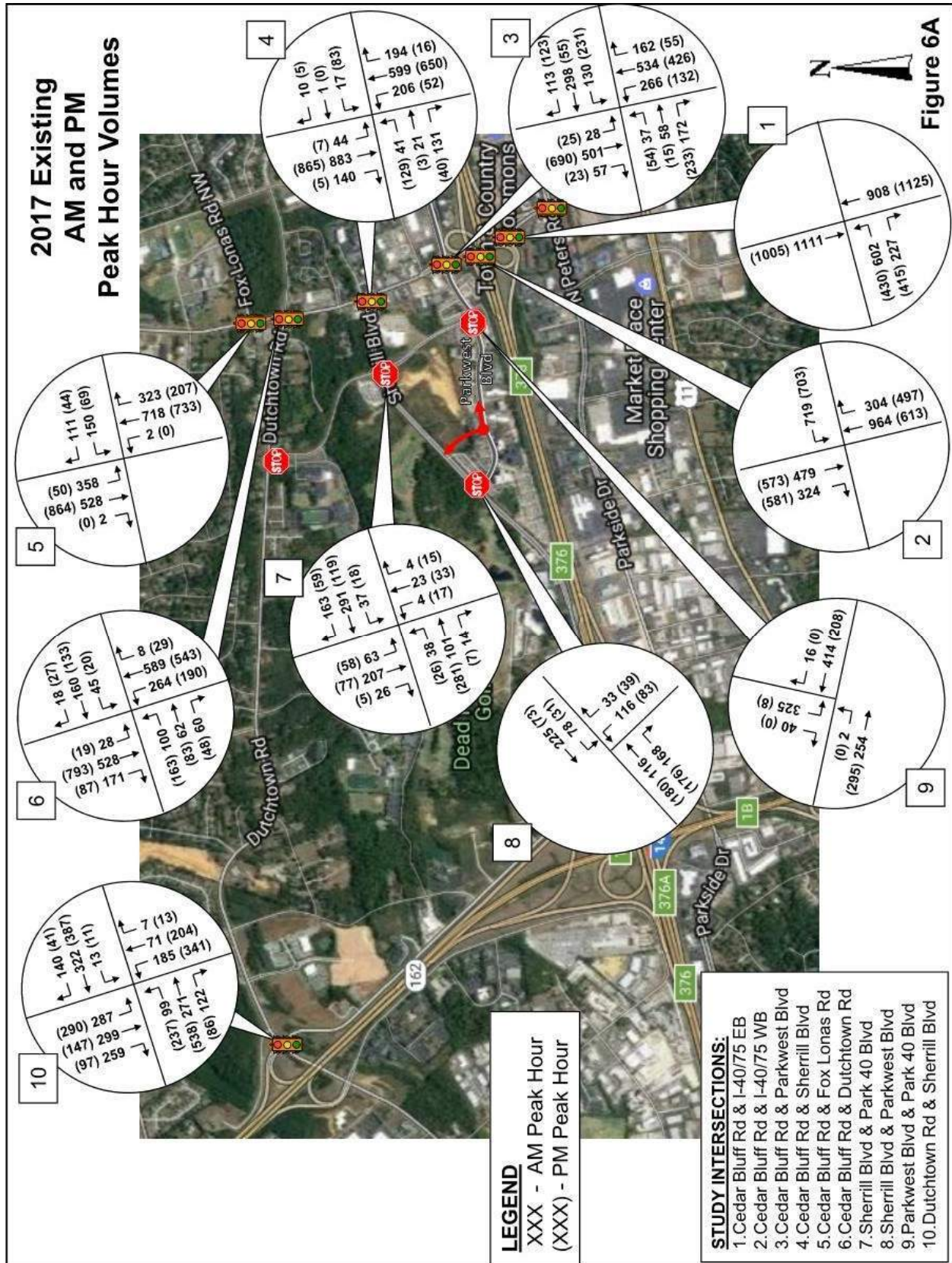
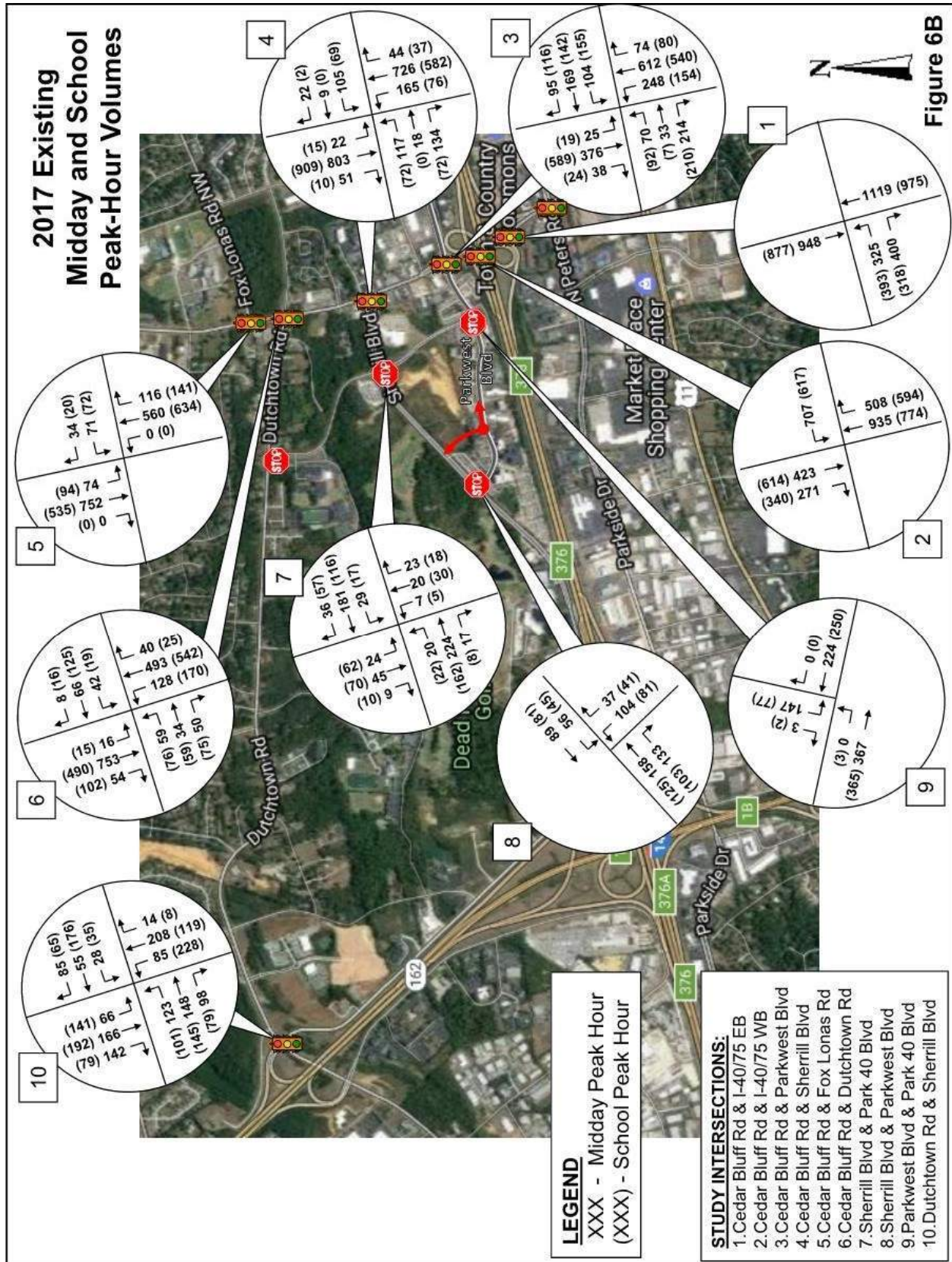


Figure 4







Level of Service Definitions

In order to express traffic conditions as perceived by drivers, traffic engineering professionals utilize the concept of “level of service” (LOS). Level of service is a qualitative statement of the acceptability of traffic conditions. It reflects the additional travel time, or delay, incurred by drivers at intersections. The LOS index ranges from LOS A, indicating excellent traffic conditions with minimal delay, to LOS F indicating very congested conditions and excessive delay. LOS D generally is considered the minimum acceptable condition in urban areas. The criteria for signalized and unsignalized intersections are presented in **Table 1**.

Table 1: Level of Service Criteria

	Delay in seconds per vehicle	
	Signalized Intersections	Stop-controlled Intersections
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

For stop-controlled intersections, LOS is measured only for those drivers that must yield to other traffic, such as drivers entering or crossing a major road from a side-street, or major-street drivers turning left onto a side-street. For signalized intersections, the most meaningful measure is the intersection-wide LOS reflecting the average of conditions for all drivers entering the signalized intersection.

Existing Level of Service

Figures 7A and 7B shows the LOS for the 2017 peak-hour traffic volumes. There are ten study area intersections, and most of these intersections currently operate at an acceptable LOS during the study peak hours.

The intersection of Dutchtown Road and Sherrill Boulevard operates with a LOS E during the afternoon school peak hour. The PM peak hour is approaching capacity with a capacity ratio (V/C, Volume/Capacity) exceeding 0.90, approaching 1.00. Capacity ratios exceeding 0.90 can be unstable and very sensitive to traffic volume variations. The left-turn movements from Sherrill Boulevard and the through movements between the Pellissippi ramps and Sherrill Boulevard operate at a LOS E during the peak hours. The northbound through movement fails during the afternoon school peak hour. During the AM peak hour, adverse queues are experienced for the Pellissippi northbound off-ramp. The current lane storage is insufficient for the current traffic volumes and turning movements. The current right-turn volume from the northbound off ramp does not require a double right-turn lane; Some modification of the lane assignments from the off-ramp could increase the capacity of the intersection and improve the LOS from this approach.

Parkwest Boulevard and Executive Park Drive approaches to Cedar Bluff Road experience a LOS E during the peak hours. Likewise, the Sherrill Boulevard left turn and through movements to Cedar Bluff Road operate at LOS E during some peak hours. The intersection of Cedar Bluff road and Fox Lonas Road operates over capacity at a E LOS during the AM peak hour with the southbound left-turn movement failing. Fox Lonas Road intersection operates with this poor LOS due to the morning school traffic.

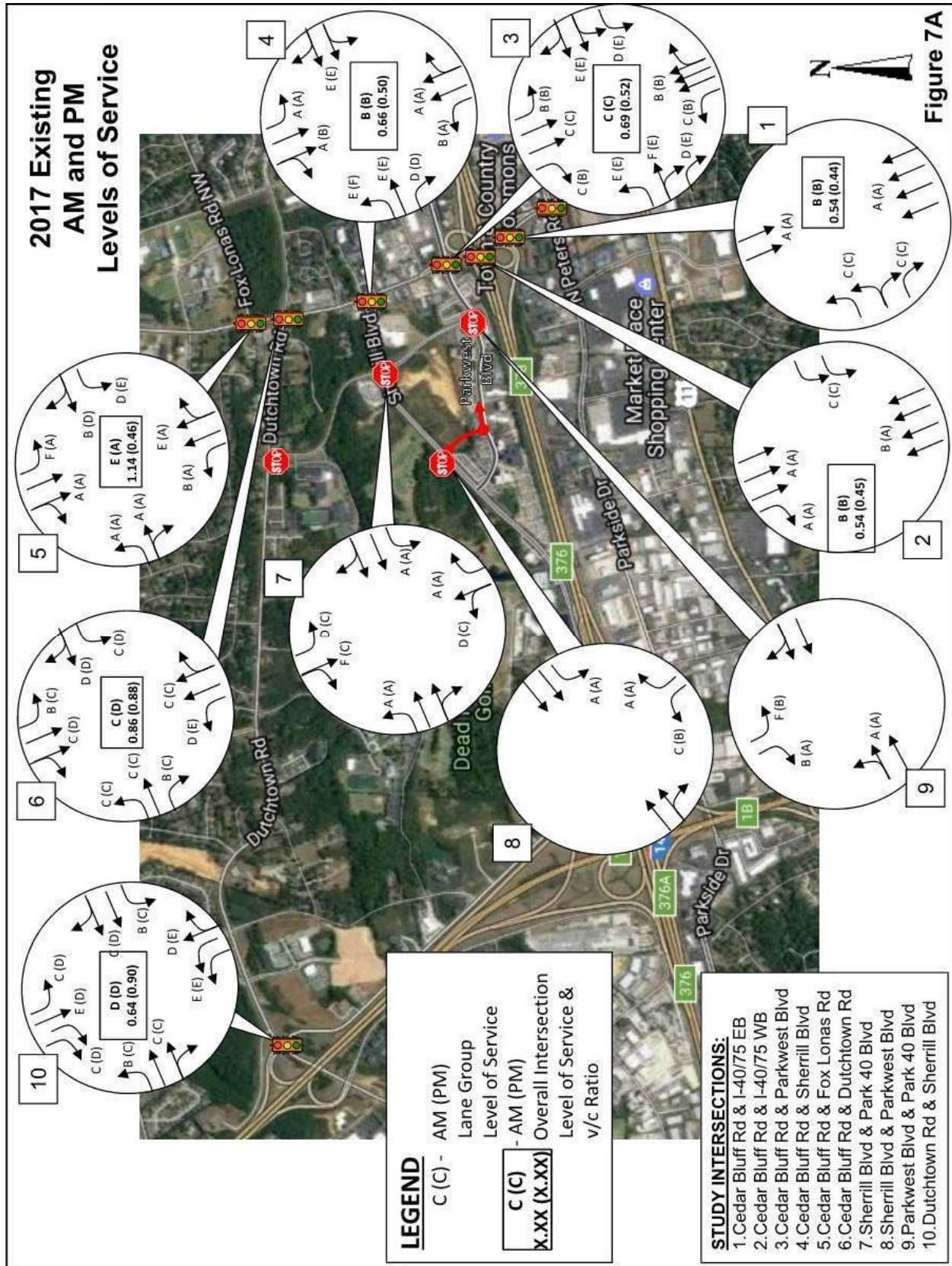
Sherrill Boulevard at Park 40 Boulevard/Christian Academy Boulevard

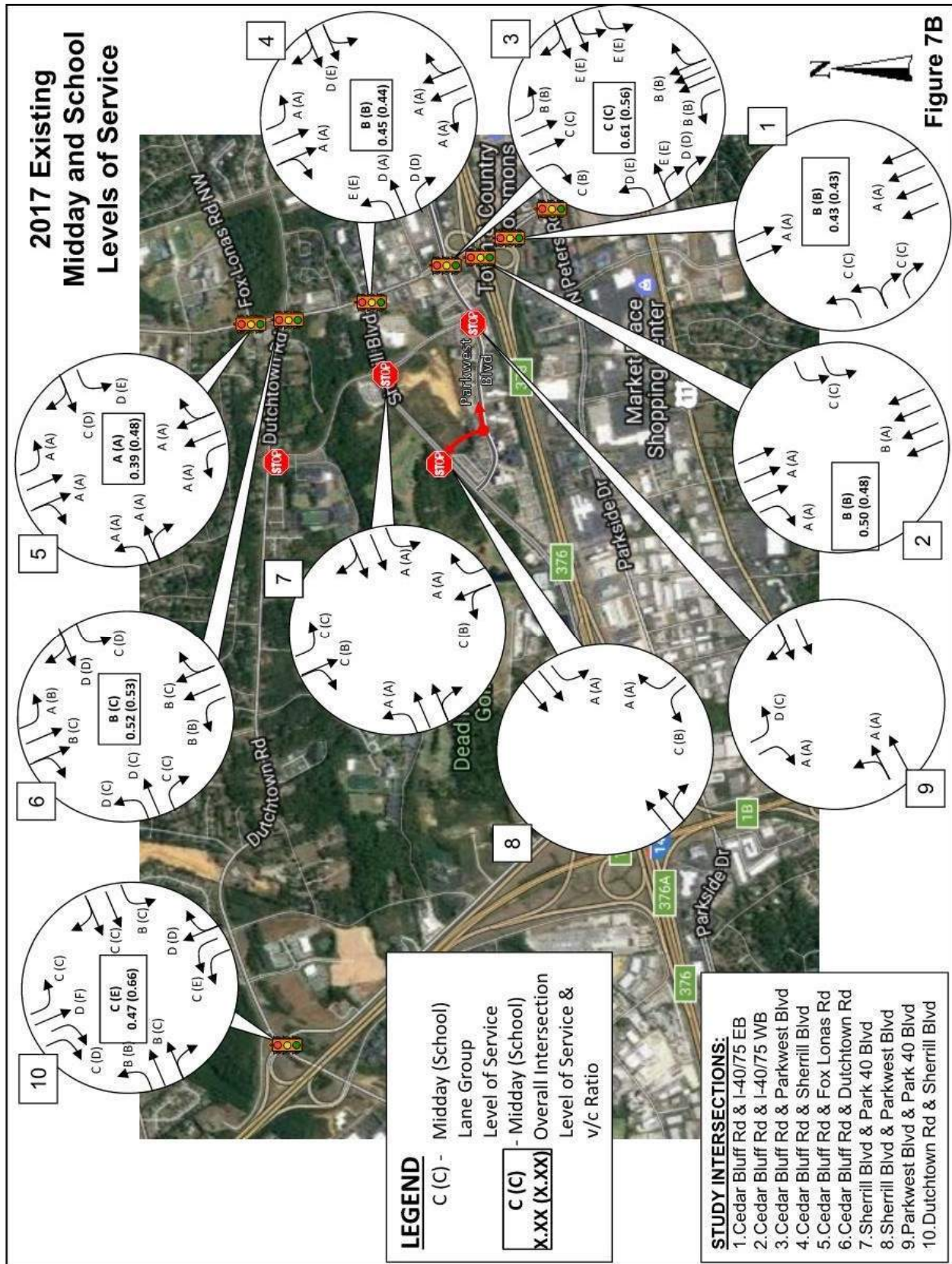
The Park 40 Boulevard and Christian Academy stop controlled approaches to Sherrill Boulevard operate with a LOS F during the AM peak hour, which is currently mitigated with the Sheriff's Department providing traffic control for the intersection. At the Park 40 Boulevard and Sherrill Boulevard intersection, an existing traffic signal warrant analysis was

performed and it suggest that traffic is not sufficient to meet the criteria for signalization. Included in the appendix is details of the warrant study.

Sight distance at this intersection was measured by CDM Smith and Land Development Solutions. Looking west from Park 40 Boulevard, the sight distance was measured to be approximately 390 feet, thus slightly less than the desirable 400 feet. All other sight distances were measured to exceed the desirable 400-foot distance. Land Development Solutions reviewed the survey at this intersection and visited the location several times and concluded that the sight distance on Park 40 Boulevard looking west cannot be mitigated by removing objects or modifying terrain. CDM Smith's sight visit resulting in reaching the same conclusion.

There have been discussions about installing a temporary traffic signal at this intersection to replace the Sheriff's Department forces and to mitigate the slightly less than desirable sight distance. However, the new medical office building development on Sherrill Boulevard at Park 40 Boulevard/Christian Academy Boulevard will require a traffic signal, so this will ultimately address the concerns expressed by government leaders.





Background Traffic

Future traffic conditions or background conditions are the anticipated conditions regardless of whether the proposed development occurs or not. A worst-case scenario was considered, so traffic in the study area was assumed to grow as the region develops. The count history available through the TDOT and MPC count stations located in the Parkwest Medical Center environs indicated a 5% annual growth rate over the past five years and 2.5-percent over the past 10 years.

The completion year for the proposed development will be 2019 for the initial expansion phase and 2030 for the hospital buildout. Using the horizon year of 2019 and the growth rate for the project vicinity, background traffic was estimated for the transportation system. Background traffic for 2019 assumes a 10.4-percent growth factor applied to the existing 2017 traffic volumes, reflecting an annual compounded growth rate of 5-percent. For the horizon year 2030, the existing traffic was grown with a 32.5 percent rate, reflecting an annual compounded rate of 2.5-percent. This growth was applied to public rights of way or the public street system. Growth factors were not applied to private streets or driveways as they do not exhibit a continuous growth through the study area. **Figures 8A and 8B** illustrate the 2019 background traffic growth for the study intersections. **Figures 9A and 9B** illustrate the background traffic growth for 2030.

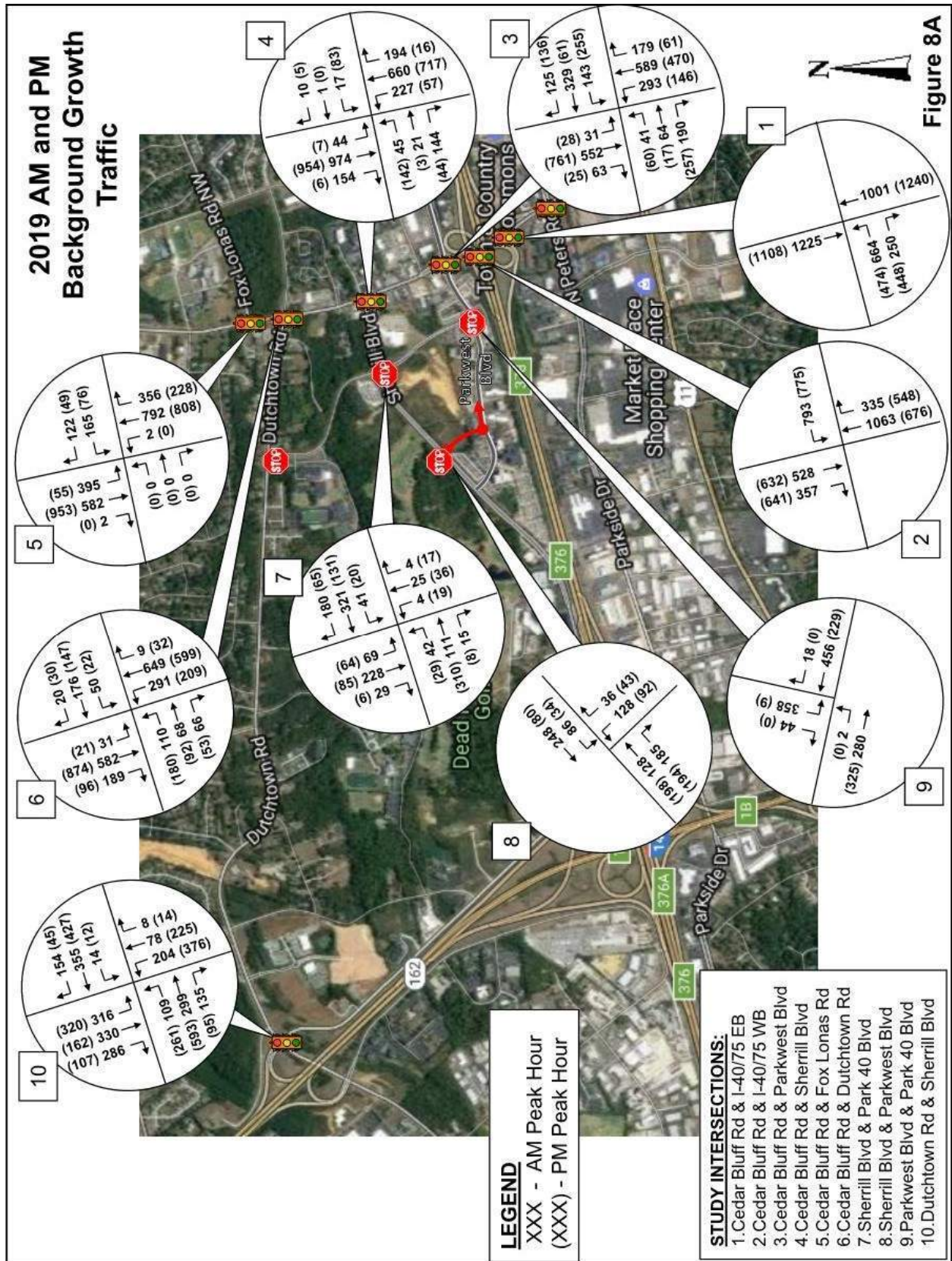
In addition to the normal rate of growth in the traffic through the study area, traffic will increase with new development. A medical office development is planned for the northwest corner of the Sherrill Boulevard intersection with Park 40 Boulevard and Christian Academy Boulevard. Current plans are for 100,000 square feet of medical office space. The trip generation for this office space is presented in **Table 2**. The assignment of these trips is illustrated in **Figures 10A and 10B**.

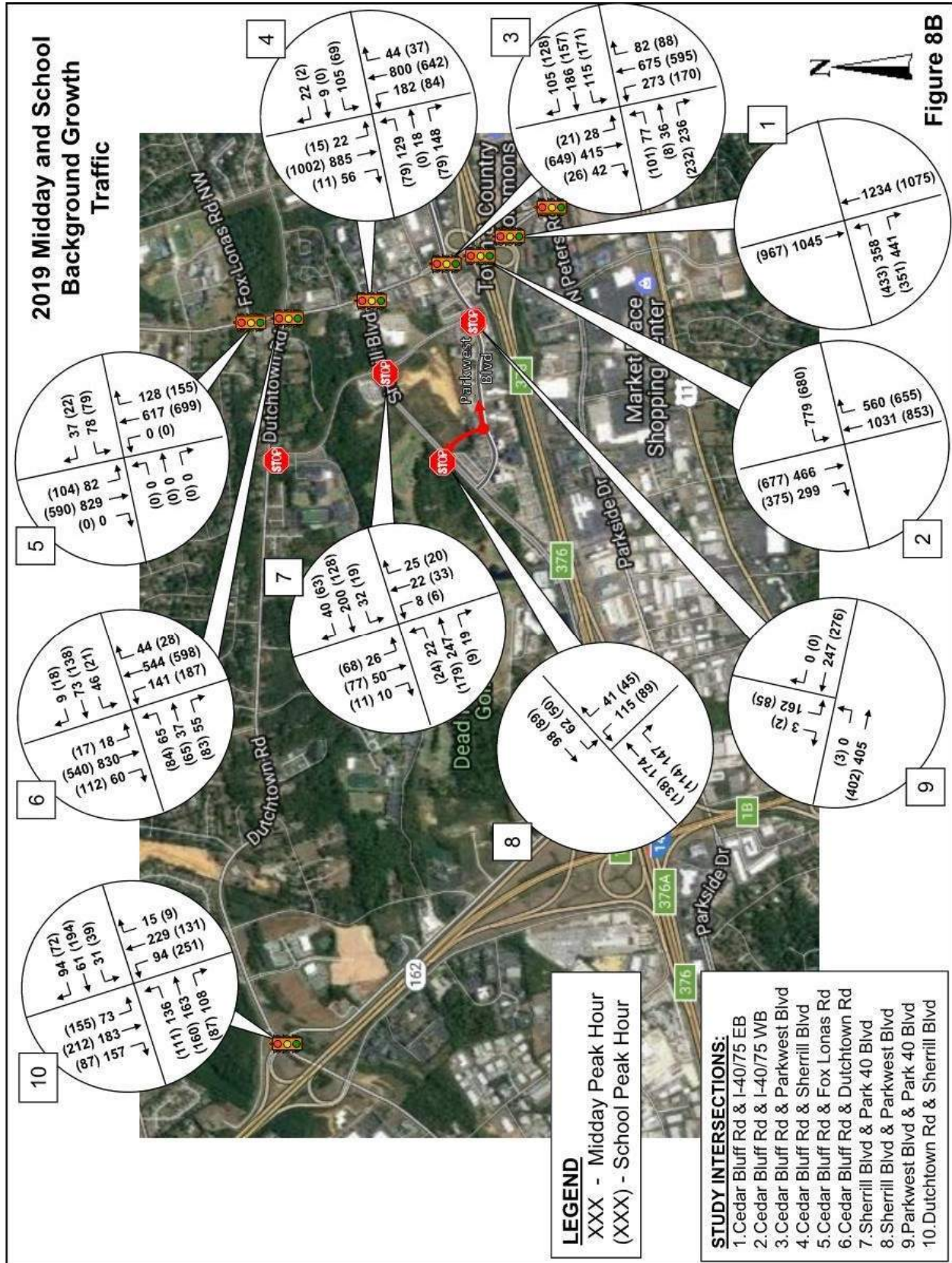
Adding these trips to the background growth turning movements result in the total background traffic, illustrated in **Figures 11A and 11B** for 2019 and **Figures 12A and 12B** for 2030.

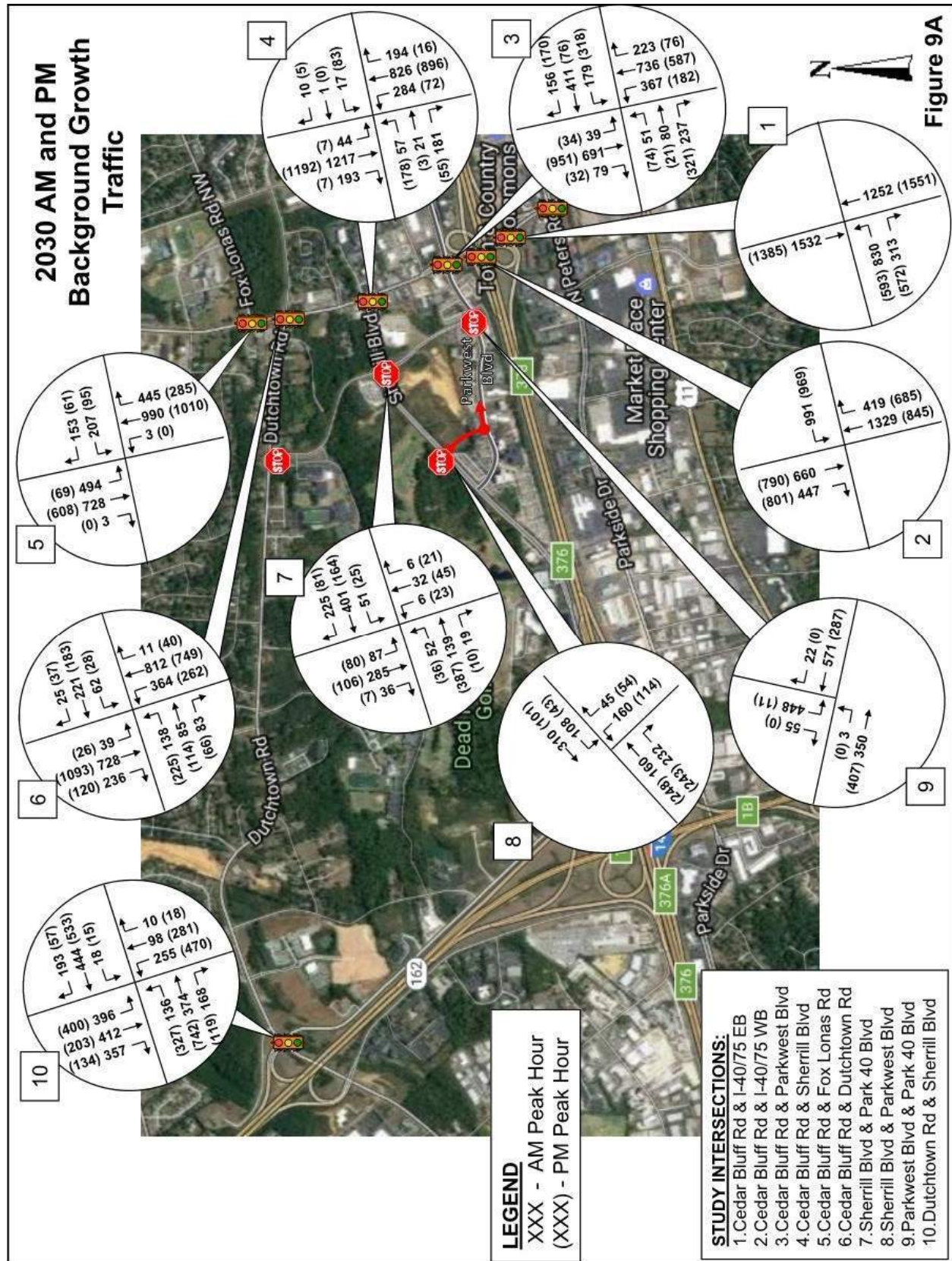
Table 2: Medical Office Development Trip Generation

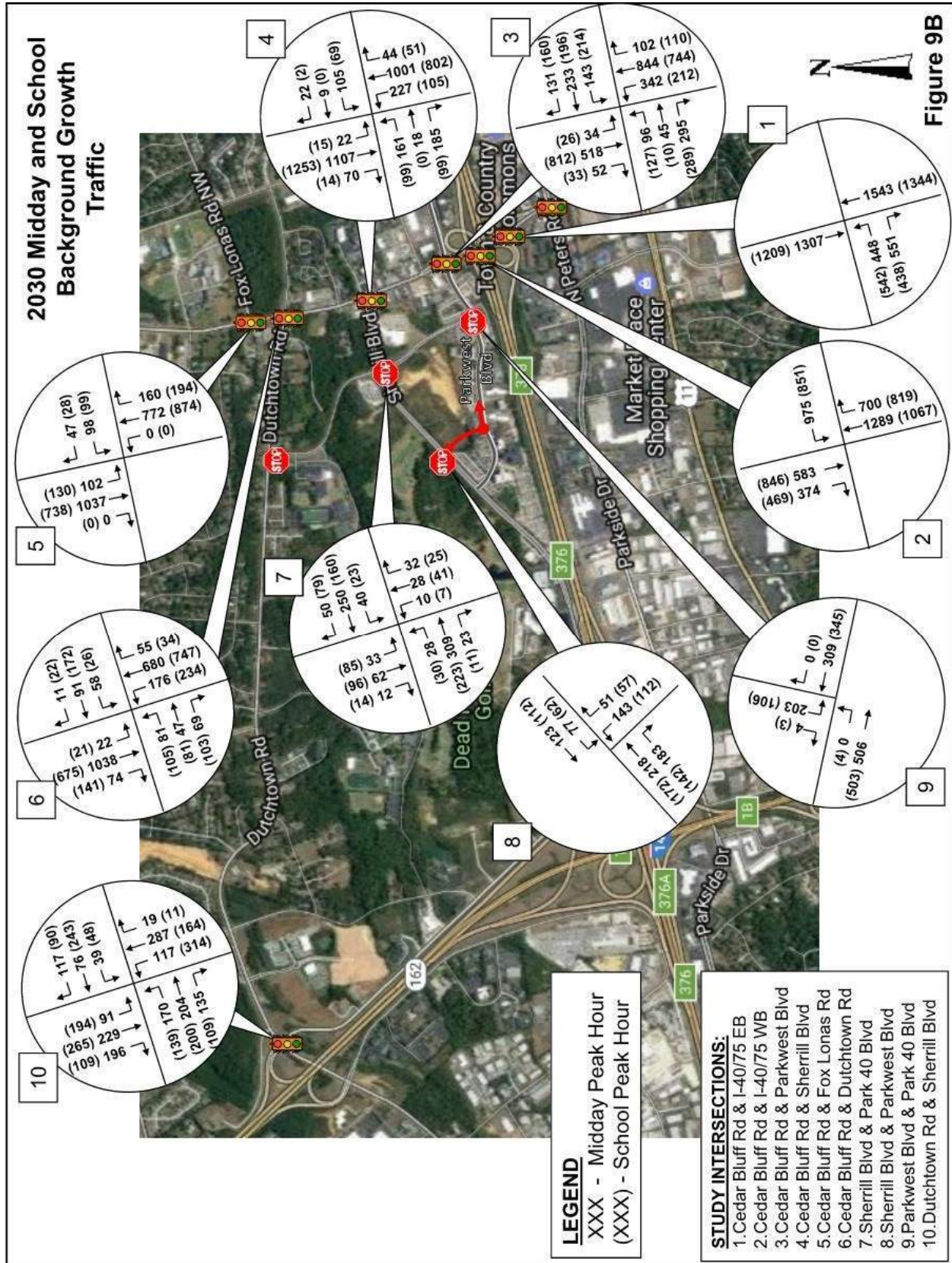
Land Use	LUC	Density (sqft)	Daily	Weekday			
				AM PEAK		PM PEAK	
				Enter	Exit	Enter	Exit
Medical Office	720	100,000	3,874	189	50	100	257
				MIDDAY PEAK		SCHOOL PEAK	
				Enter	Exit	Enter	Exit
				145	218	181	168

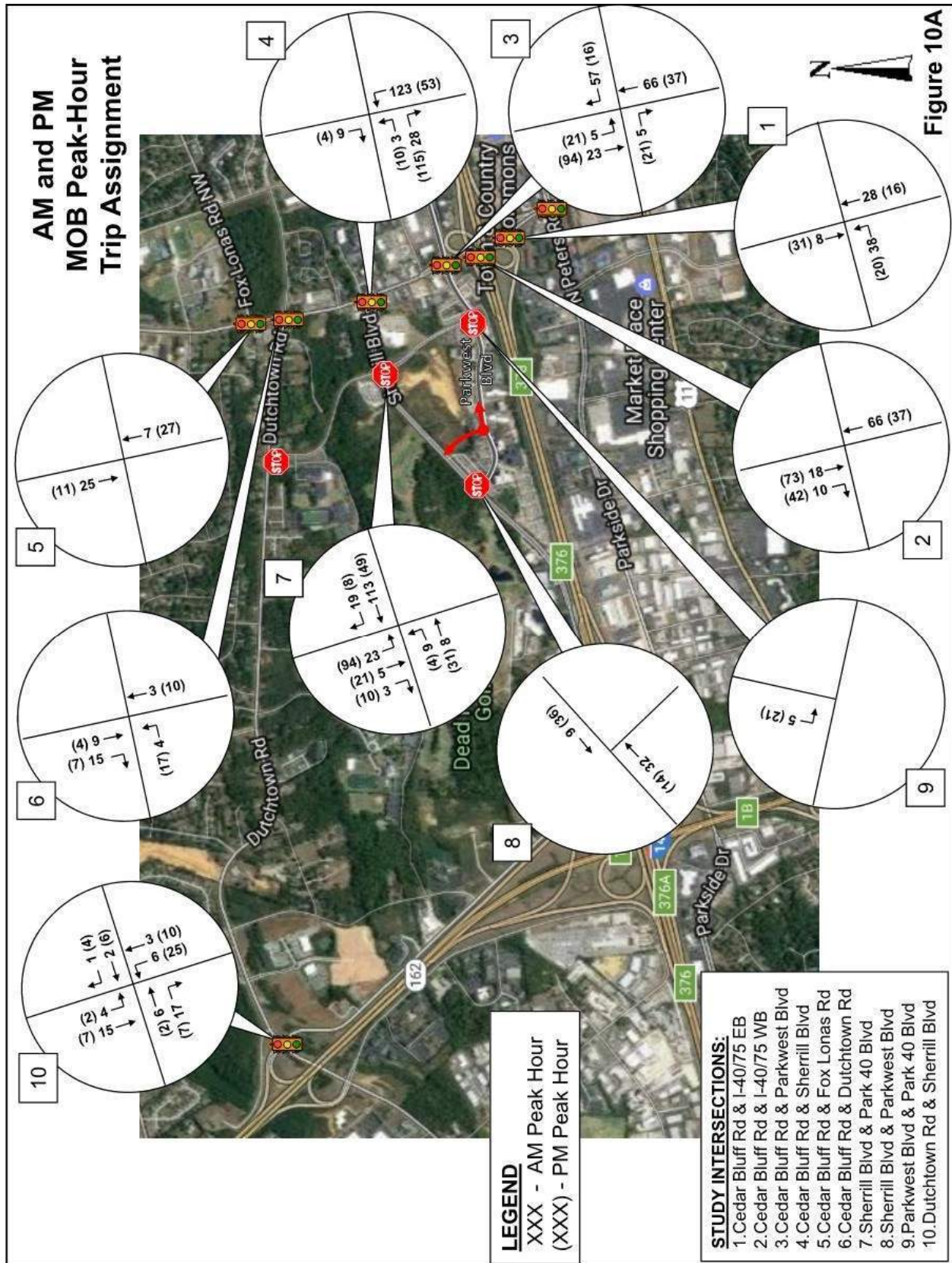
Note: Trips generated using **Trip Generation, 9th Edition**, published by ITE. Midday and school peaks estimated from an observed medical office building hourly distribution.

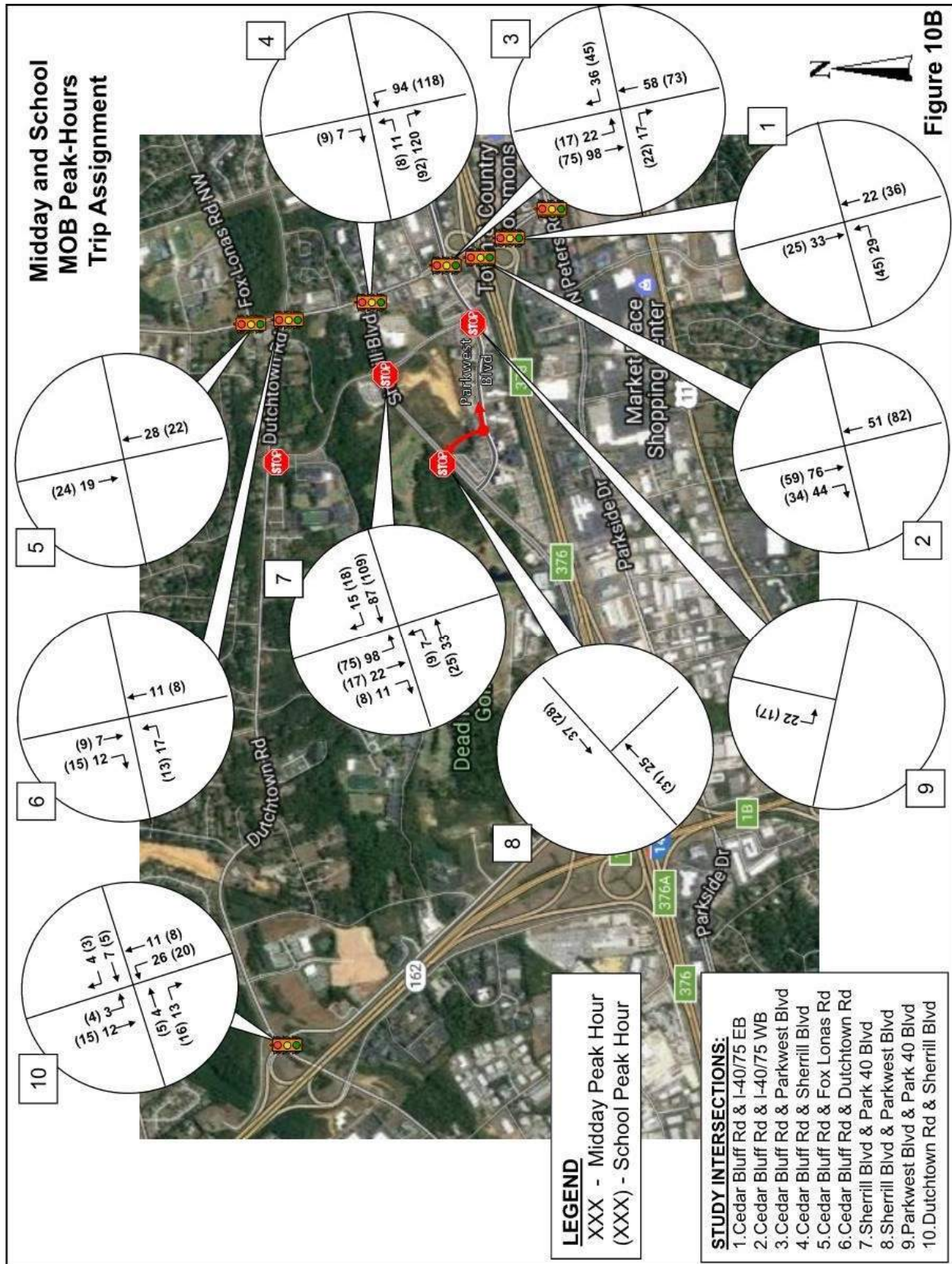


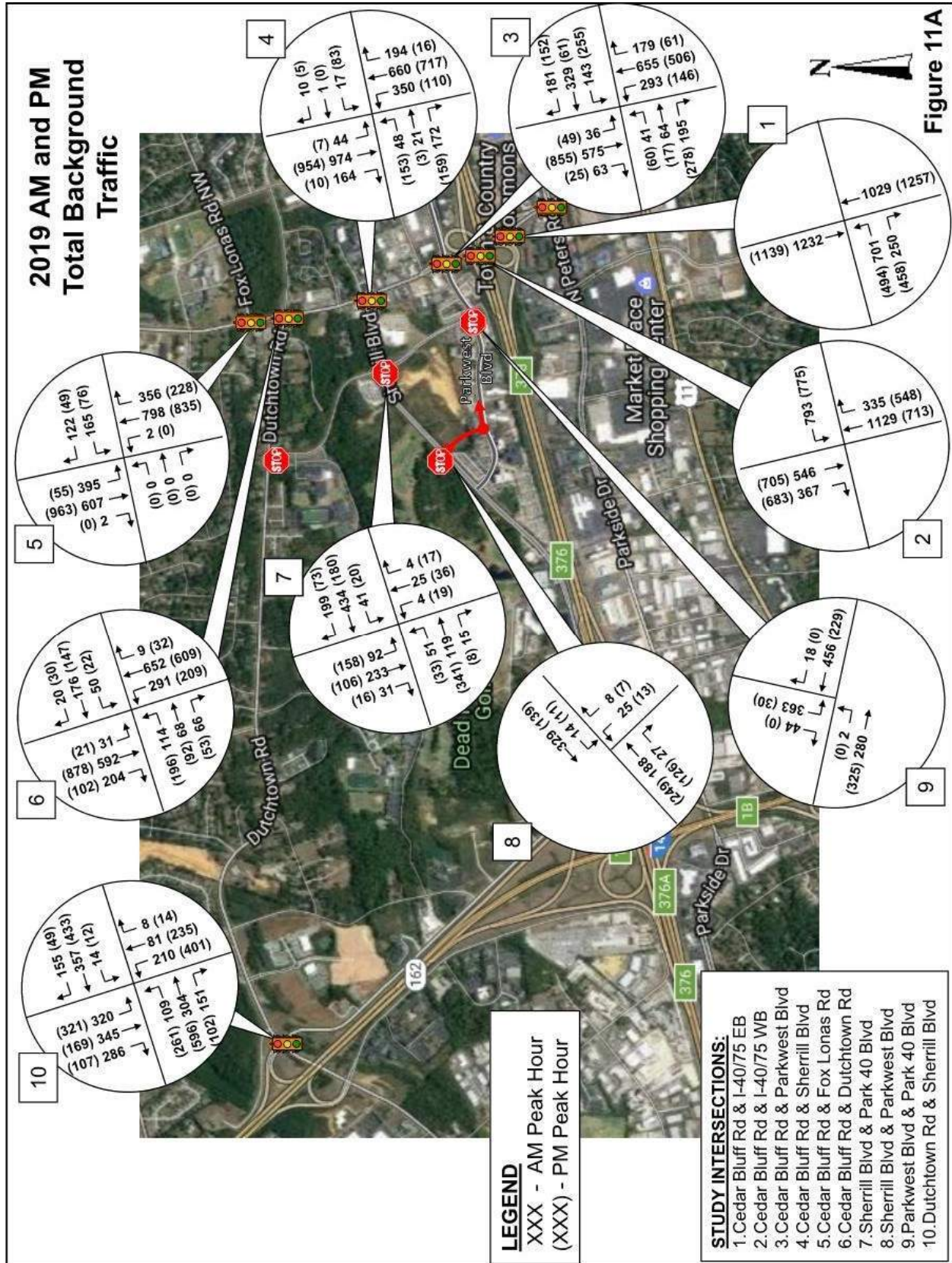


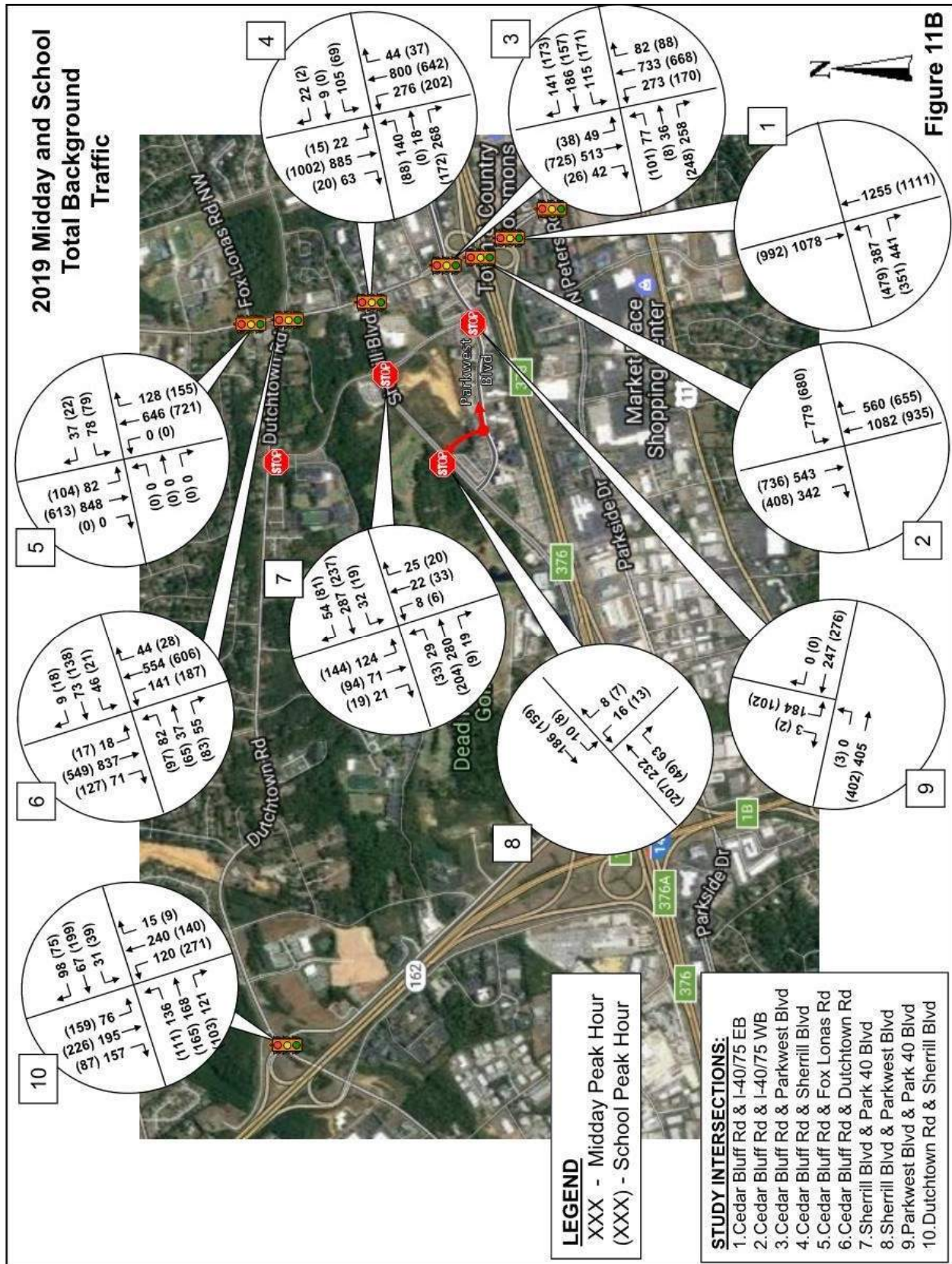


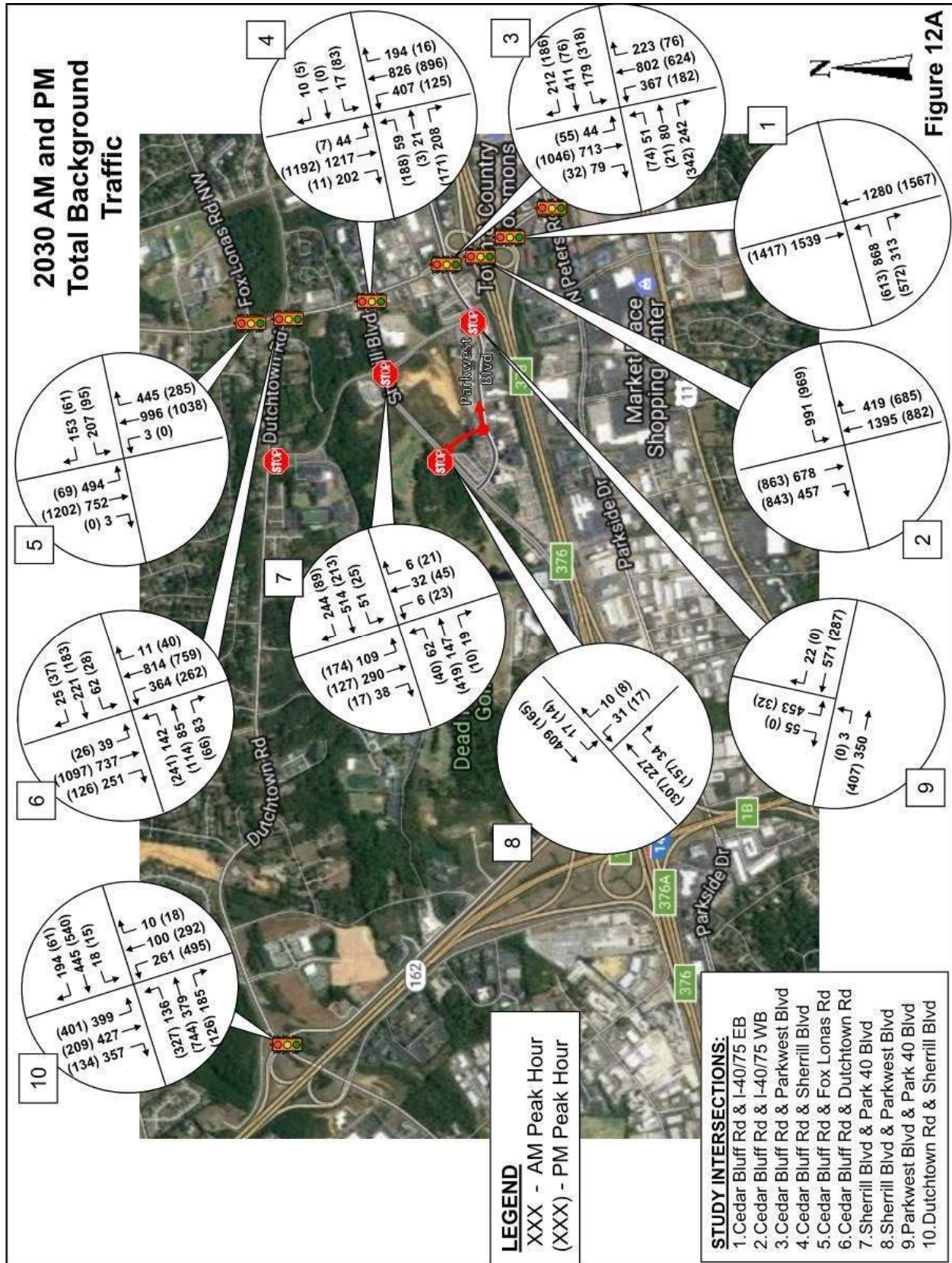


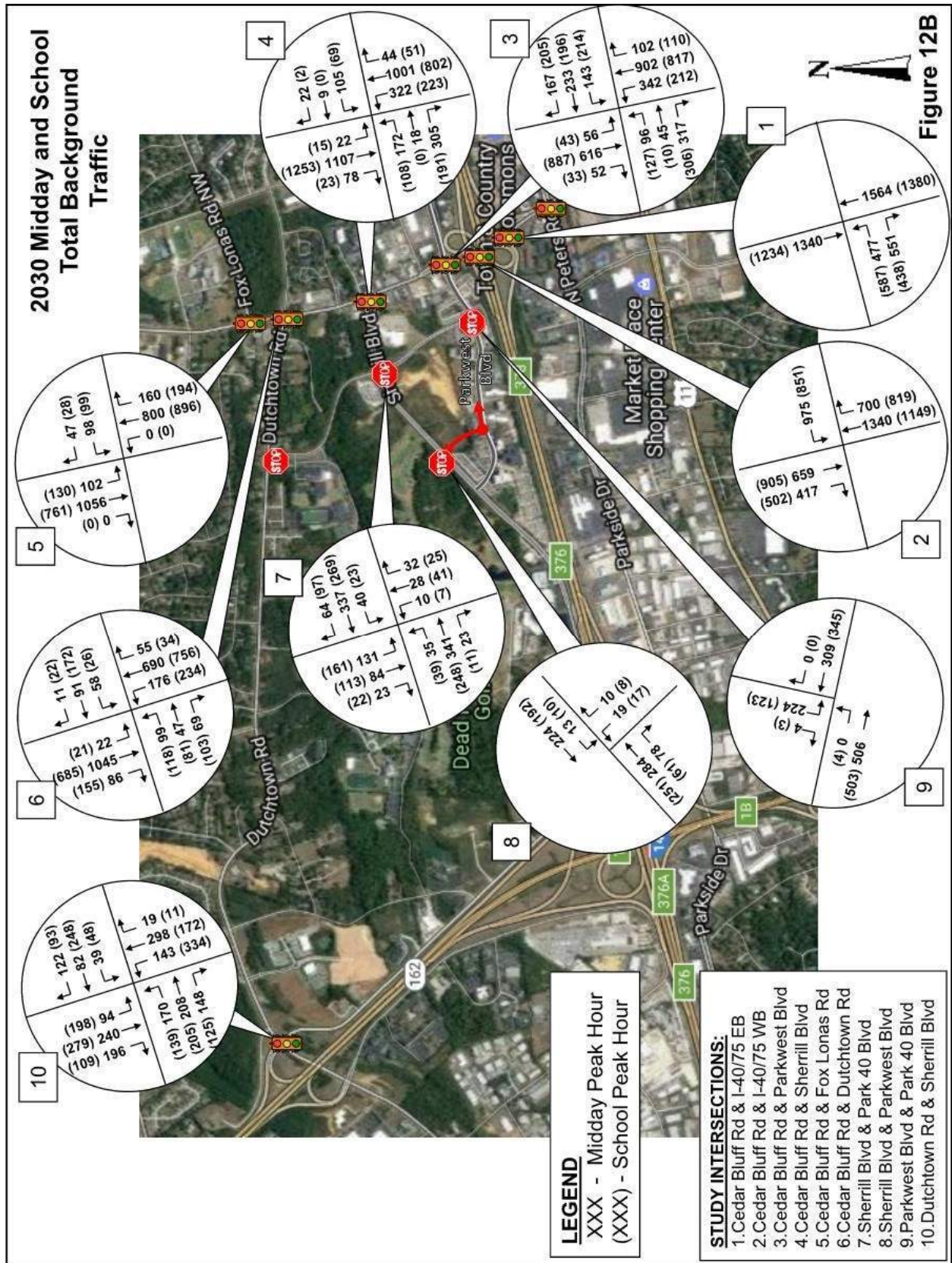










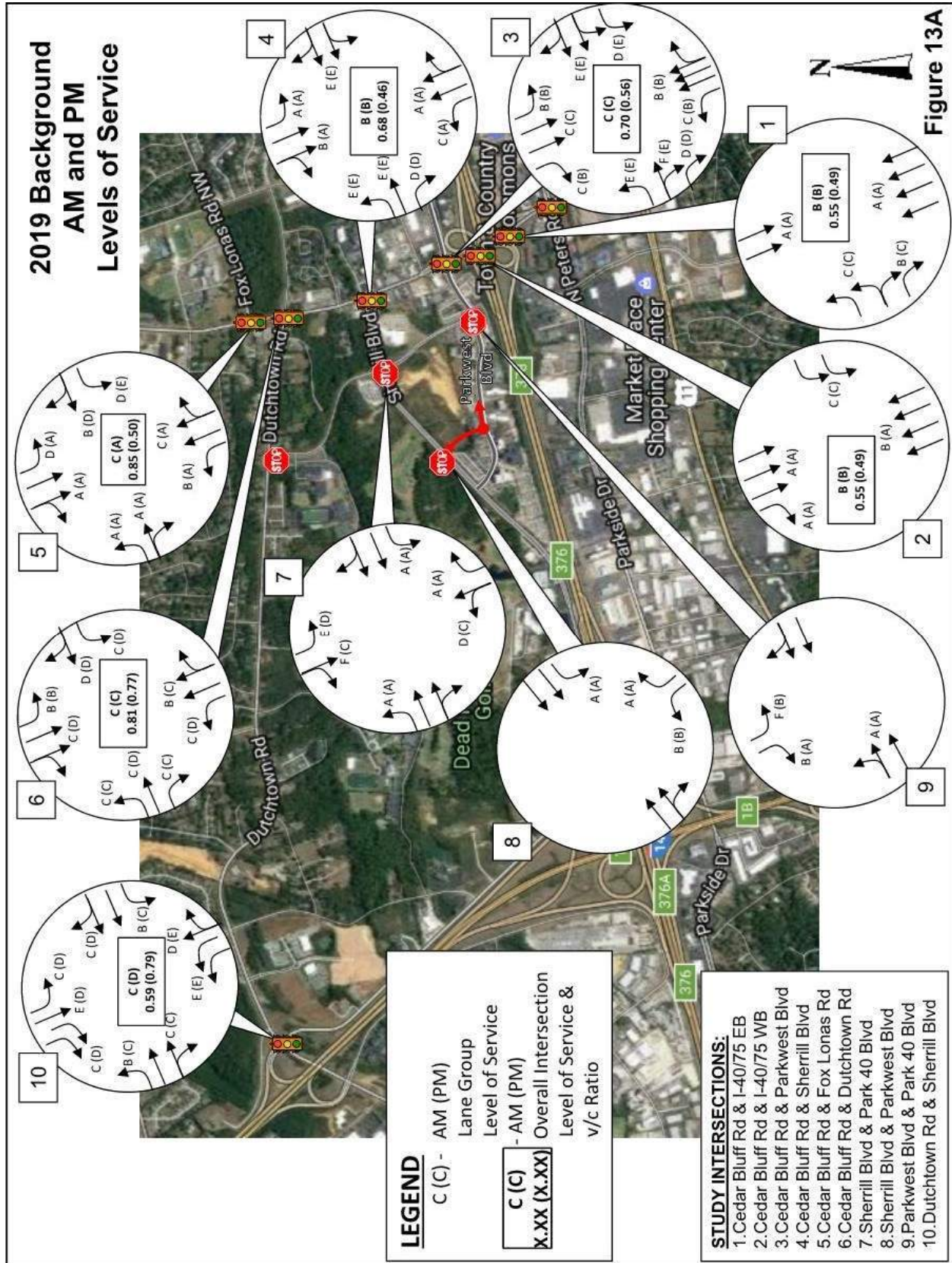


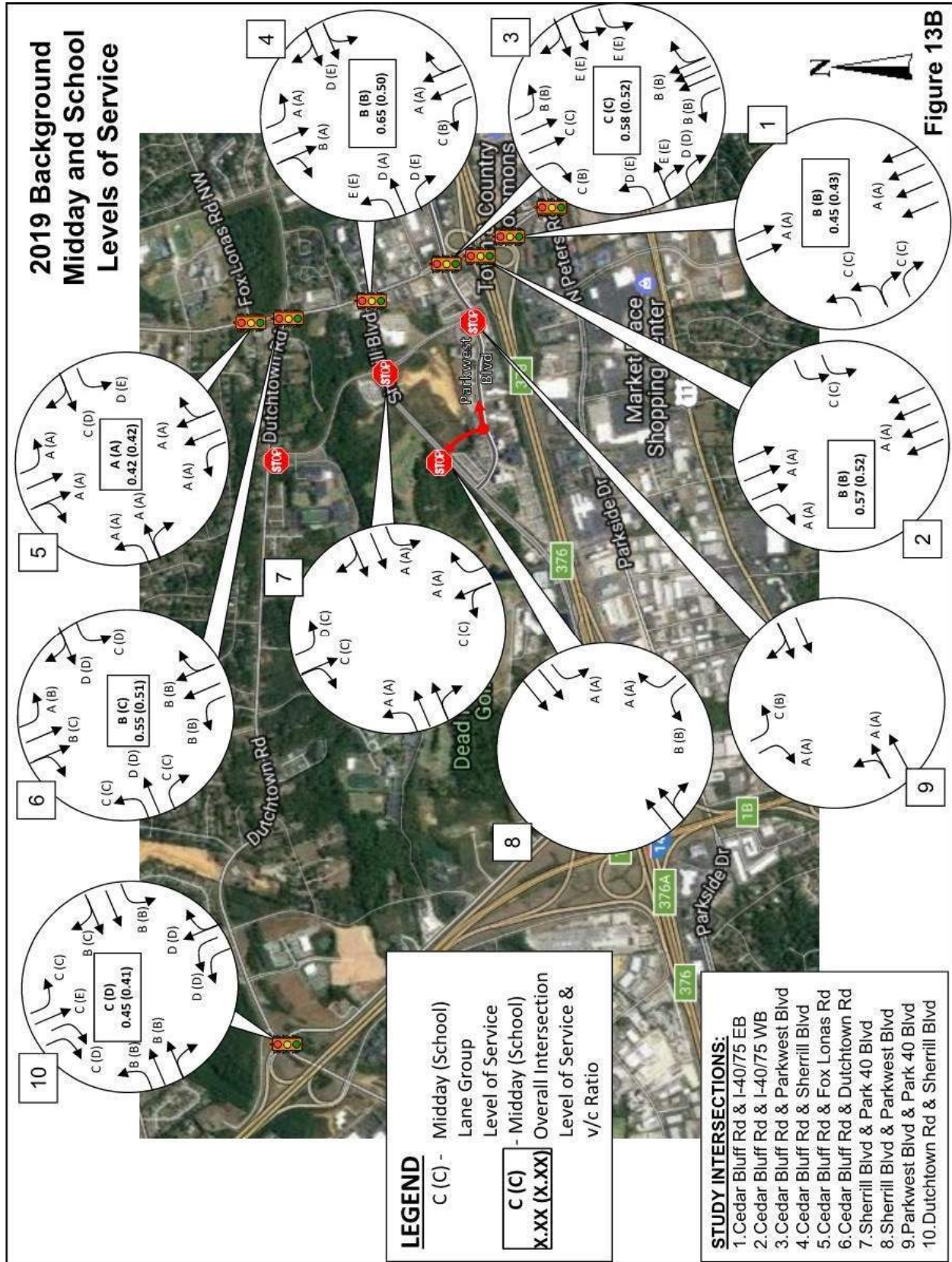
Background Traffic Capacity and LOS

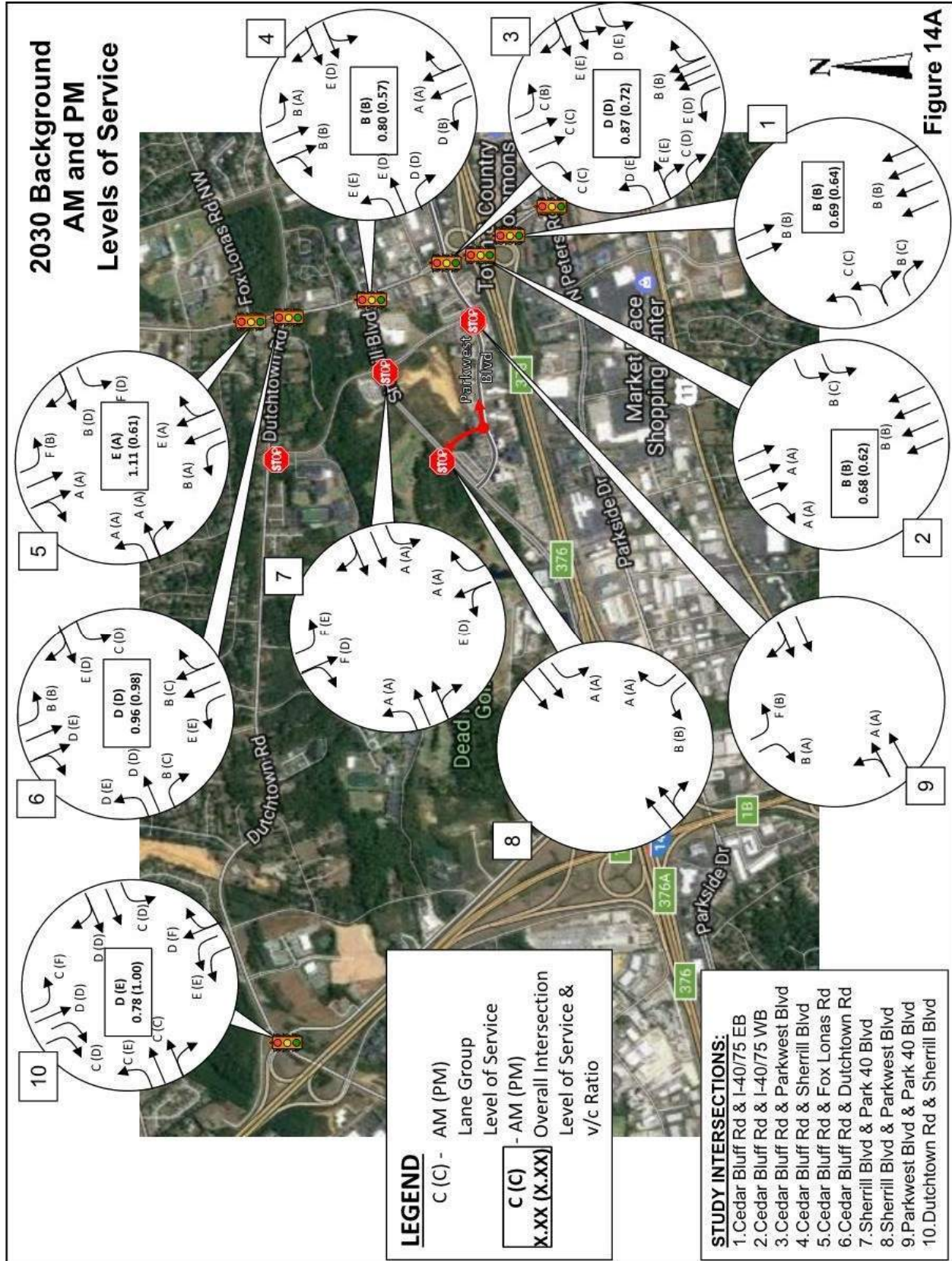
Peak hour analyses were conducted for the study intersections with **Table 3** presenting a summary of the intersection capacity (V/C ratios) and LOS results. **Figures 13A and 13B** illustrates the lane group LOS for the 2019 background horizon year, and the 2030 background horizon year is illustrated in **Figures 14A and 14B**. From the analyses, levels of service are acceptable for 2019. The intersection of Dutchtown Road and Sherrill Boulevard/Pellissippi Northbound off ramp can be improved to a minimum intersection LOS D for the study peaks, but the left-turn and through movements from the off ramp and Sherrill Boulevard may continue to operate at a LOS E. The intersection of Sherrill Boulevard and Dutchtown Road may reach the intersections capacity during the 2030 PM peak hour, and the ramp left-turn and Sherrill Boulevard northbound through movements are found to fail. The Sherrill Boulevard approach to Cedar Bluff Road can be improved to a LOS E during the midday peak hour. The intersection of Sherrill Boulevard and Christian Academy Boulevard will meet signal warrants with the medical office development, and the failing Stop controlled approaches can be mitigated with the signalization of the intersection. Signal warrant analysis for the intersection is found in the Appendix of the report.

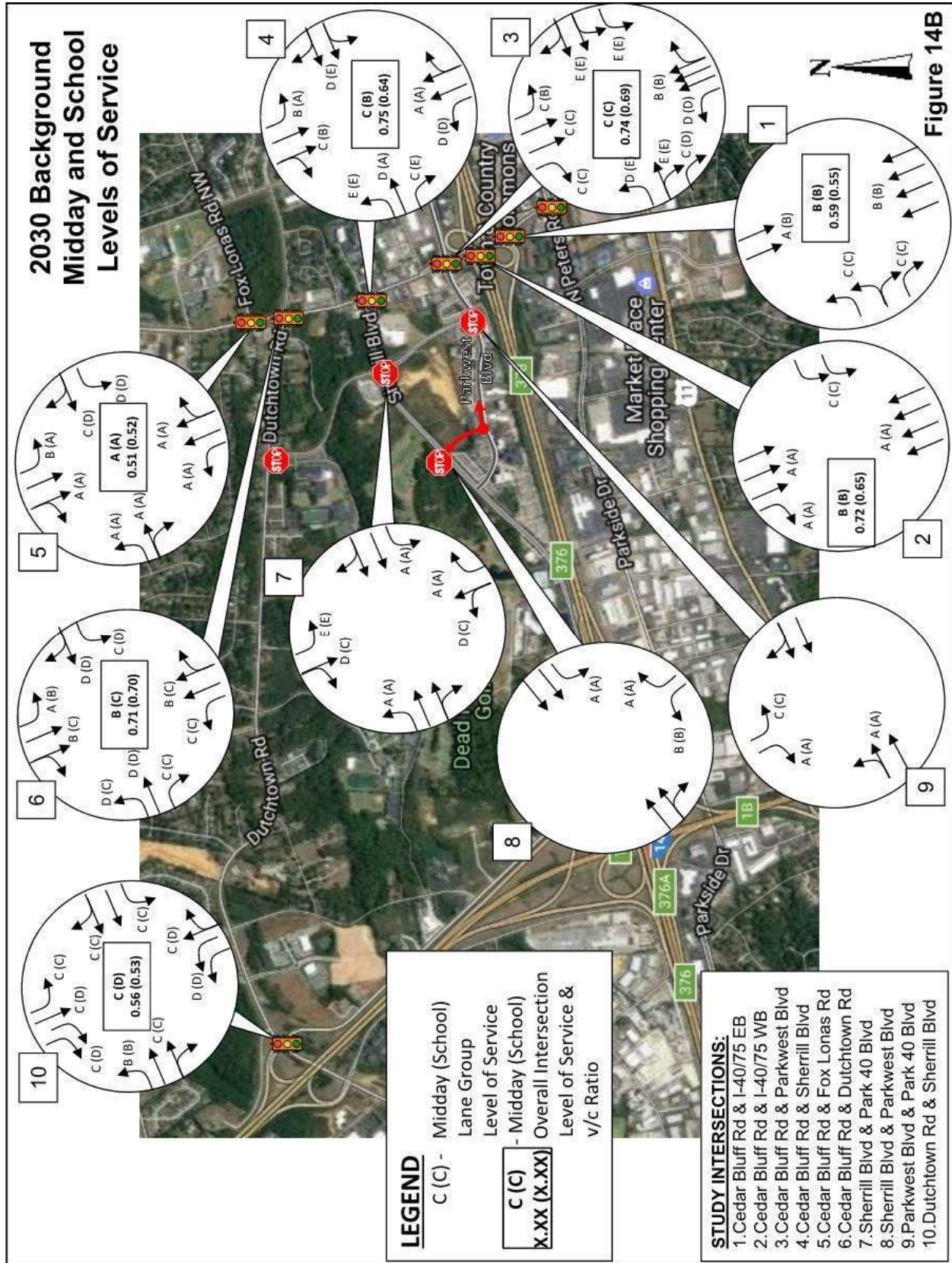
The analyses of the 2030 traffic condition revealed some potential mitigation that would minimize delays and improve LOS. The intersection of Dutchtown Road and Sherrill Boulevard/Pellissippi Parkway northbound off-ramp can be improved by reassigning a northbound right-turn lane for through traffic and the current through lane for a shared left/through movement, thereby providing for two through lanes and/or a double left turn movement from the off-ramp, providing for a more efficient ramp approach throughout the day. This reassignment of the off-ramp lanes would require a signal split phasing and an additional departure lane on Sherrill Boulevard, which would match the current 4-lane section on Sherrill Boulevard, south of the Dutchtown Road intersection. With another receiving lane for the northbound on-ramp and the split phasing, lanes for the Sherrill Boulevard approach could also be reassigned providing for a shared left/through lane and a more efficient approach.

In the 2030 AM peak hour, the northbound left-turn movement on Cedar Bluff Road at Parkwest Boulevard will operate with a LOS E, but it can be improved with the proposed TDOT plan to provide northbound double left-turn lanes.









Medical Center Expansion Trip Generation

Project traffic was determined using the publication, *Trip Generation, 9th Edition*. This reference is published by the Institute of Transportation Engineers (ITE) and represents national data collected for many different land uses including industrial, residential, and commercial uses. *Trip Generation* is an essential tool in calculating the traffic, which is generated by a proposed development.

Trips for the proposed medical center expansion were estimated from the Hospital Land Use Code (LUC 610) of *Trip Generation*. The current plan includes initially 42 additional beds and a buildout of an additional 140 beds. As shown in **Table 3**, the expansion should initially generate approximately 310 new daily trips and a buildout of approximately 1,330 new daily trips. The traffic counts suggest that the AM peak is late morning and the same order-of-magnitude traffic volumes extend through the noon hour; therefore, the AM Peak Hour of Generator formula in *Trip Generation* was used for the midday peak hour trip generation estimate. The PM Peak Hour of Generator formula in *Trip Generation* was used for the school peak hour. The school peak may not necessarily coincide with the hospital afternoon peak, but it was assumed to be the case for this study, which is more conservative than assuming they do not coincide. The peak-hour trip generation should be 264 and 258 for the midday and typical PM peak hours, respectively, with the planned hospital buildout. The initial 42 beds should not generate more than 65 peak-hour trips.

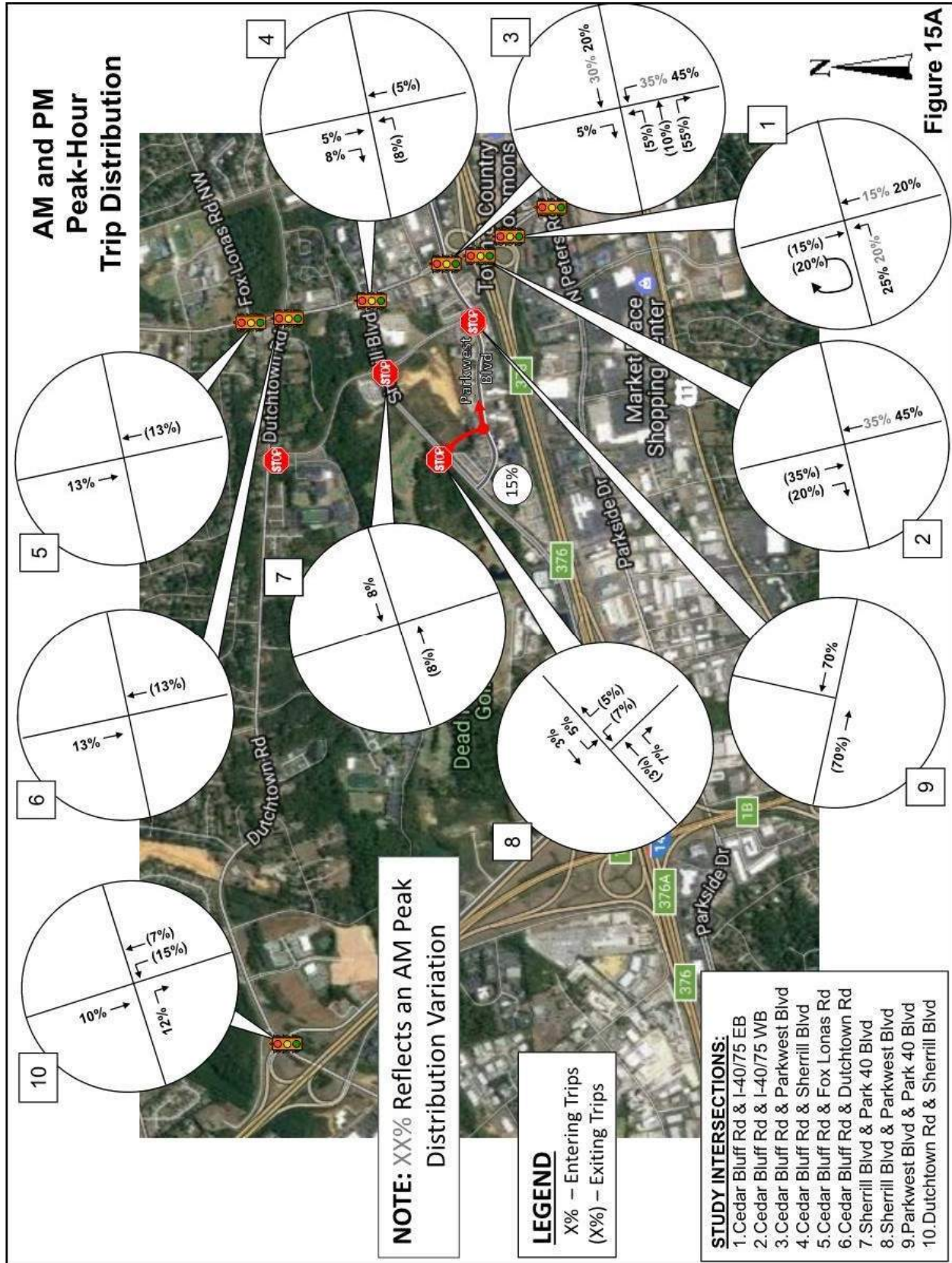
Table 3: Trip Generation

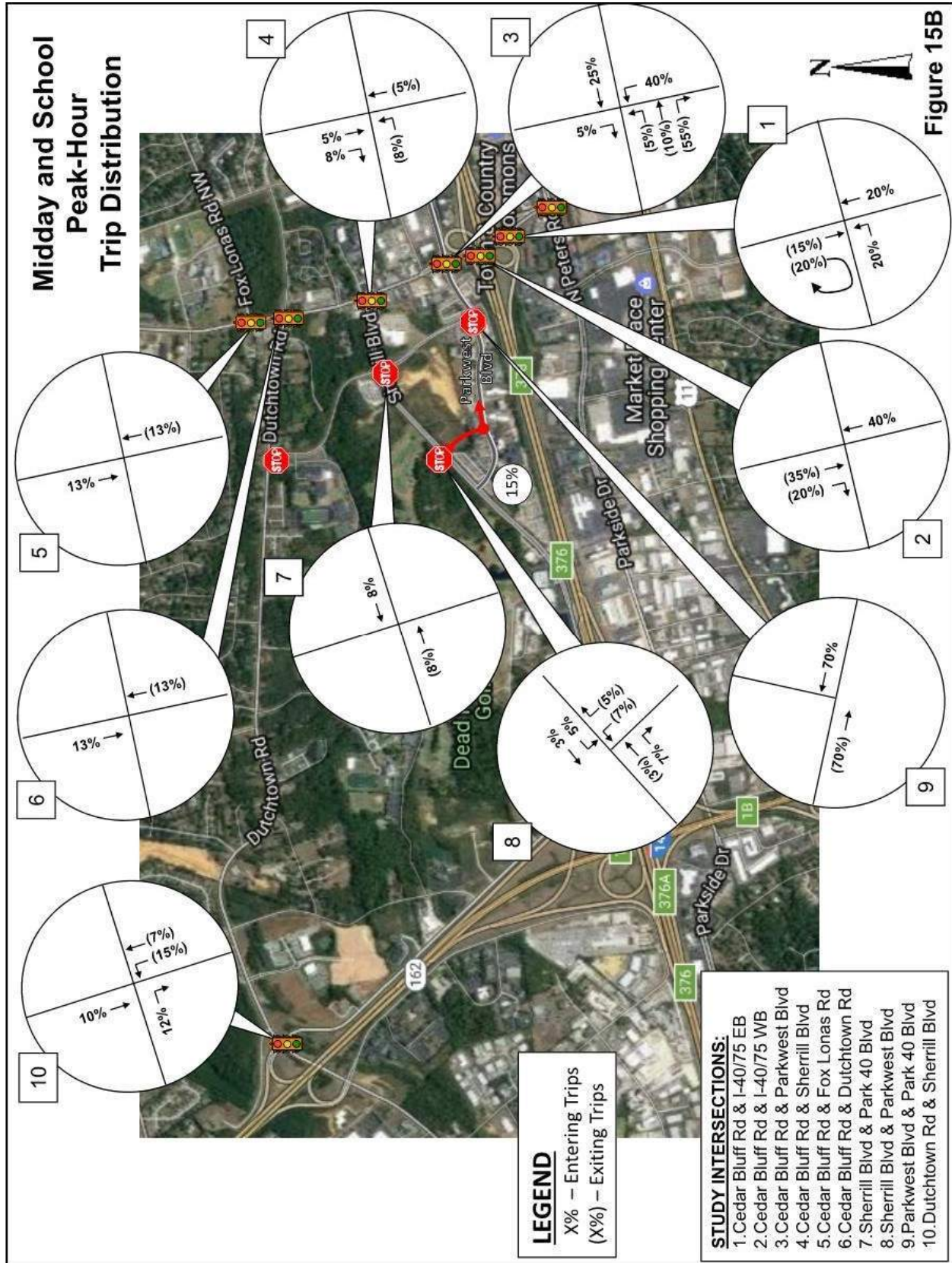
ITE LAND USE CODE (LUC) 610						
PEAK HOUR DESCRIPTION	42 Bed Expansion (2019)			182 Bed Expansion (2030)		
	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
DAILY	154	154	308	667	667	1,334
AM PEAK HOUR OF ADJACENT STREET (AM Peak)	40	16	56	173	67	240
AM PEAK HOUR OF GENERATOR (Midday Peak)	42	19	61	182	82	264
PM PEAK HOUR OF ADJACENT STREET (PM Peak)	20	40	60	85	173	258
PM PEAK HOUR OF GENERATOR (School Peak)	17	34	51	73	141	214

REFERENCE: *Trip Generation, 9th Edition*, Institute of Transportation Engineers (ITE)

Medical Center Expansion Trip Distribution

Using the current distribution and knowledge of the hospital vicinity and its available access, trips were distributed to the transportation network with 13-percent to the north on Cedar Bluff Road and 15- or 20-percent distributed south on Cedar Bluff Road, south of the interstate. From I-40/75, 40- or 45-percent was the distribution from I-40/75. Using Sherrill Boulevard, 22-percent was distributed from Dutchtown Road and Pellissippi Parkway. The distribution did vary somewhat depending on the time of day from the south on Cedar Bluff Road and from I-40/75. Of the trips generated with the hospital expansion, Parkside Drive would facilitate 70-percent and Sherrill Boulevard would facilitate 30-percent. **Figures 15A and 15B** illustrate the distribution for the expanded Parkside Hospital.





Medical Center Expansion Projected Traffic Conditions

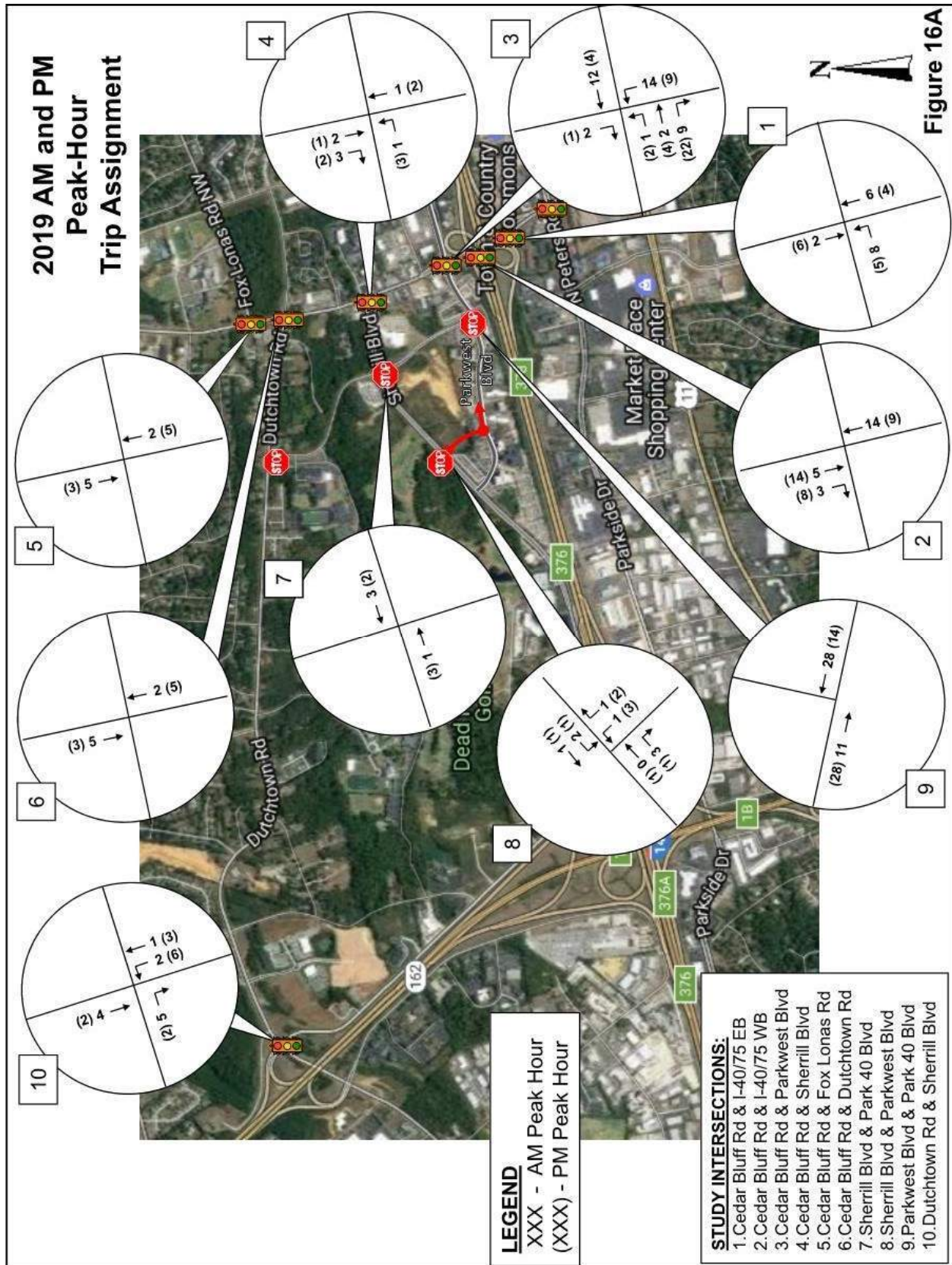
Trip Assignment

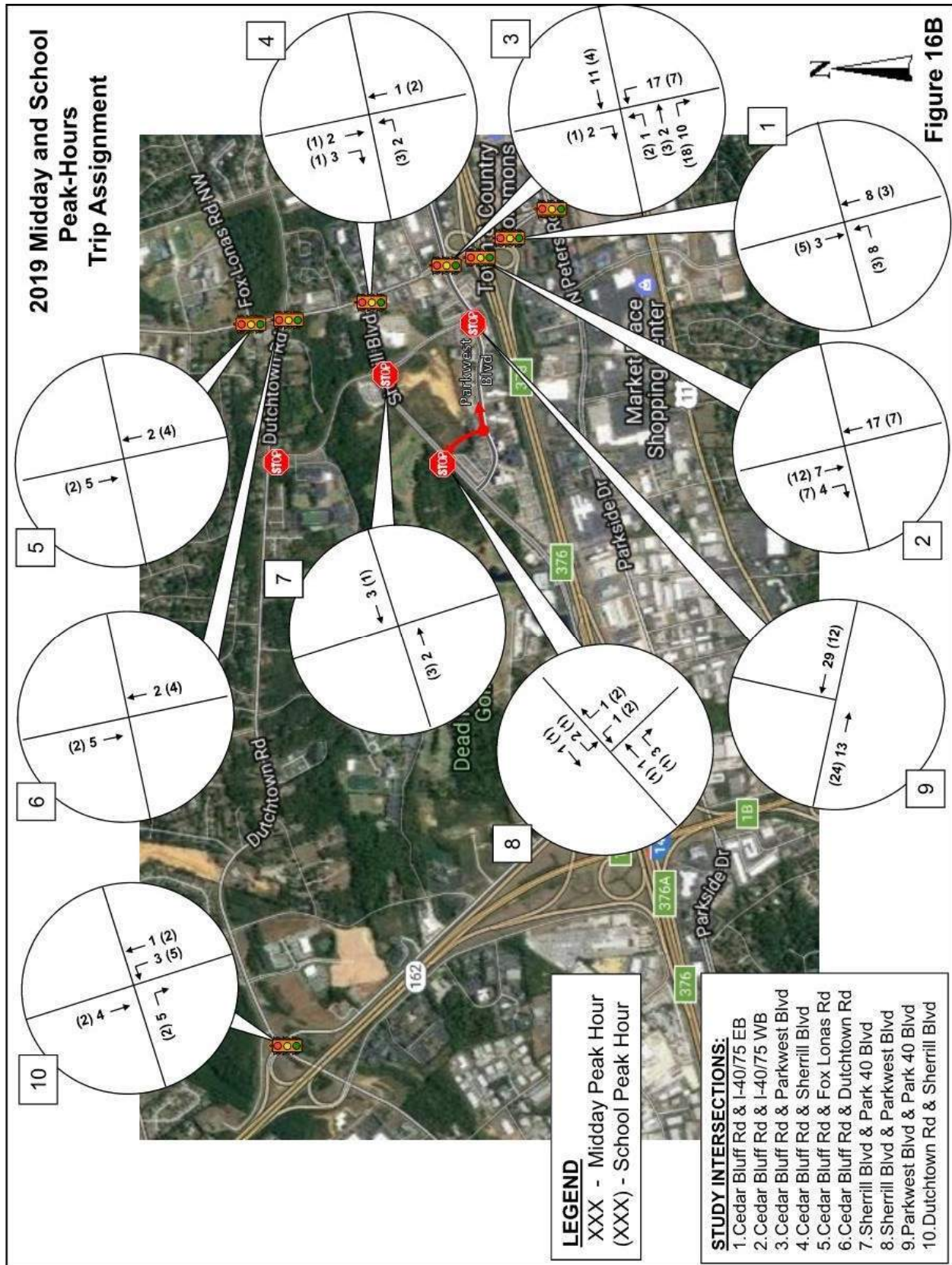
Multiplying the trip distribution and the trip generation, trips were assigned to the study intersections. **Figures 16A and 16B** illustrate the assigned trips for the 2019 initial development of 42 additional beds. **Figures 17A and 17B** illustrate the assigned trips for 2030 with the buildout of the hospital to include a total additional 182 beds.

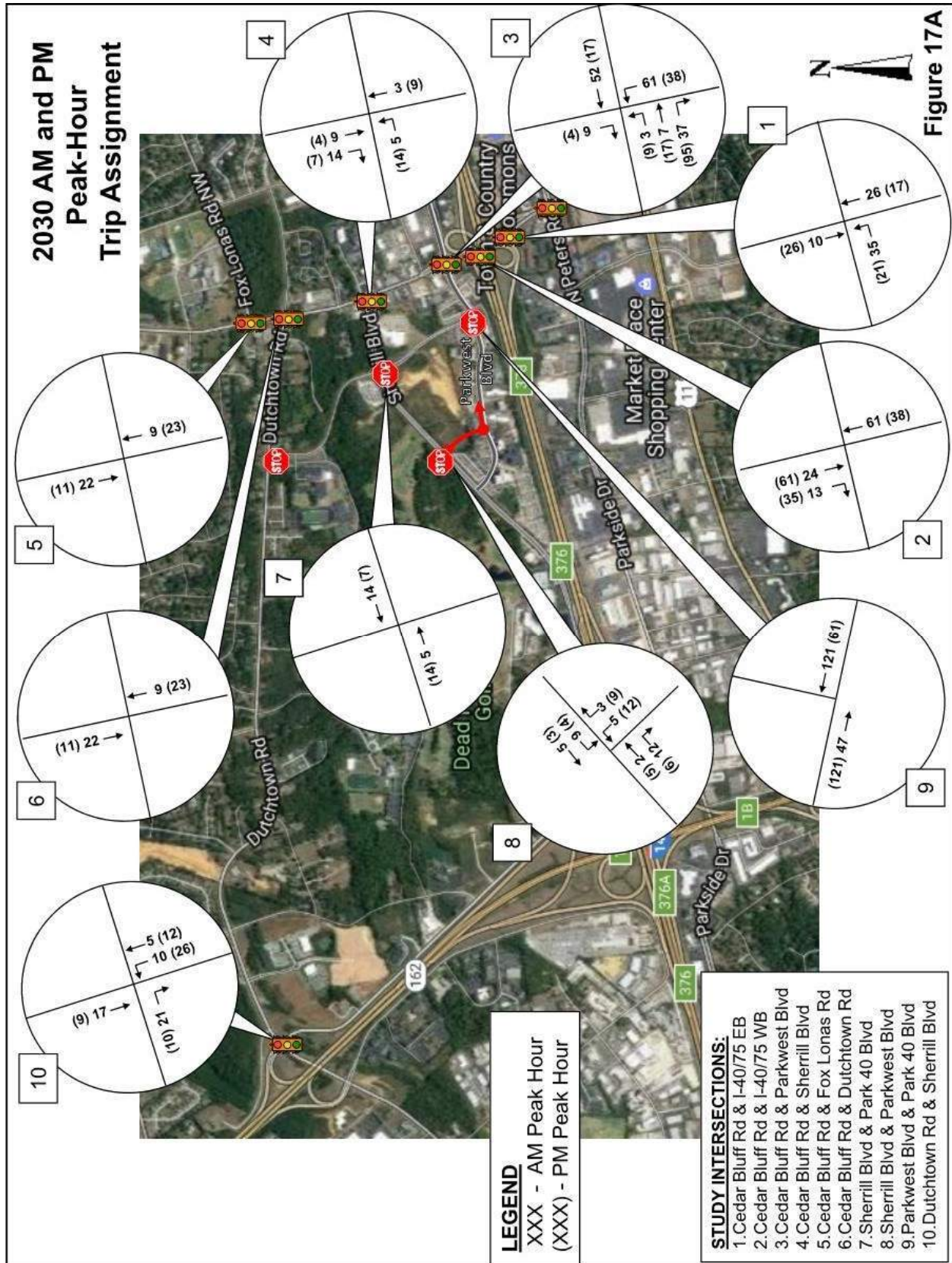
Projected 2019 and 2030 Traffic

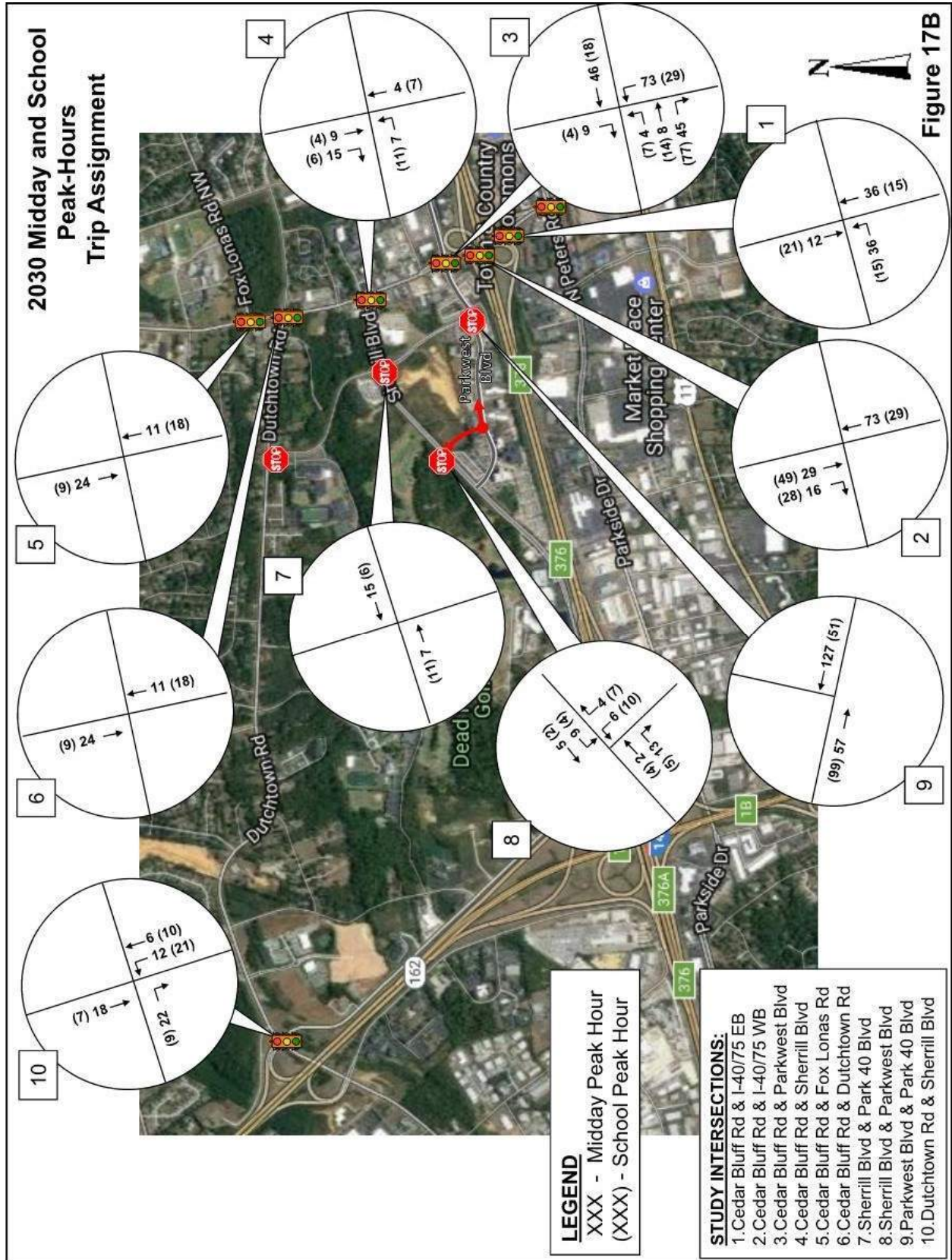
The addition of the trip assignment with the background traffic results in the projected traffic for the horizon years 2019 and 2030 with the planned expansion of the Parkside Hospital. **Figures 18A and 18B** illustrate the projected traffic for 2019 for the peak hours studied. For the projected 2030 traffic conditions, **Figures 19A and 19B** illustrate the peak hour traffic. Figures 18A, 18B, 19A, and 19B include the percent increase in intersection traffic resulting from the hospital expansion. Daily trip assignments and projected daily weekday traffic for 2019 and 2030 are illustrated in **Figures 20A and 20B**, respectively, for Parkwest Boulevard and Sherrill Boulevard.

With the projected traffic conditions, the initial phase of the hospital expansion of 42 beds had a negligible impact on the study intersections with increased hospital trips being less than 2-percent of the projected 2019 traffic for the study intersections with the exception of the Park 40 Boulevard intersection with Parkwest Boulevard which the trips generated by the 42-bed expansion is as much as 7-percent of the intersection traffic. Buildout of the planned hospital expansion of 182 beds has an increased impact on the study intersections, but is limited to not more than 3.5-percent for most of the study intersections. The greater impacts in 2030 are experienced for the Parkwest Boulevard intersections with Cedar Bluff Road and Sherrill Boulevard, but these impacts will not exceed 6-percent. The Parkside Hospital expansion, therefore, has a minimal impact on the study intersections.









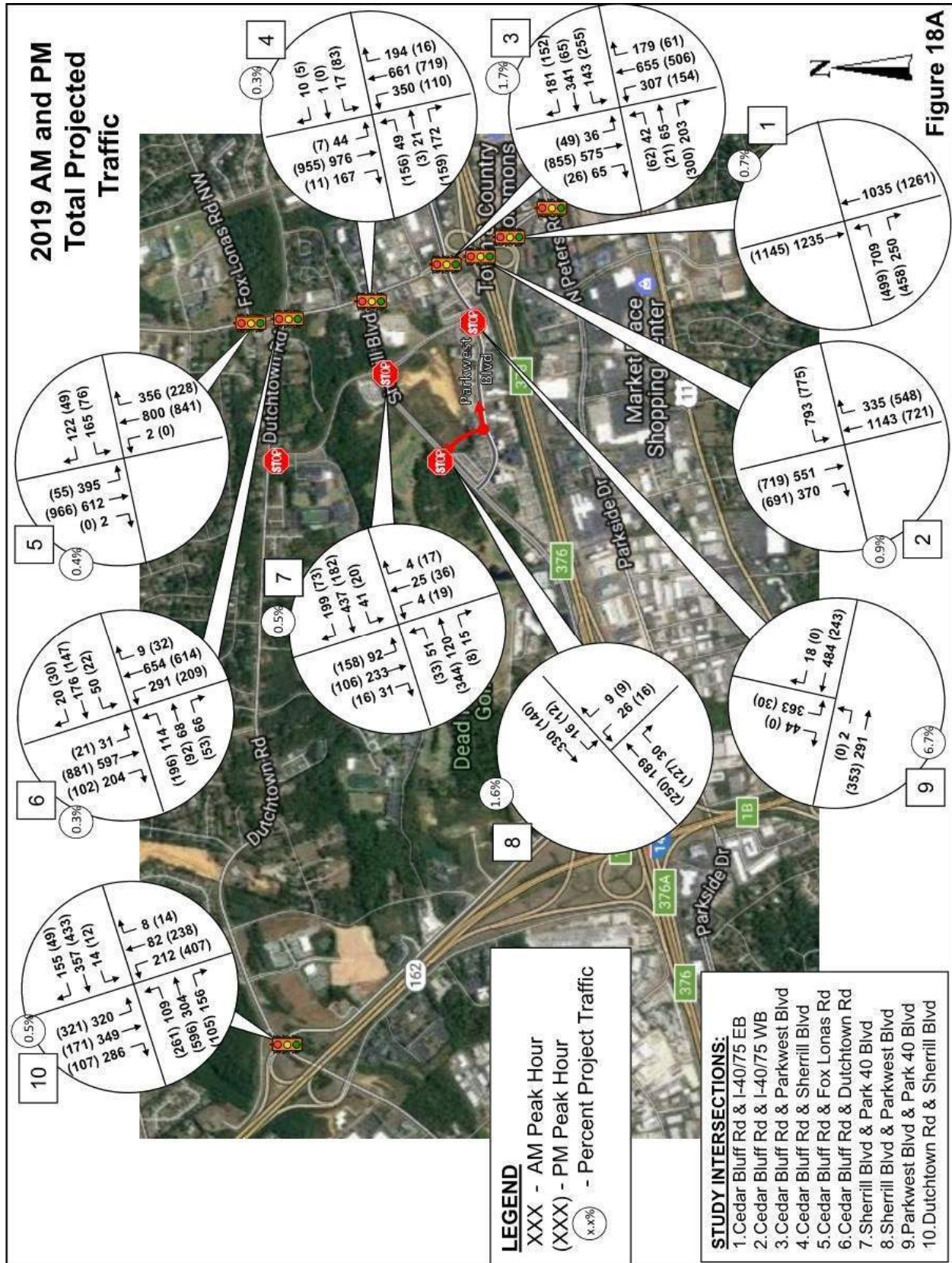
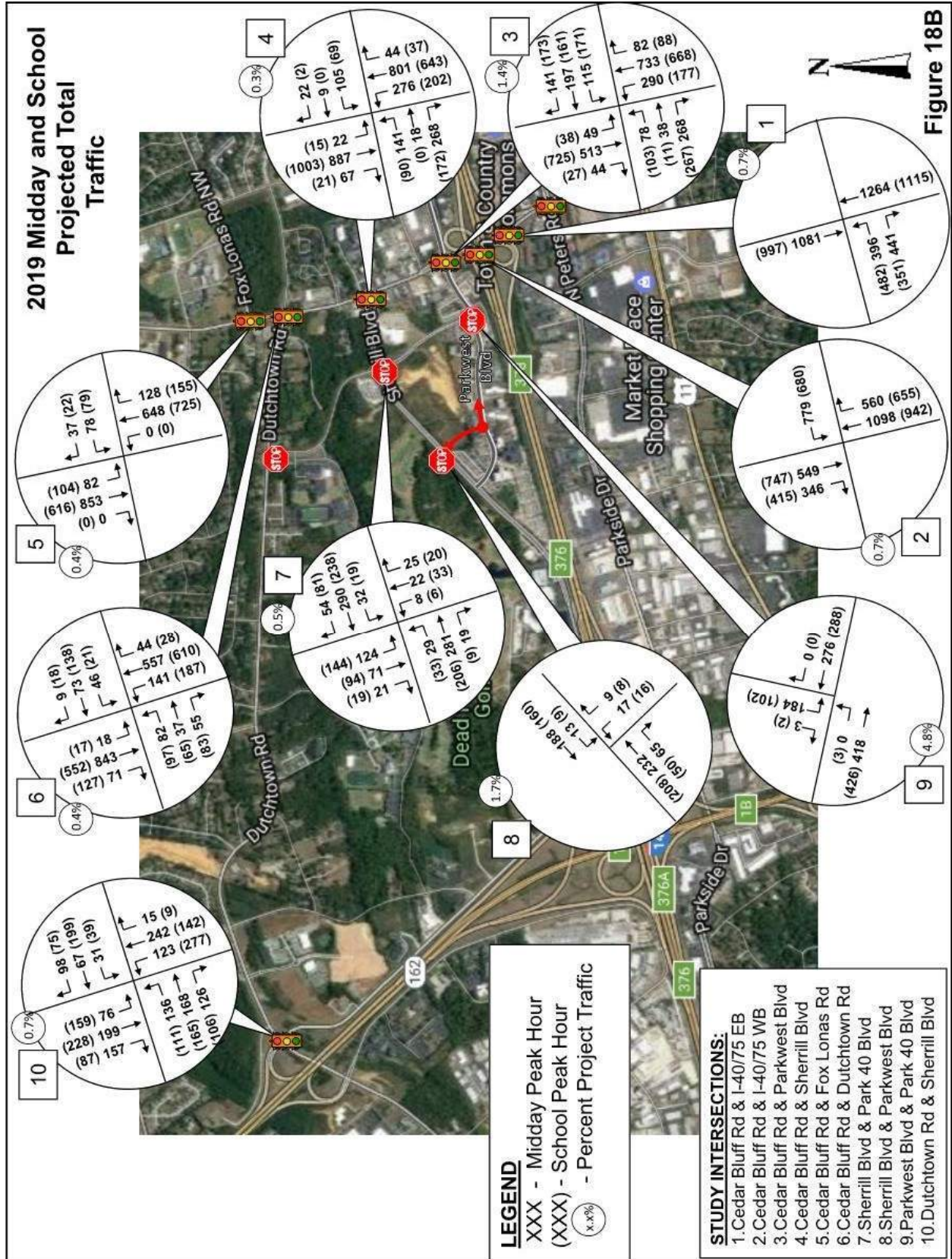
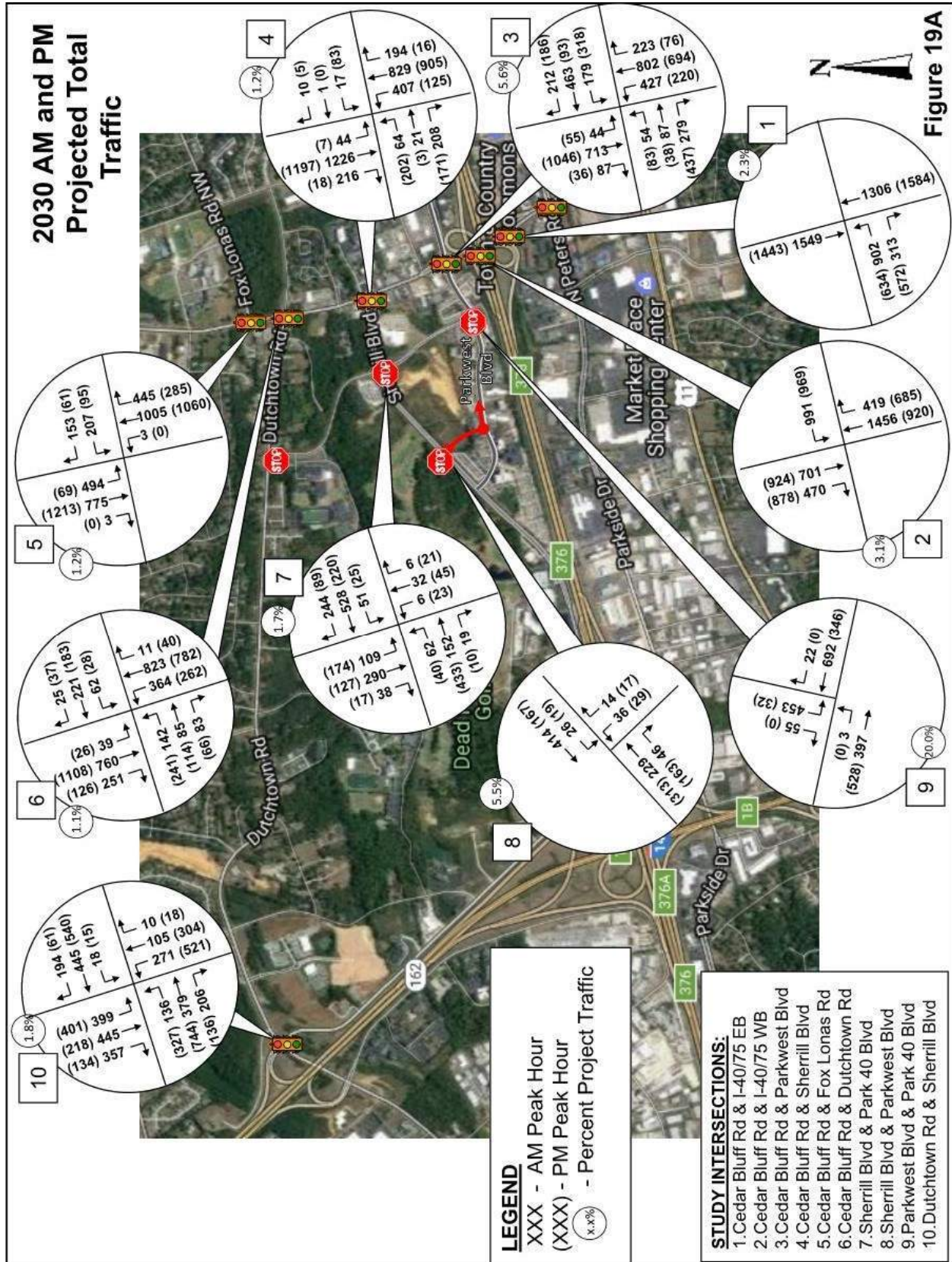


Figure 18A





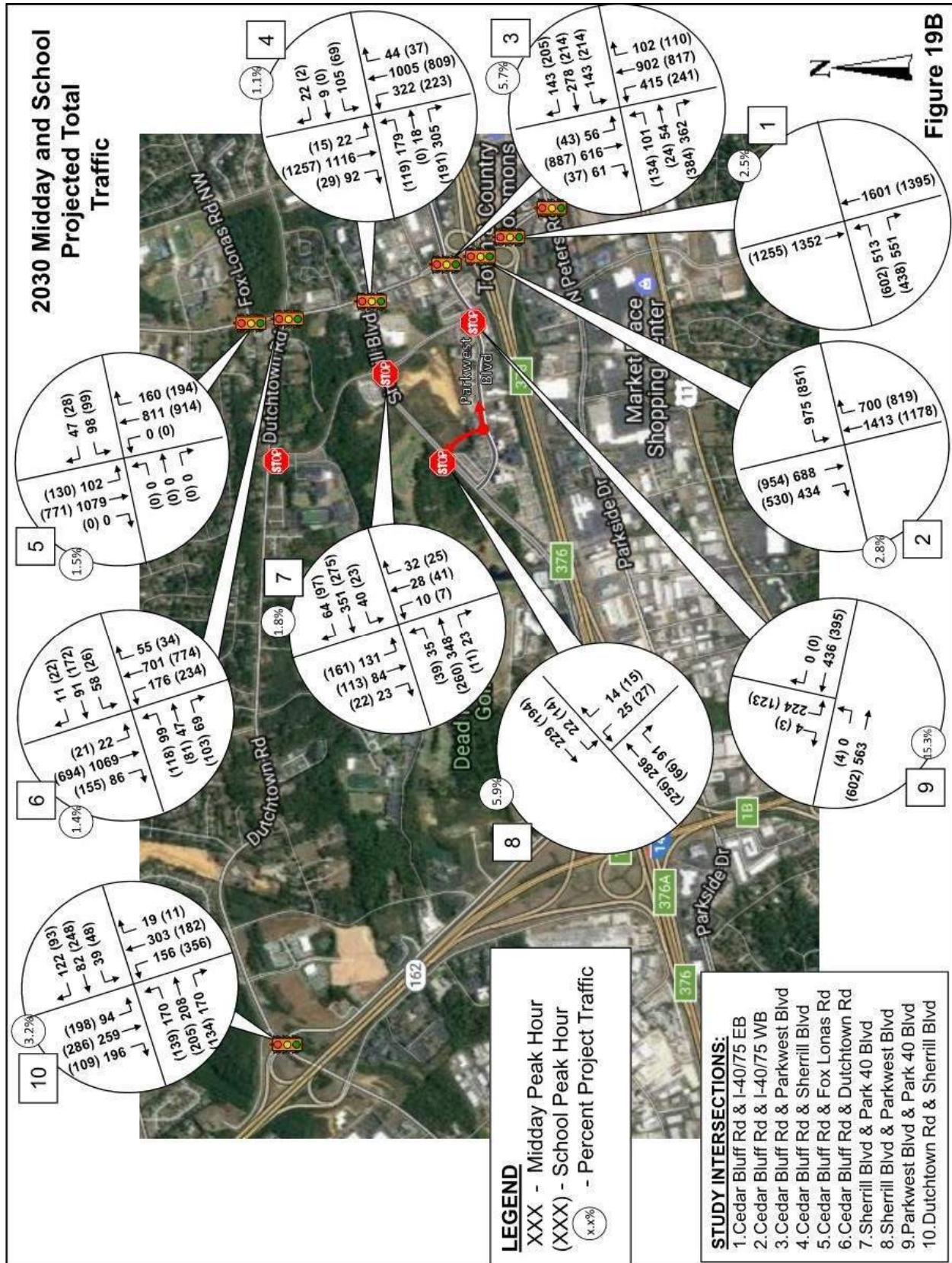


Figure 19B

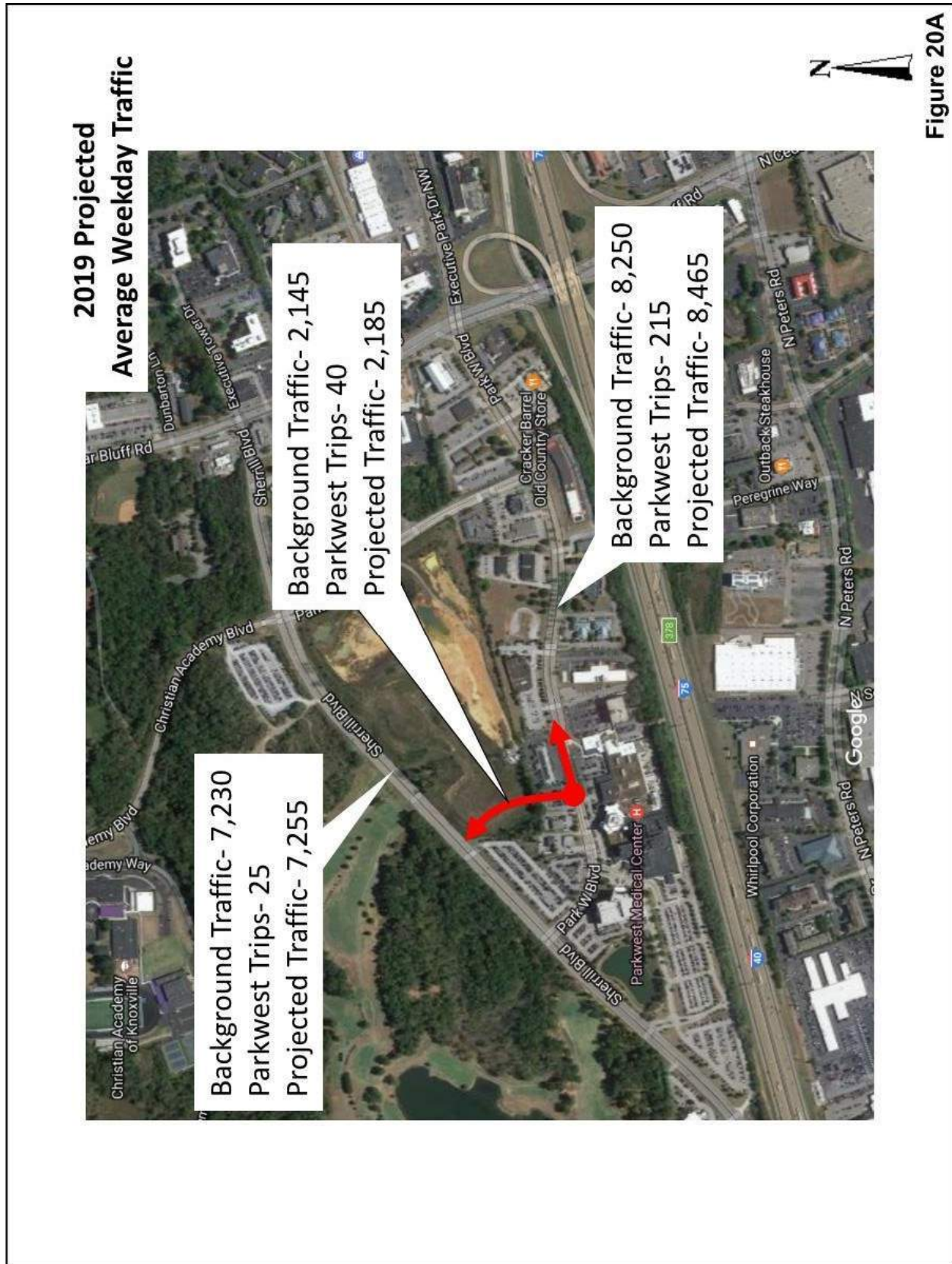
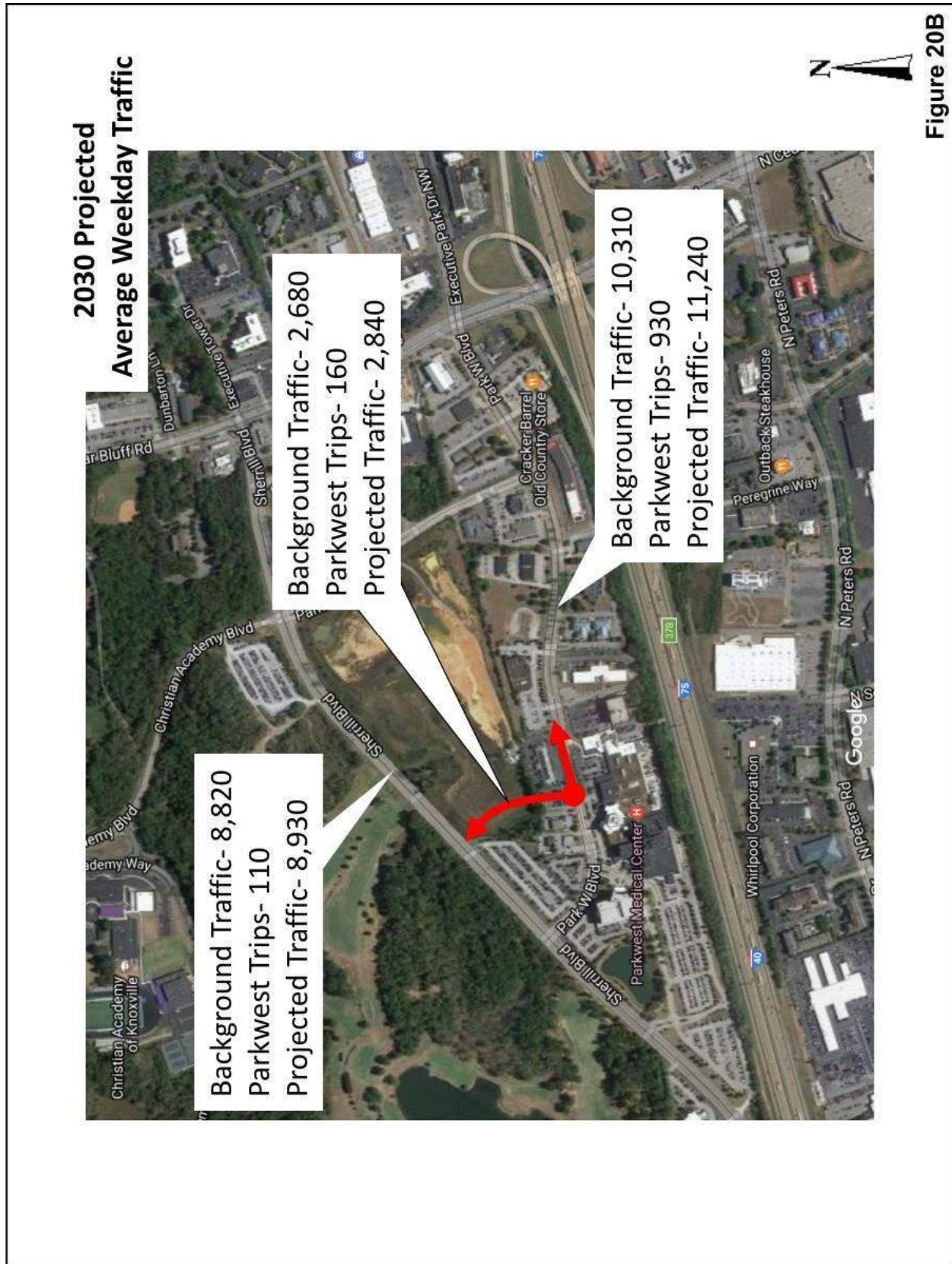


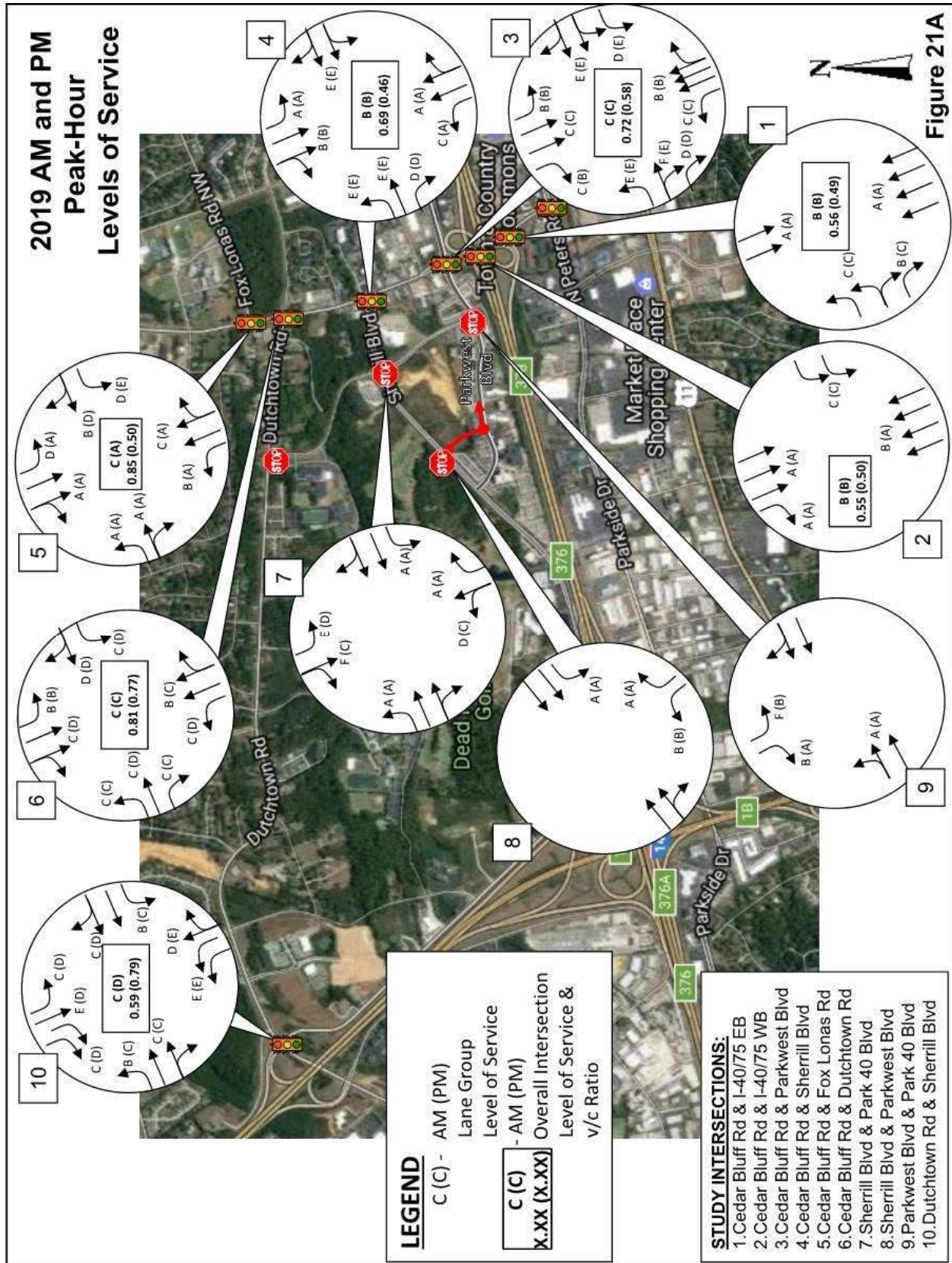
Figure 20A



Capacity and Level of Service with Medical Center Expansion

Figures 21A and 21B shows the LOS for the 2019 peak-hour traffic volumes with the Medical Center expansion and realignment of Parkwest Boulevard. Figures 22A and 22B illustrate the peak hour LOS for the projected 2030 traffic conditions.

With the exception of the Sherrill Boulevard intersection with Dutchtown Road and Park 40 Boulevard/Christian Academy, the study intersections operate at acceptable levels of service for the peak hours. For the intersection of Cedar Bluff Road and Parkwest Boulevard/Executive Park Drive, the approaches to Cedar Bluff Road operate at a LOS E during 2019 peak hours. These approaches and the northbound left-turn movement from Cedar Bluff Road to Parkwest Boulevard may begin to fail for the AM and PM peak hours in 2030. The large quantities of turning vehicles are above geometric capacity for this intersection. The most deficient traffic movements at this intersection are the northbound left turns and eastbound right turns.



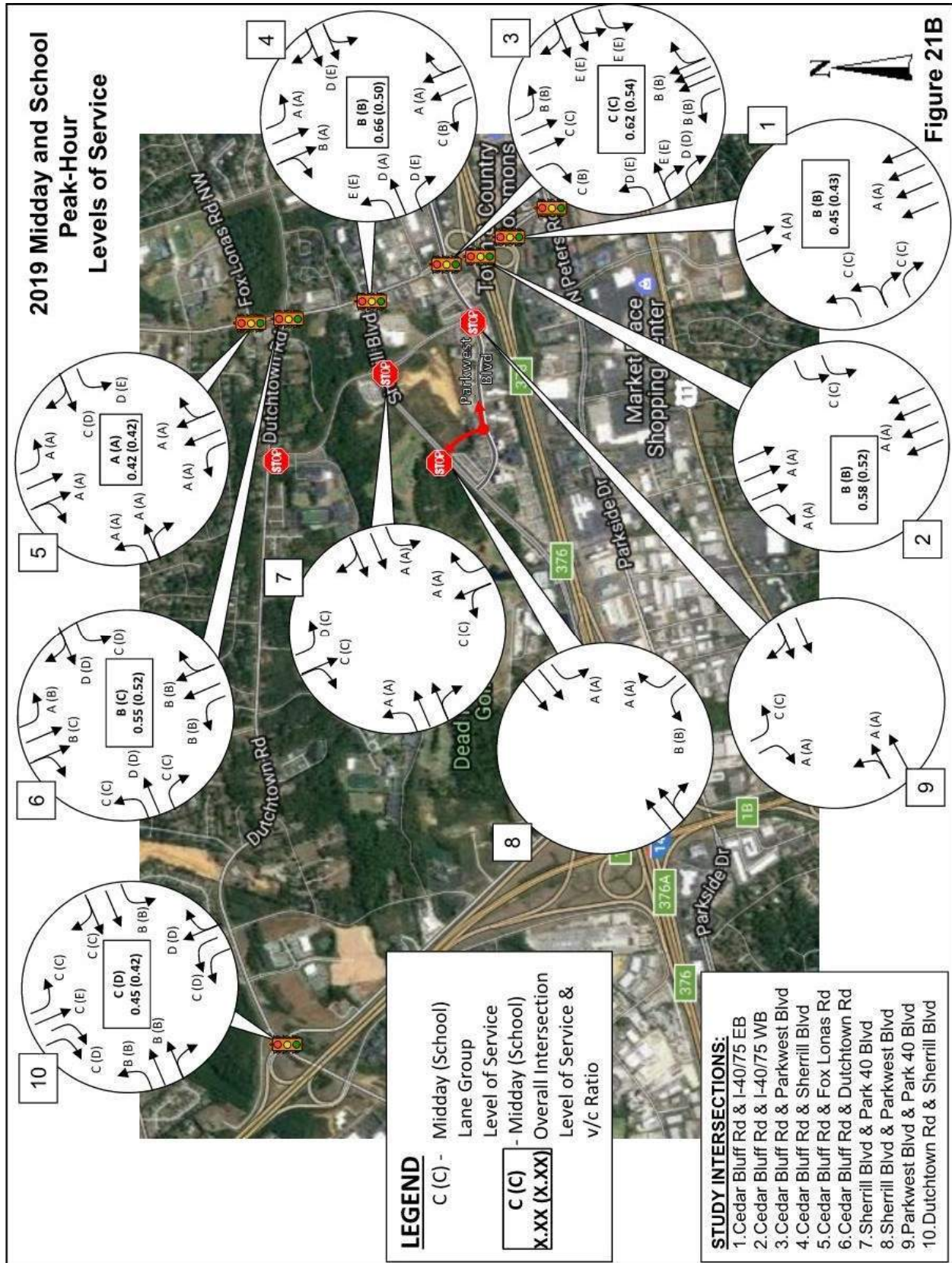


Figure 21B

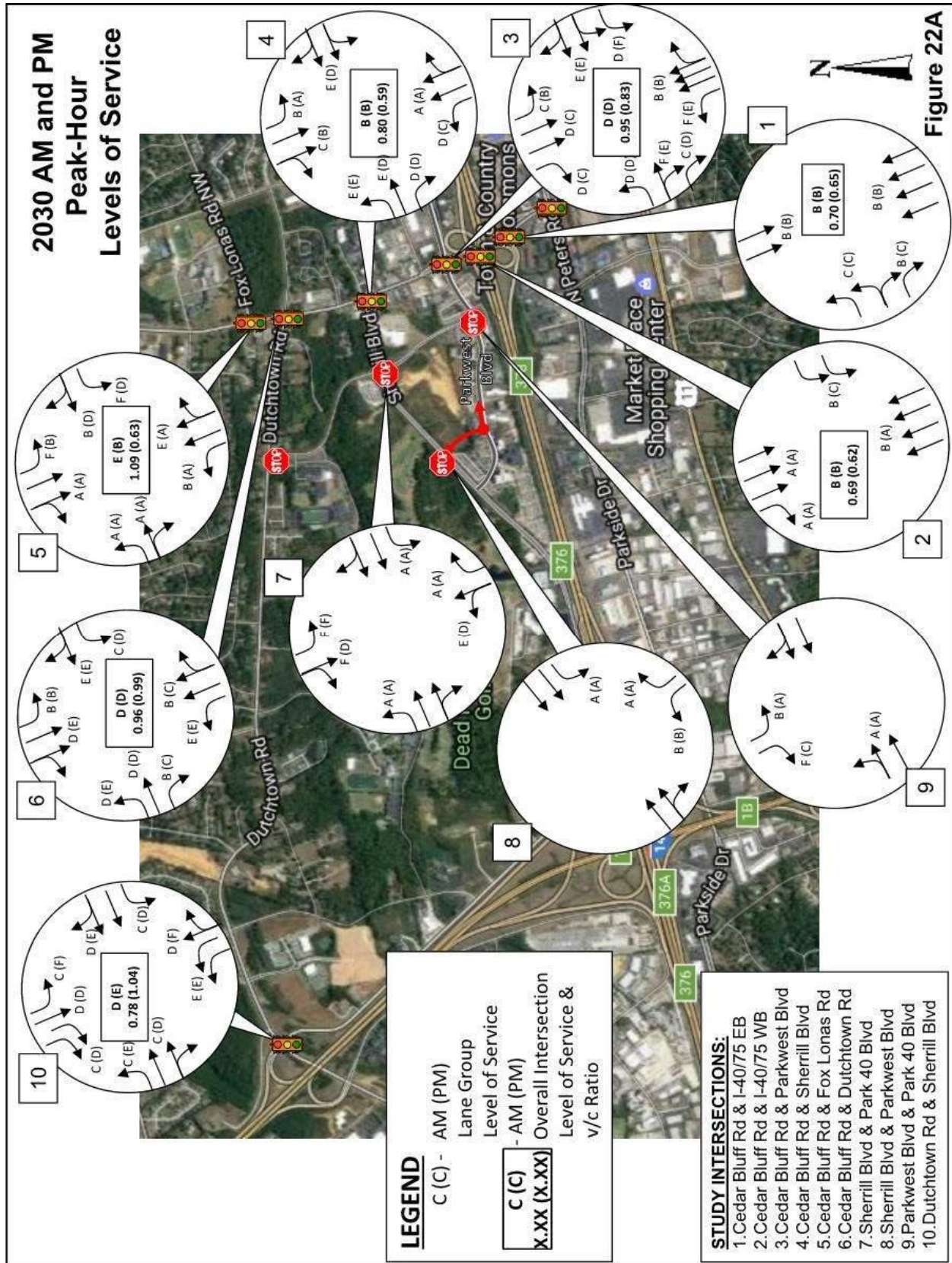
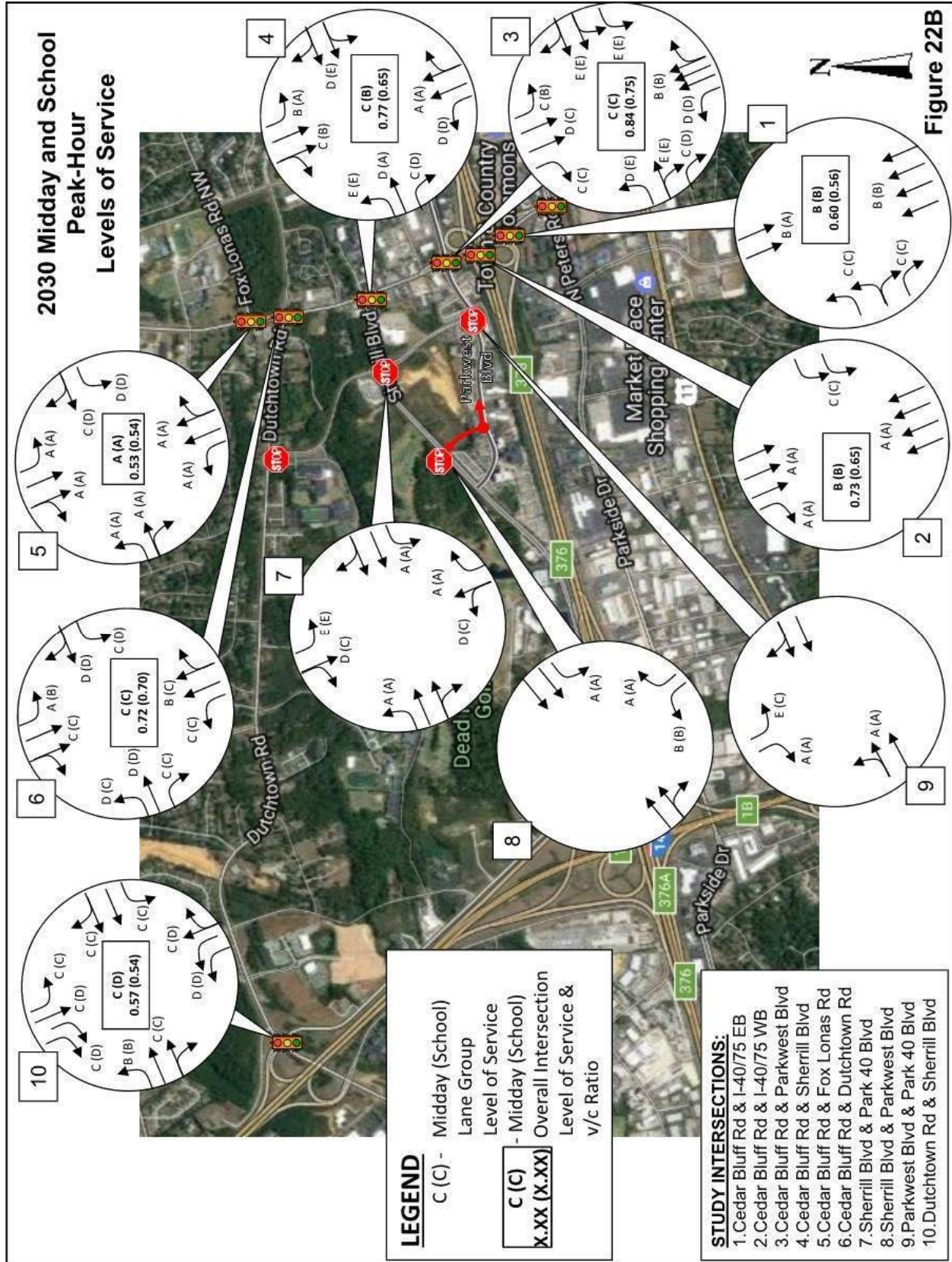


Figure 22A



Geometric Improvements

Geometric improvements for the study intersections were evaluated for 2019 and 2030 traffic conditions. Geometric improvements were considered for intersections experiencing unacceptable levels of service or intersections with poor levels of service for critical movements. Intersections identified for mitigation included the following:

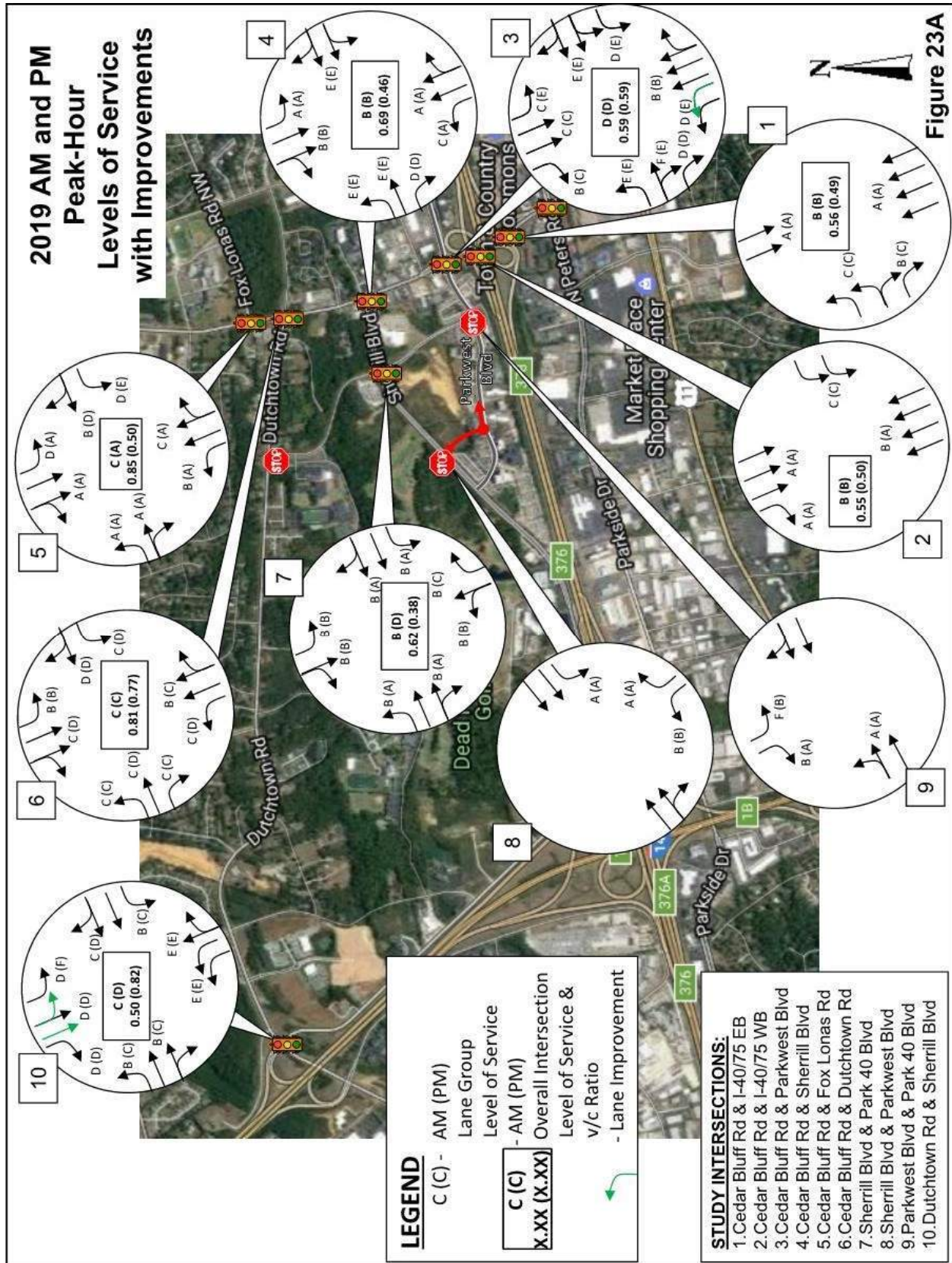
1. Northbound Pellissippi Parkway and Sherrill Boulevard at Dutchtown Road
2. Park 40 Boulevard at Sherrill Boulevard
3. Cedar Bluff Road at Parkwest Boulevard/Executive Park Drive

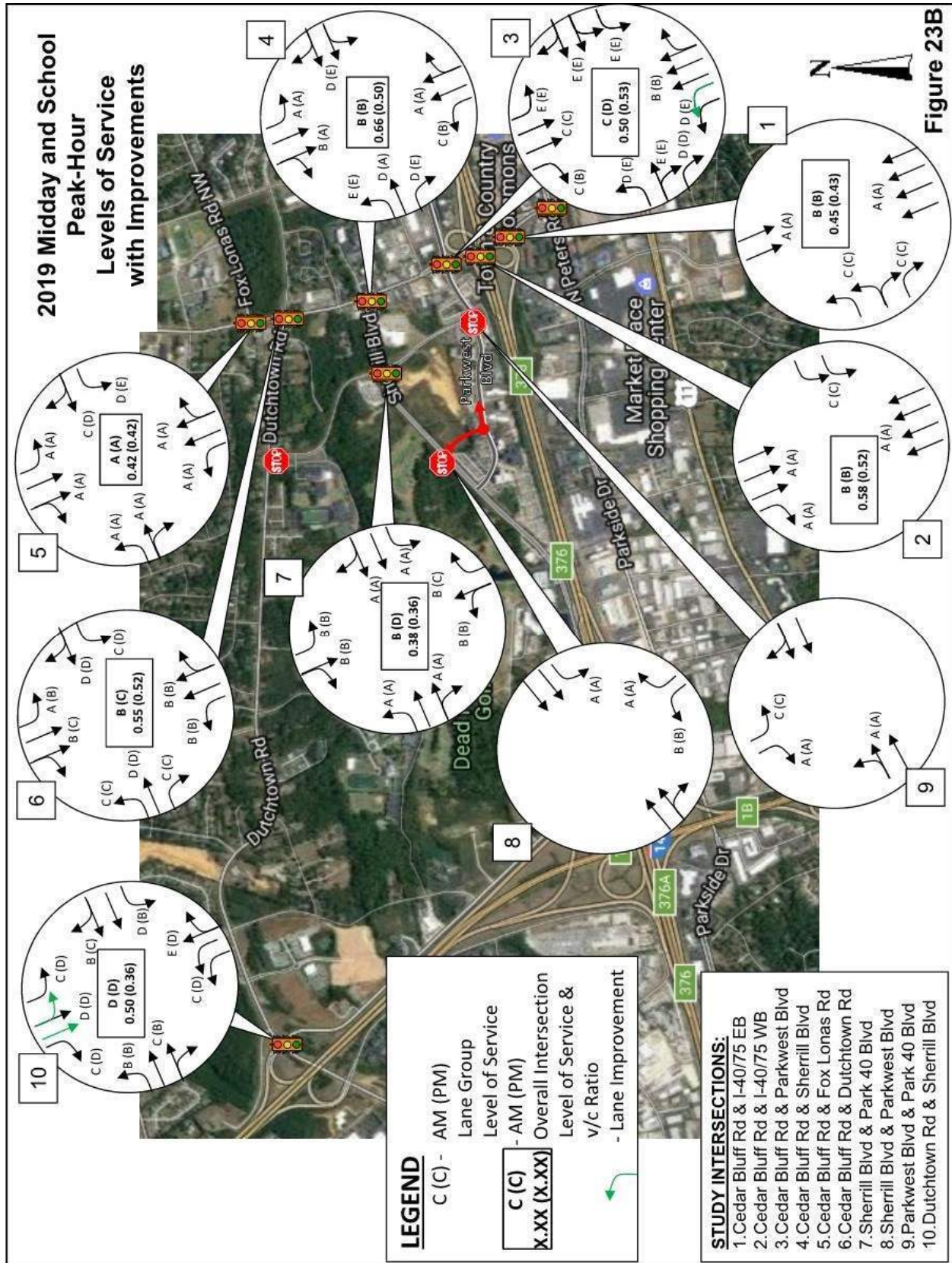
At the intersection of Cedar Bluff Road and Parkwest Boulevard/Executive Park Drive, TDOT has plans to add a second northbound left turn lane. The appendix includes a drawing of this proposed improvement. Note that this proposed improvement has not been funded. With the new geometric changes at this intersection and signal optimization, a better LOS can be achieved for the northbound left turn movement.

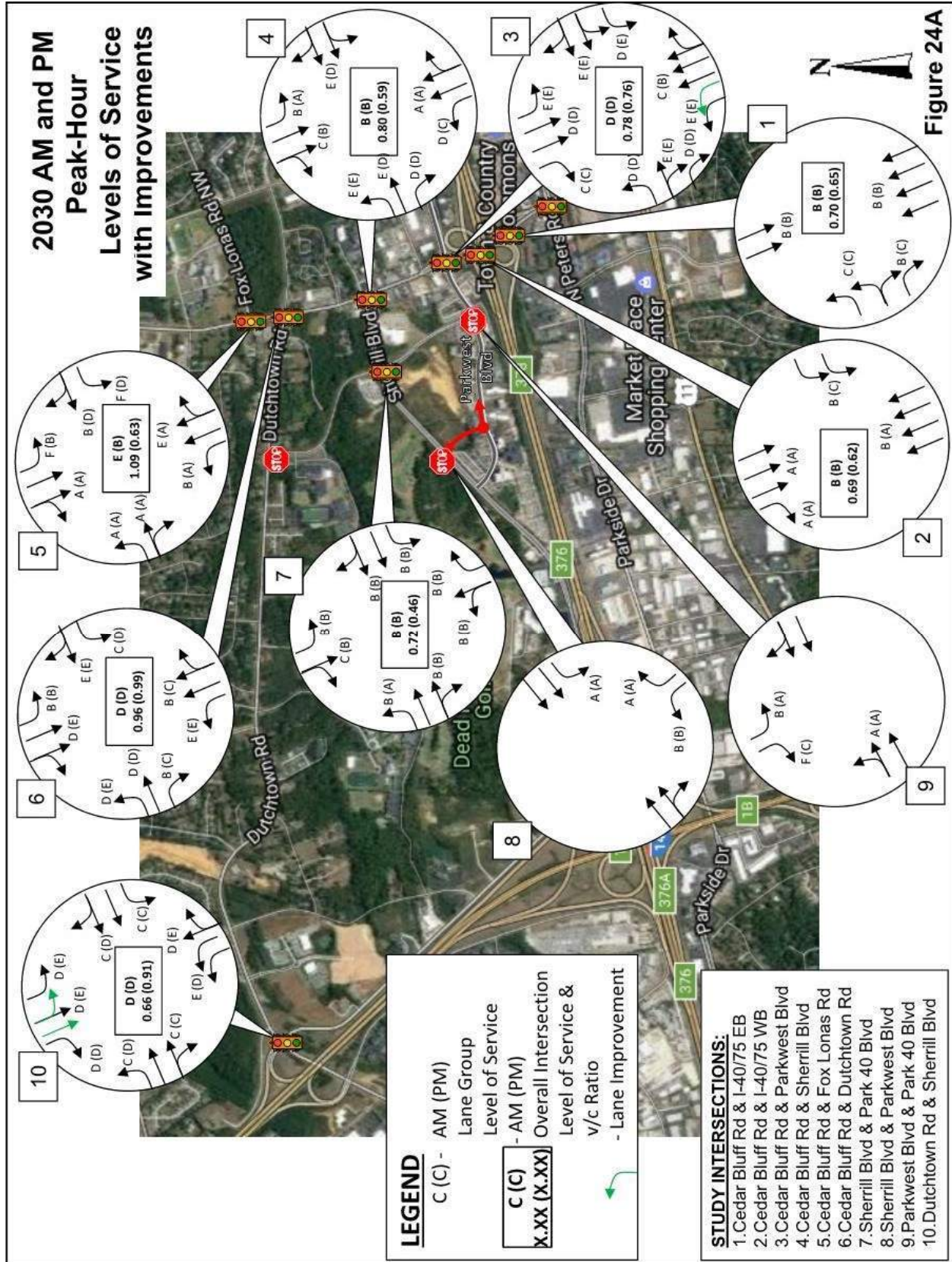
Analysis of the off-ramp improvements previously discussed for the intersection of Sherrill Boulevard at Dutchtown Road and the Pellissippi northbound off loop ramp (reallocating the lanes to one right turn lane, one through lane, a through-left, and an exclusive left turn lane) suggest that the intersection capacity and levels of service can be improved. A minimum LOS D can be achieved for both the 2019 and 2030 horizon years. The northbound off ramp improvements increased the available storage on the off-ramp, thereby reducing the adverse queues. The northbound left-turn movement, however, may fail during the PM peak hour in 2030. Thus, by 2030 the northbound Sherrill Boulevard approach may need to be widened to provide addition capacity and efficiency for the intersection. It is important to note that the reallocation of existing lanes on the Pellissippi Parkway off ramp, creating two through lanes, will necessitate adding a second departure lane on southbound Sherrill Boulevard to accommodate the two through lanes,

Figures 23A and 23B illustrate the 2019 conditions with improvements identified. For 2030 traffic conditions, **Figures 24A and 24B** illustrate the resulting levels of service with the

identified improvements. **Table 4** is a summary of the capacity and LOS for the analyses conducted for this study.







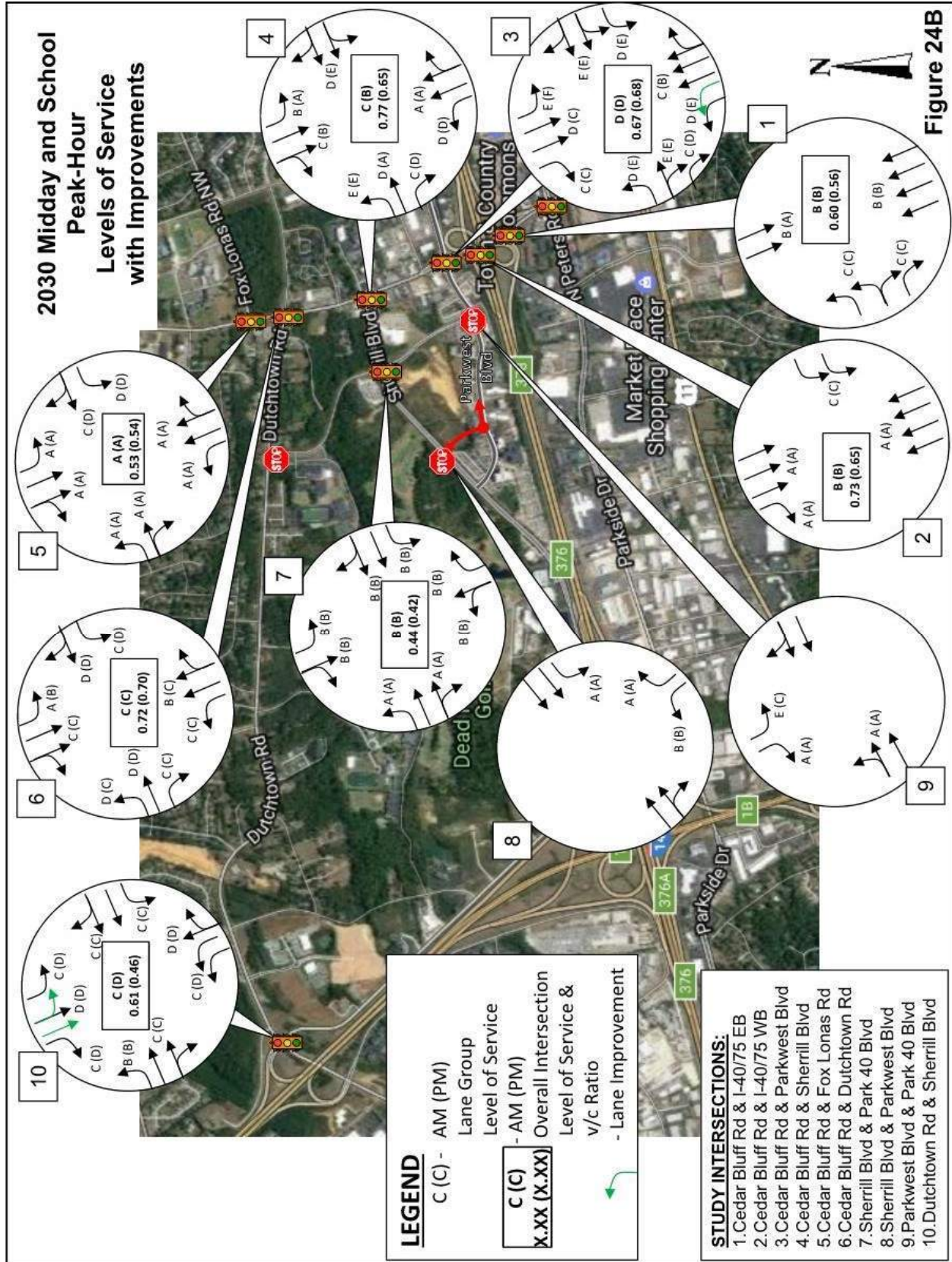


TABLE 4 CAPACITY AND LEVEL OF SERVICE SUMMARY

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	2017 EXISTING TRAFFIC			2019 BACKGROUND TRAFFIC			2019 PROJECTED TRAFFIC			2030 BACKGROUND TRAFFIC			2030 PROJECTED TRAFFIC		
			V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
Cedar Bluff Rd at I-40/75 EB Ramps	SIGNAL	AM PM	0.54 0.44	12.4 13.5	B B	0.55 0.49	12.4 13.9	B B	0.56 0.49	12.4 13.9	B B	0.69 0.64	13.9 15.0	B B	0.70 0.65	15.9 15.4	B B
Cedar Bluff Rd at I-40/75 WB Ramps	SIGNAL	AM PM	0.54 0.45	12.9 13.0	B B	0.55 0.49	13.0 12.8	B B	0.55 0.50	12.9 12.6	B B	0.68 0.62	14.0 13.6	B B	0.69 0.62	12.2 13.0	B B
Cedar Bluff Rd at Parkwest Blvd	SIGNAL	AM PM	0.69 0.52	33.3 34.3	C C	0.70 0.56	32.7 33.6	C C	0.72 0.58	33.8 34.7	C C	0.87 0.72	40.8 38.2	D D	0.95 0.83	46.8 43.4	D D
Mitigation Add Northbound Left Turn Lane	SIGNAL	AM PM				0.59 0.59	38.8 38.5	D D							0.78 0.76	43.0 44.6	D D
Cedar Bluff Rd at Sherrill Blvd	SIGNAL	AM PM	0.66 0.50	12.6 15.6	B B	0.68 0.46	13.6 16.9	B B	0.69 0.46	13.7 17.0	B B	0.80 0.57	18.3 19.0	B B	0.80 0.59	19.2 20.0	B B
Cedar Bluff Rd at Fox Lomas Rd	SIGNAL	AM PM	1.14 0.46	58.2 7.8	E A	0.85 0.50	27.8 7.9	C A	0.85 0.00	27.8 7.9	C A	1.11 0.61	57.6 9.2	E A	1.09 0.63	58.1 10.0	E A
Cedar Bluff Rd at Dutchtown Rd	SIGNAL	AM PM	0.86 0.88	32.0 38.3	C D	0.81 0.77	27.4 32.5	C C	0.81 0.77	27.4 32.5	C C	0.96 0.98	38.8 47.4	D D	0.96 0.99	41.9 47.8	D D
Sherrill Blvd at Park 40 Blvd	STOP NB/SBL	AM PM	0.25 / 0.37 0.28 / 0.33	25.3 / 29.0 20.7 / 21.2	D / D C / C	0.47 / 0.48 0.21 / 0.50	28.1 / 36.8 21.0 / 25.6	D / E C / D	0.47 / 0.48 0.21 / 0.50	26.2 / 37.2 21.2 / 25.9	D / E C / D	0.33 / 0.85 0.38 / 0.73	441.0 / 104.5 32.1 / 48.0	F / F D / E	0.34 / 0.88 0.38 / 0.75	42.5 / 111.1 33.9 / 53.0	E / F D / F
Mitigation Signalization	SIGNAL	AM PM				0.62 0.39	13.7 11.7	B B							0.72 0.46	17.2 12.5	B B
Sherrill Blvd at Parkwest Blvd	STOP NBL	AM PM	0.40 0.22	20.6 14.6	C B	0.05 0.03	11.9 11.8	B B	0.05 0.03	12.0 11.9	B B	0.07 0.04	13.1 13.0	B B	0.09 0.07	13.7 13.7	B B
Parkwest Blvd at Park 40 Blvd	STOP SBL	AM PM	1.18 0.07	137.2 13.4	F B	1.00 0.06	71.4 11.9	F B	1.06 0.06	96.2 12.2	F B	1.60 0.07	313.9 13.2	F B	2.02 0.09	505.0 15.0	F B
Dutchtown Rd at Sherrill Blvd	SIGNAL	AM PM	0.64 0.90	35.8 44.1	D D	0.59 0.79	34.6 41.2	C D	0.59 0.79	34.8 41.6	C D	0.78 1.00	36.6 57.2	D E	0.78 1.04	36.9 57.7	D E
Mitigation Signal Southbound Shared Dual Left Turn with Split Phase	SIGNAL	AM PM													0.66 0.91	36.9 49.3	D D

Note: Average vehicle delay estimated in seconds. STOP control analyses presented by minor approach.

**TABLE 4
CAPACITY AND LEVEL OF SERVICE SUMMARY
(continued)**

INTERSECTION	TRAFFIC CONTROL	PEAK PERIOD	2017 EXISTING TRAFFIC			2019 BACKGROUND TRAFFIC			2019 PROJECTED TRAFFIC			2030 BACKGROUND TRAFFIC			2030 PROJECTED TRAFFIC		
			V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS	V/C	DELAY	LOS
Cedar Bluff Rd at I-40/75 EB Ramps	SIGNAL	MID SCHOOL	0.43	11.0	B	0.45	11.2	B	0.45	11.2	B	0.59	13.1	B	0.60	13.4	B
Cedar Bluff Rd at I-40/75 WB Ramps	SIGNAL	MID SCHOOL	0.43	13.2	B	0.43	12.7	B	0.43	12.7	B	0.55	14.4	B	0.56	14.1	B
Cedar Bluff Rd at Parkwest Blvd	SIGNAL	MID SCHOOL	0.50	13.0	B	0.57	11.3	B	0.58	11.2	B	0.72	12.0	B	0.73	11.8	B
Cedar Bluff Rd at Parkwest Blvd	SIGNAL	MID SCHOOL	0.48	10.7	B	0.52	11.8	B	0.52	11.7	B	0.65	12.3	B	0.65	12.6	B
Cedar Bluff Rd at Parkwest Blvd	SIGNAL	MID SCHOOL	0.61	29.6	C	0.58	28.9	C	0.62	29.9	C	0.74	33.3	C	0.84	38.4	D
Mitigation Add Northbound Left Turn Lane	SIGNAL	MID SCHOOL	0.56	34.1	C	0.52	32.4	C	0.54	33.0	C	0.69	36.7	D	0.75	40.3	D
Cedar Bluff Rd at Sherrill Blvd	SIGNAL	MID SCHOOL	0.45	15.9	B	0.65	19.0	B	0.66	19.2	B	0.75	24.0	C	0.77	24.3	C
Cedar Bluff Rd at Fox Lomas Rd	SIGNAL	MID SCHOOL	0.44	13.2	B	0.50	14.4	B	0.50	14.5	B	0.64	18.0	B	0.65	18.8	B
Cedar Bluff Rd at Dutchtown Rd	SIGNAL	MID SCHOOL	0.39	7.3	A	0.42	7.0	A	0.42	7.0	A	0.51	7.7	A	0.53	7.8	A
Sherrill Blvd at Park 40 Blvd	SIGNAL	MID SCHOOL	0.48	9.7	A	0.42	7.5	A	0.42	7.5	A	0.52	8.6	A	0.54	8.5	A
Sherrill Blvd at Park 40 Blvd	SIGNAL	MID SCHOOL	0.52	19.1	B	0.55	18.6	B	0.55	18.6	B	0.71	19.9	B	0.72	21.4	C
Sherrill Blvd at Park 40 Blvd	SIGNAL	MID SCHOOL	0.53	26.3	C	0.51	24.7	C	0.52	24.6	C	0.70	26.4	C	0.70	27.1	C
Sherrill Blvd at Park 40 Blvd	STOP	MID SCHOOL	0.09 / 0.09	16.8 / 16.7	C / C	0.42 / 0.45	19.5 / 26.5	C / D	0.12 / 0.45	19.6 / 26.7	C / D	0.19 / 0.63	25.8 / 44.6	D / E	0.20 / 0.65	26.7 / 48.1	D / E
Mitigation Signalization	NBL/SBL	SCHOOL	0.13 / 0.19	14.3 / 15.1	B / C	0.12 / 0.44	16.9 / 23.1	C / C	0.13 / 0.45	17.0 / 23.2	C / C	0.19 / 0.61	20.5 / 35.9	C / E	0.19 / 0.63	21.1 / 37.8	C / E
Sherrill Blvd at Parkwest Blvd	SIGNAL	MID SCHOOL	0.30	17.1	C	0.03	11.6	B	0.38	10.7	B	0.36	11.6	B	0.44	11.6	B
Parkwest Blvd at Park 40 Blvd	STOP	MID SCHOOL	0.16	12.3	B	0.02	11.0	B	0.36	11.6	B	0.36	11.6	B	0.42	12.3	B
Dutchtown Rd at Sherrill Blvd	STOP	MID SCHOOL	0.64	25.0	C	0.39	16.6	C	0.03	11.7	B	0.04	12.6	B	0.06	13.2	B
Dutchtown Rd at Sherrill Blvd	STOP	MID SCHOOL	0.39	18.5	C	0.23	14.7	B	0.03	11.1	B	0.03	11.8	B	0.05	12.2	B
Dutchtown Rd at Sherrill Blvd	SIGNAL	MID SCHOOL	0.47	27.0	C	0.45	27.8	C	0.42	17.7	C	0.57	24.1	C	0.73	40.4	E
Mitigation Southbound Shared Dual Left Turn with Split Phase	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.24	15.2	C	0.54	18.6	C	0.40	22.4	C
	SIGNAL	MID SCHOOL	0.47	27.0	C	0.45	27.8	C	0.45	26.2	C	0.56	25.0	C	0.57	25.5	C
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0.53	37.0	D	0.56	37.5	D
	SIGNAL	MID SCHOOL	0.66	62.6	E	0.41	36.5	D	0.42	36.6	D	0					

Parkwest Hospital Construction

During construction of the hospital expansion, a temporary road will be provided for the part of Parkwest Boulevard impacted by the construction. **Figure 25** illustrates this temporary road plan. Parkwest Boulevard, therefore will not be closed and will continue to provide a connection between Cedar Bluff Road near the I-40/75 interchange to Sherrill Boulevard.

The turning movements at the intersection of Sherrill Boulevard and Parkwest Boulevard represent both local traffic destined or originating from the hospital and surrounding medical offices and through traffic on Parkwest Boulevard. At the intersection of Sherrill Boulevard at Parkwest Boulevard, the AM peak hour volume turning between the two streets is 395 (see Figure 6A), representing the highest peak hour volume throughout the day. An O-D (Origin-Destination) study conducted for this study (see Appendix for details) found much of the traffic on Parkwest Boulevard is associated with the medical facilities and is not through traffic.

During the AM peak hour, less than 10-percent of the traffic from Sherrill Boulevard, west of Parkwest Boulevard, to Cedar Bluff Road and the Park 40 vicinity, near the I-40/75 interchange (eastbound), uses Parkwest Boulevard. From Cedar Bluff Road and the Park 40 vicinity to Sherrill Boulevard (westbound), approximately 18-percent use Parkwest Boulevard. Through traffic during the AM peak hour is approximately 46 vehicles, or less than 8-percent of the morning peak hour traffic.

The eastbound through traffic, from Sherrill Boulevard to Cedar Bluff Road, during the PM peak hour, does increase as traffic will access the interchange using Parkwest Boulevard. This eastbound movement from Sherrill Boulevard to Parkwest Boulevard is approximately 62-percent of the traffic turning right-from Sherrill Boulevard to Parkwest Boulevard. The westbound through traffic from Cedar Bluff Road to Sherrill Boulevard, however, is less than 10-percent. The through volume on Parkwest Boulevard is approximately 120 vehicles or 17-percent of the traffic on Parkwest Boulevard.

**Temporary
 Parkwest Boulevard
 Relocation**

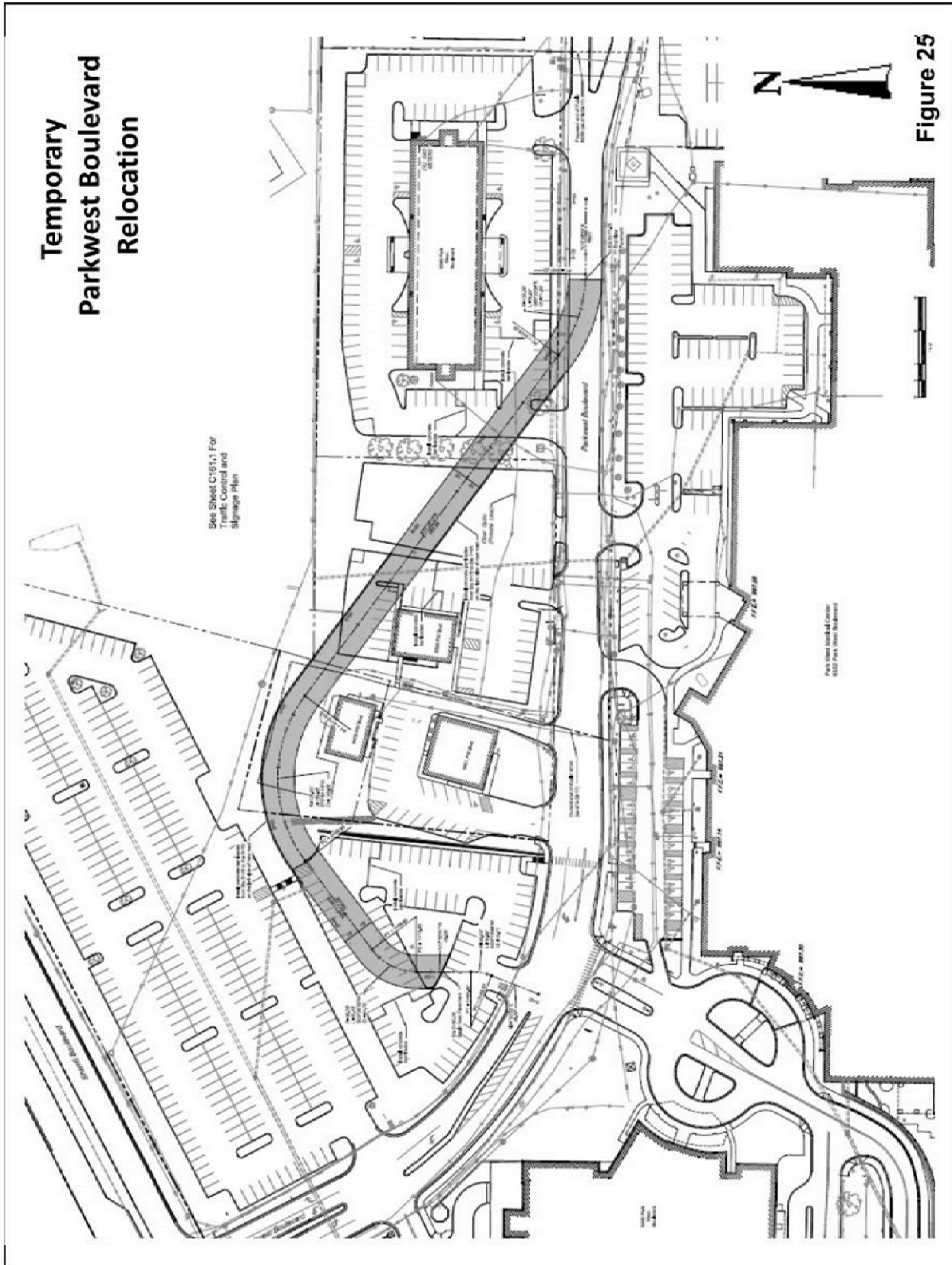


Figure 25

Figure 26 illustrates the daily and peak hour through traffic using Parkwest Boulevard. Throughout the day, the through traffic is approximately 26-percent of the total traffic using Parkwest Boulevard. Therefore, more than 70-percent of the traffic on Parkwest Boulevard is hospital or related medical office traffic. During construction and because of the temporary circuitous road, some of the through traffic may divert to Sherrill Boulevard via Park 40 Boulevard or Cedar Bluff Road. The impact, however, should not be significant and can be managed reasonably well.

During the execution of this study, there was discussion regarding the need for a temporary traffic signal at the intersection of Sherrill Boulevard at Park 40 Boulevard/Christian Academy Boulevard. This discussion was in response to the initial proposal to close a section of Parkwest Boulevard during construction of the new bed tower. However, since Parkwest Boulevard will remain open, albeit on a temporary road, the need to install a temporary traffic signal at this intersection has been eliminated.

**Parkwest Boulevard
 Through Traffic**

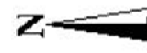
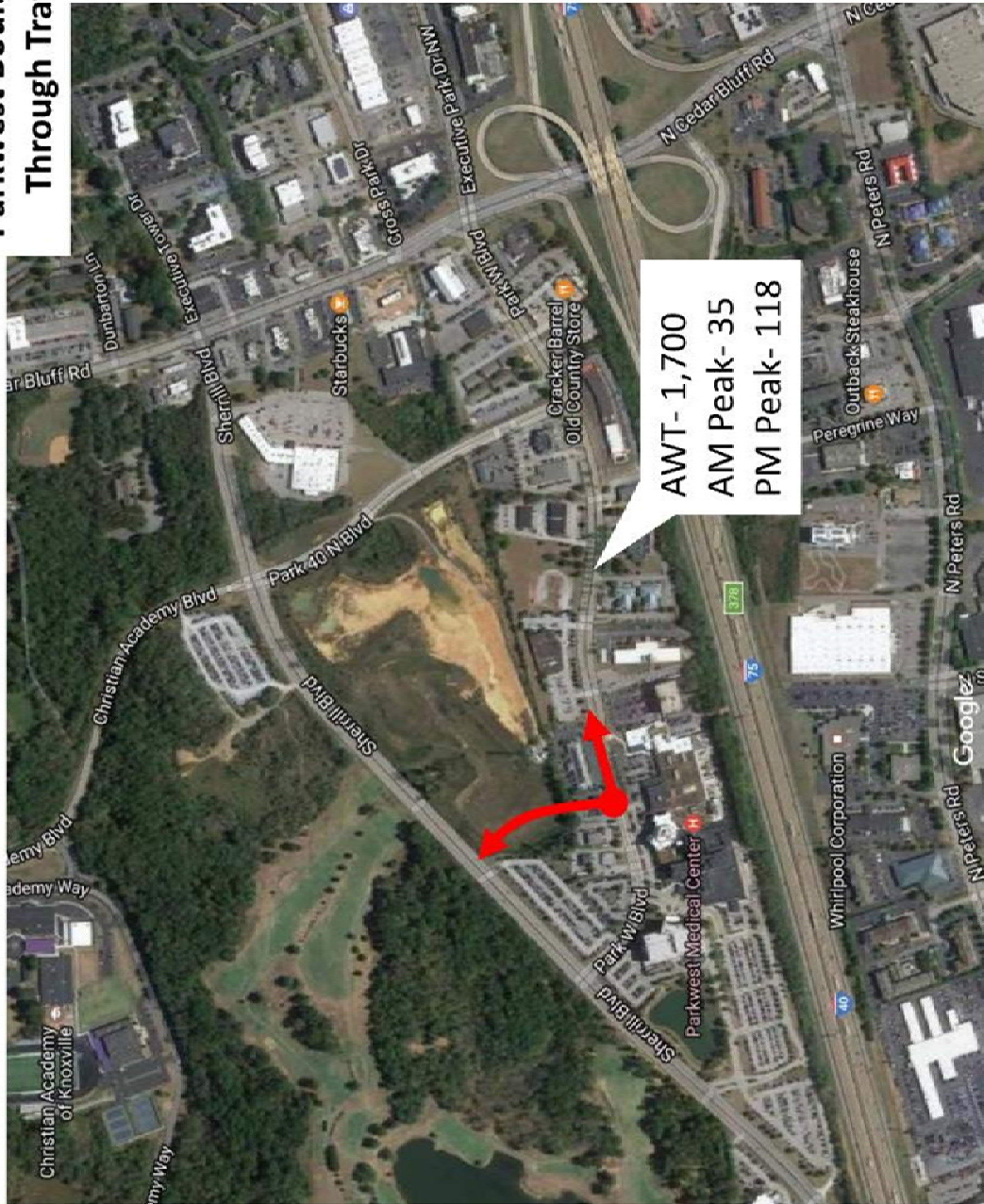


Figure 26

Summary and Conclusion

Parkwest Regional Medical Center plans an expansion to add another 182 beds with an initial phase of 42 beds. The proposed expansion would be located north of the existing hospital facility and encroach upon the existing Parkwest Boulevard.

Parkwest Regional Medical Center is requesting that the City of Knoxville consider allowing realignment of Parkwest Boulevard beginning at approximately the Physician's Office Building and intersecting with Sherrill Boulevard northeast of the existing employee parking facility. This would allow the new facilities to be constructed closer to the existing hospital main entrance. The existing intersection of Parkwest Boulevard and Sherrill Boulevard would remain in place as a hospital access, but through traffic movements would be prohibited. The realigned roadway would allow access to the new facilities and the existing northwest section of Parkwest Boulevard.

The proposed new alignment of Parkwest Boulevard should be constructed as a two lane road with turn lanes at campus driveways. Sidewalks on both sides of the road should be considered. At its intersection with Sherrill Boulevard, the proposed new road should have a separate left turn and right turn lane.

The proposed hospital expansion is expected to initially generate 56 AM peak-hour trips, 60 PM peak-hour trips, and 308 daily trips. With the full addition of 182 beds, 240 AM peak-hour trips, 258 PM peak-hour trips, and 1,334 daily trips will be generated. The proposed expansion, combined with the relocation of Parkwest Boulevard, are not expected to place an unmanageable burden on the street system. Traffic projections indicated that the additional trips would be minimal to study intersections except for those along Parkwest Boulevard. However, despite the increases in traffic, the analyses found that delays and intersection LOS's along Parkwest Boulevard will be essentially unaffected by these proposed changes. The most significant impact will be to the intersection of Sherrill Boulevard/Pellissippi Parkway off ramp and Dutchtown Road, which currently fails during the PM peak hour and experiences long queues on the Pellissippi Parkway northbound off-ramp during the AM peak hour. The reassignment of the approach lanes from the off-ramp can mitigate the LOS and achieve greater approach efficiency.

In general, a combination of new hospital trips in 2019 and at buildout, plus anticipated growth of background traffic can be absorbed into the road network without creating unacceptable delays. An annual growth rate of 5-percent over the next few years and 2.5-percent over the next 10-15 years was assumed based on historical trends. The analysis concluded that the volume impact will not exceed 7-percent for any of the study intersections, with most not exceeding 3-percent. The percent of the intersection traffic associated with the Parkwest Medical Center expansion only exceeded 3-percent for the Parkwest Boulevard intersections. The expansion of the hospital should have minimal impact on study intersections, hence no mitigation is required that is directly associated it. Existing and background conditions did create the need for several possible improvements that would mitigate failing intersections or critical movements.

Sight distance at the intersection of Sherrill Boulevard at Park 40 Boulevard/Christian Academy Boulevard looking west from Park 40 Boulevard was measured to be 490 feet, hence falling slightly below the desired 400 feet. A traffic signal is not warranted at this intersection based on existing traffic volumes but one will be warranted when the proposed medical office building is occupied.

Recommendations for improving the traffic conditions in the study area include the following:

1. Provide a northbound double left-turn lane on Cedar Bluff Road to Parkwest Boulevard, currently planned by TDOT.
2. Reassign a southbound right-turn lane from the northbound Pellissippi Parkway off-ramp at Dutchtown Road for a through lane and the existing through lane to a shared left/through lane. This would require an added departure lane on Sherrill Boulevard for approximately 500 feet to match the current 4-lane section of Sherrill Boulevard. Further improvements to address 2030 buildout traffic might include adding a departure lane for the northbound Pellissippi Parkway on-ramp and the reassignment of a left-turn lane to a shared left/through lane on the northbound Sherrill Boulevard approach.

3. Signalize the intersection of Sherrill Boulevard and Park 40/Christian Academy Boulevard. A signal is not warrant based on existing traffic, but it will be when the new medical office building is occupied.

4. Provide a left-turn lane from Sherrill Boulevard to the relocated Parkwest Boulevard.

Appendix

Count Data

Origin-Destination Surveys

Signal Warrants

Synchro Reports

TDOT Plans

Trip Generation

Background Traffic

Future traffic conditions or background conditions are the anticipated conditions regardless of whether the proposed development occurs or not. A worst-case scenario was considered, so traffic in the study area was assumed to grow as the region develops. The count history available through the TDOT and MPC count stations located in the Parkwest Medical Center environs indicated a 5% annual growth rate over the past five years and 2.5-percent over the past 10 years. Cedar Bluff Road, just north of Sherrill Boulevard, had a 2010 ADT of 15,360 and a 2015 ADT of 19,139, hence for the 5-year period traffic increased by 25-percent, or 5-percent per year. Beyond 2019 the consultant selected a more modest rate of 2.5-percent because 5-percent is difficult to sustain for an extensive time period.

The completion year for the proposed development will be 2019 for the initial expansion phase and 2030 for the hospital buildout. Using the horizon year of 2019 and the growth rate for the project vicinity, background traffic was estimated for the transportation system. **Background traffic for 2019 assumes a 10.4-percent growth factor applied to the existing 2017 traffic volumes, reflecting an annual compounded growth rate of 5-percent.** For the horizon year 2030, the existing traffic was grown with a 32.5 percent rate, reflecting an annual compounded rate of 2.5-percent. This growth was applied to public rights of way or the public street system. Growth factors were not applied to private streets or driveways as they do not exhibit a continuous growth through the study area. Figures 10A and 10B illustrate the 2019 background traffic growth for the study intersections. Figures 11A and 11B illustrate the background traffic growth for 2030.

In addition to the normal rate of growth in the traffic through the study area, traffic will increase with new development. A medical office development is proposed for the northwest corner of the Sherrill Boulevard intersection with Park 40 North Boulevard and Christian Academy Boulevard. Current plans are for 100,000 square feet of medical office space. The trip generation for this office space is presented in Table 2. The AM and PM peak hours were generated using the ITE publication Trip Generation, 9th Edition. The midday and afternoon peak hours are derived from an hourly entering and exiting trip distribution of a medical office facility. The trip distribution percentages of these trips are illustrated in Figures 12A and 12B, and the assignments of these trips are illustrated in Figures 13A and 13B.

1. As funding becomes available, provide a northbound double left-turn lane on Cedar Bluff Road to Parkwest Boulevard, currently planned by TDOT. Reassign the through traffic from Parkwest Boulevard from the shared thru-right-turn lane to the left-turn lane thereby improving the right-turn overlap efficiency.

The eastbound approach of Parkwest Boulevard at Cedar Bluff Road operates in a split-phase configuration today and would need to continue to operate as a split phase if the left and through movements are grouped into one lane. A split phase operation is needed because eastbound and westbound left turn phases cannot run concurrently due to physical constraints.

The misaligned eastbound lane can be mitigated by lane line extensions directing motorists to the inside receiving lane on Executive Park Drive. The proposed left/through lane is offset by 12-feet and the intersection is 155-feet wide. The MUTCD transition formula: $L=WS^2/60$ (for speeds less than 40 MPH in urban areas) suggest that a transition of 155 feet can be achieved at 28 MPH. If the eastbound approach is restriped slightly to reduce the offset to 10 feet, the speed at which a vehicle can transverse the intersection is 30 MPH. Alternatively, the eastbound approach can be reconstructed by adding approximately 6-feet of pavement to the south side to reduce the 12-foot offset. If the approach is widened by 6-feet to the north, the raised median would likewise need to be widened or striping provided because of the excess space created by the widening. The TDOT plans for this intersection do not call for changes to the eastbound approach, however, it may be feasible to do so give that the contractor will already be on the project.

Grouping the eastbound left turn and through movements into the same lane will require striping changes and narrowing the median on the approach to Cedar Bluff Road. Currently, the two eastbound through lanes feed into the exclusive right turn lane and shared through/right turn lane. The eastbound exclusive left turn lane is developed as an exclusive left turn lane normally is. The restriping and median width reduction would be necessary so that motorists recognize that two exclusive right turn lanes are being developed and that a backstream through lane can feed into the proposed shared left/through lane.

2. As funding becomes available, reassign a southbound right-turn lane from the northbound Pellissippi Parkway off-ramp at Dutchtown Road for a through lane and the existing through lane to a shared left/through lane. This would require an added departure lane on Sherrill Boulevard for approximately 500 feet to match the current 4-lane section of Sherrill Boulevard. Further improvements to address 2030 buildout traffic might include adding a departure lane for the northbound Pellissippi Parkway on-ramp and the reassignment of a left-turn lane to a shared left/through lane on the northbound Sherrill Boulevard approach. The TDOT plan CDM Smith recently obtained is also a viable alternative.
3. Signalize the intersection of Sherrill Boulevard and Park 40 North Boulevard/Christian Academy Boulevard when warranted (with medical office buildout). Signalization should include a 100-foot westbound left-turn lane. A signal is not warranted based on existing traffic, but it will be when the new medical office building is occupied.
4. Provide a 100-foot left-turn lane, with 150-foot taper length, from Sherrill Boulevard to the relocated Parkwest Boulevard. This is shown on the site plan and CDM Smith supports the proposal.

Count Data



Traffic History

Traffic History reflects the Annual Average Daily Traffic (AADT) count along specific locations on Tennessee's road network

View stations on map: Non-Map Record Search: Station Number:

Station Information	
Station	000510
Route	05655
Location	SHERRILL BLVD. CEDAR BLUF
County	Knox
2015	5080
2014	4494
2013	4326
2012	4538
2011	4884
2010	4815
2009	NA
2008	NA
2007	NA
2006	NA
2005	NA
2004	NA
2003	NA
2002	NA
2001	NA
2000	NA
1999	NA
1998	NA

Download	KML File: (/Applications/Files/TrfcHist.kmz)	ESRI Geodatabase File: (/Applications/Files/TrfcHistFGDB.zip)	ESRI Shapefile File: (/Applications/Files/TrfcHistSHP.zip)
Open	Google Earth With: (https://earth.google.com/)	ArcGIS Explorer With: (http://www.esri.com/software/arcgis/explorer/index.html)	Database 1 With: (/Applications/Files/TMS Access o

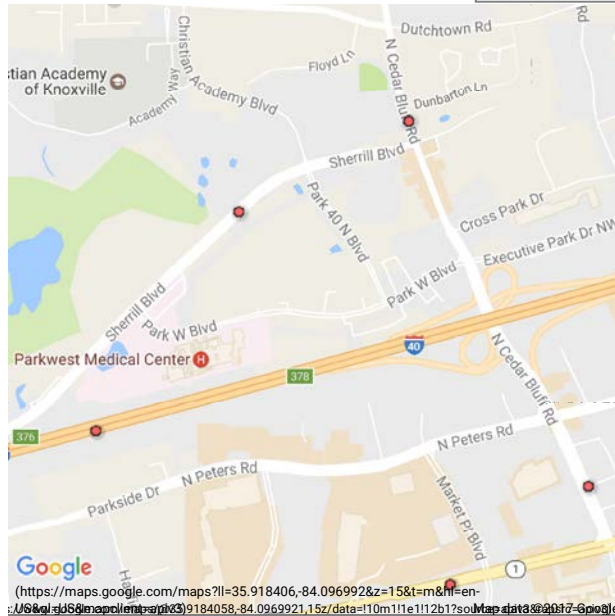
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Traffic History

Traffic History reflects the Annual Average Daily Traffic (AADT) count along specific locations on Tennessee's road network

View stations on map: Non-Map Record Search: Station Number:



Station Information	
Station	000350
Route	01053
Location	CEDAR BLUFF KNOXVILL
County	Knox
2015	19139
2014	18508
2013	19243
2012	17047
2011	16169
2010	15360
2009	15451
2008	16092
2007	17328
2006	16443
2005	15655
2004	17321
2003	16187
2002	16559
2001	16697
2000	17066
1999	16155
1998	13419

Download	KML	ESRI Geodatabase	ESRI Shapefile	Database 1
File:	(/Applications/Files/TrfcHist.kmz)	(/Applications/Files/TrfcHistFGDB.zip)	(/Applications/Files/TrfcHistSHP.zip)	(/Applications/Files/T
Open	Google Earth	ArcGIS Explorer		MS Access o
With:	(https://earth.google.com/)	(http://www.esri.com/software/arcgis/explorer/index.html)		

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 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				I-40 EB RAMPS Westbound				CEDAR BLUFF RD Northbound				I-40 EB RAMPS Eastbound				Int. Total
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07:00 AM	0	206	0	206	0	0	0	0	0	140	0	140	109	0	40	149	495
07:15 AM	0	266	0	266	0	0	0	0	0	173	0	173	144	0	49	193	632
07:30 AM	0	283	0	283	0	0	0	0	0	252	0	252	184	0	43	227	762
07:45 AM	0	327	0	327	0	0	0	0	0	291	0	291	119	0	57	176	794
Total	0	1082	0	1082	0	0	0	0	0	856	0	856	556	0	189	745	2683
08:00 AM	0	235	0	235	0	0	0	0	0	192	0	192	155	0	78	233	660
08:15 AM	0	237	0	237	0	0	0	0	0	141	0	141	139	0	96	235	613
08:30 AM	0	247	0	247	0	0	0	0	0	133	0	133	127	0	92	219	599
08:45 AM	0	238	0	238	0	0	0	0	0	129	0	129	149	0	116	265	632
Total	0	957	0	957	0	0	0	0	0	595	0	595	570	0	382	952	2504
*** BREAK ***																	
11:00 AM	0	222	0	222	0	0	0	0	0	229	0	229	75	0	61	136	587
11:15 AM	0	184	0	184	0	0	0	0	0	186	0	186	74	0	80	154	524
11:30 AM	0	226	0	226	0	0	0	0	0	206	0	206	77	0	102	179	611
11:45 AM	0	237	0	237	0	0	0	0	0	270	0	270	66	0	110	176	683
Total	0	869	0	869	0	0	0	0	0	891	0	891	292	0	353	645	2405
12:00 PM	0	282	0	282	0	0	0	0	0	288	0	288	78	0	112	190	760
12:15 PM	0	204	0	204	0	0	0	0	0	307	0	307	80	0	103	183	694
12:30 PM	0	225	0	225	0	0	0	0	0	254	0	254	101	0	75	176	655
12:45 PM	0	189	0	189	0	0	0	0	0	233	0	233	98	0	78	176	598
Total	0	900	0	900	0	0	0	0	0	1082	0	1082	357	0	368	725	2707
*** BREAK ***																	
02:00 PM	0	219	0	219	0	0	0	0	0	224	0	224	92	0	64	156	599
02:15 PM	0	205	0	205	0	0	0	0	0	240	0	240	79	0	52	131	576
02:30 PM	0	210	0	210	0	0	0	0	0	203	0	203	87	0	55	142	555
02:45 PM	0	173	0	173	0	0	0	0	0	195	0	195	90	0	59	149	517
Total	0	807	0	807	0	0	0	0	0	862	0	862	348	0	230	578	2247
03:00 PM	0	202	0	202	0	0	0	0	0	268	0	268	70	0	67	137	607
03:15 PM	0	193	0	193	0	0	0	0	0	202	0	202	77	0	72	149	544
03:30 PM	0	207	0	207	0	0	0	0	0	217	0	217	85	0	60	145	569
03:45 PM	0	275	0	275	0	0	0	0	0	223	0	223	96	0	119	215	713
Total	0	877	0	877	0	0	0	0	0	910	0	910	328	0	318	646	2433
04:00 PM	0	283	0	283	0	0	0	0	0	241	0	241	88	0	109	197	721
04:15 PM	0	249	0	249	0	0	0	0	0	269	0	269	107	0	92	199	717
04:30 PM	0	234	0	234	0	0	0	0	0	291	0	291	126	0	118	244	769
04:45 PM	0	258	0	258	0	0	0	0	0	258	0	258	112	0	118	230	746
Total	0	1024	0	1024	0	0	0	0	0	1059	0	1059	433	0	437	870	2953
05:00 PM	0	264	0	264	0	0	0	0	0	307	0	307	85	0	87	172	743
05:15 PM	0	202	0	202	0	0	0	0	0	302	0	302	86	0	85	171	675
05:30 PM	0	260	0	260	0	0	0	0	0	259	0	259	114	0	83	197	716
05:45 PM	0	236	0	236	0	0	0	0	0	227	0	227	80	0	148	228	691
Total	0	962	0	962	0	0	0	0	0	1095	0	1095	365	0	403	768	2825
Grand Total	0	7478	0	7478	0	0	0	0	0	7350	0	7350	3249	0	2680	5929	20757
Apprch %	0	100	0		0	0	0		0	100	0		54.8	0	45.2		
Total %	0	36	0	36	0	0	0	0	0	35.4	0	35.4	15.7	0	12.9	28.6	

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Start Time	CEDAR BLUFF RD Southbound				I-40 EB RAMP Westbound				CEDAR BLUFF RD Northbound				I-40 EB RAMP Eastbound				Int. Total
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	266	0	266	0	0	0	0	0	173	0	173	144	0	49	193	632
07:30 AM	0	283	0	283	0	0	0	0	0	252	0	252	184	0	43	227	762
07:45 AM	0	327	0	327	0	0	0	0	0	291	0	291	119	0	57	176	794
08:00 AM	0	235	0	235	0	0	0	0	0	192	0	192	155	0	78	233	660
Total Volume	0	1111	0	1111	0	0	0	0	0	908	0	908	602	0	227	829	2848
% App. Total	0	100	0		0	0	0		0	100	0		72.6	0	27.4		
PHF	.000	.849	.000	.849	.000	.000	.000	.000	.000	.780	.000	.780	.818	.000	.728	.889	.897

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	0	237	0	237	0	0	0	0	0	270	0	270	66	0	110	176	683
12:00 PM	0	282	0	282	0	0	0	0	0	288	0	288	78	0	112	190	760
12:15 PM	0	204	0	204	0	0	0	0	0	307	0	307	80	0	103	183	694
12:30 PM	0	225	0	225	0	0	0	0	0	254	0	254	101	0	75	176	655
Total Volume	0	948	0	948	0	0	0	0	0	1119	0	1119	325	0	400	725	2792
% App. Total	0	100	0		0	0	0		0	100	0		44.8	0	55.2		
PHF	.000	.840	.000	.840	.000	.000	.000	.000	.000	.911	.000	.911	.804	.000	.893	.954	.918

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	202	0	202	0	0	0	0	0	268	0	268	70	0	67	137	607
03:15 PM	0	193	0	193	0	0	0	0	0	202	0	202	77	0	72	149	544
03:30 PM	0	207	0	207	0	0	0	0	0	217	0	217	85	0	60	145	569
03:45 PM	0	275	0	275	0	0	0	0	0	223	0	223	96	0	119	215	713
Total Volume	0	877	0	877	0	0	0	0	0	910	0	910	328	0	318	646	2433
% App. Total	0	100	0		0	0	0		0	100	0		50.8	0	49.2		
PHF	.000	.797	.000	.797	.000	.000	.000	.000	.000	.849	.000	.849	.854	.000	.668	.751	.853

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	249	0	249	0	0	0	0	0	269	0	269	107	0	92	199	717
04:30 PM	0	234	0	234	0	0	0	0	0	291	0	291	126	0	118	244	769
04:45 PM	0	258	0	258	0	0	0	0	0	258	0	258	112	0	118	230	746
05:00 PM	0	264	0	264	0	0	0	0	0	307	0	307	85	0	87	172	743
Total Volume	0	1005	0	1005	0	0	0	0	0	1125	0	1125	430	0	415	845	2975
% App. Total	0	100	0		0	0	0		0	100	0		50.9	0	49.1		
PHF	.000	.952	.000	.952	.000	.000	.000	.000	.000	.916	.000	.916	.853	.000	.879	.866	.967

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 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				I-40 WB RAMPS Westbound				CEDAR BLUFF RD Northbound				I-40 WB RAMPS Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	87	81	168	130	0	0	130	0	176	48	224	0	0	0	0	522
07:15 AM	0	109	54	163	175	0	0	175	0	207	66	273	0	0	0	0	611
07:30 AM	0	150	87	237	175	0	0	175	0	302	88	390	0	0	0	0	802
07:45 AM	0	80	102	182	214	0	0	214	0	222	83	305	0	0	0	0	701
Total	0	426	324	750	694	0	0	694	0	907	285	1192	0	0	0	0	2636
08:00 AM	0	107	81	188	155	0	0	155	0	233	67	300	0	0	0	0	643
08:15 AM	0	95	68	163	167	0	0	167	0	196	62	258	0	0	0	0	588
08:30 AM	0	77	88	165	201	0	0	201	0	189	109	298	0	0	0	0	664
08:45 AM	0	100	78	178	190	0	0	190	0	189	124	313	0	0	0	0	681
Total	0	379	315	694	713	0	0	713	0	807	362	1169	0	0	0	0	2576
*** BREAK ***																	
11:00 AM	0	178	76	254	170	0	0	170	0	203	74	277	0	0	0	0	701
11:15 AM	0	58	72	130	127	0	0	127	0	130	49	179	0	0	0	0	436
11:30 AM	0	97	94	191	153	0	0	153	0	146	75	221	0	0	0	0	565
11:45 AM	0	140	60	200	182	0	0	182	0	200	60	260	0	0	0	0	642
Total	0	473	302	775	632	0	0	632	0	679	258	937	0	0	0	0	2344
12:00 PM	0	66	69	135	193	0	0	193	0	164	94	258	0	0	0	0	586
12:15 PM	0	85	77	162	156	0	0	156	0	191	74	265	0	0	0	0	583
12:30 PM	0	132	65	197	176	0	0	176	0	187	87	274	0	0	0	0	647
12:45 PM	0	82	69	151	118	0	0	118	0	201	80	281	0	0	0	0	550
Total	0	365	280	645	643	0	0	643	0	743	335	1078	0	0	0	0	2366
*** BREAK ***																	
02:00 PM	0	163	91	254	151	0	0	151	0	239	93	332	0	0	0	0	737
02:15 PM	0	97	60	157	162	0	0	162	0	153	123	276	0	0	0	0	595
02:30 PM	0	120	71	191	155	0	0	155	0	180	118	298	0	0	0	0	644
02:45 PM	0	123	63	186	124	0	0	124	0	202	79	281	0	0	0	0	591
Total	0	503	285	788	592	0	0	592	0	774	413	1187	0	0	0	0	2567
03:00 PM	0	181	79	260	159	0	0	159	0	190	76	266	0	0	0	0	685
03:15 PM	0	148	83	231	144	0	0	144	0	143	147	290	0	0	0	0	665
03:30 PM	0	176	89	265	150	0	0	150	0	184	190	374	0	0	0	0	789
03:45 PM	0	109	89	198	164	0	0	164	0	150	181	331	0	0	0	0	693
Total	0	614	340	954	617	0	0	617	0	667	594	1261	0	0	0	0	2832
04:00 PM	0	121	97	218	165	0	0	165	0	178	145	323	0	0	0	0	706
04:15 PM	0	78	95	173	188	0	0	188	0	122	140	262	0	0	0	0	623
04:30 PM	0	121	129	250	168	0	0	168	0	127	134	261	0	0	0	0	679
04:45 PM	0	152	160	312	196	0	0	196	0	181	117	298	0	0	0	0	806
Total	0	472	481	953	717	0	0	717	0	608	536	1144	0	0	0	0	2814
05:00 PM	0	173	147	320	201	0	0	201	0	146	134	280	0	0	0	0	801
05:15 PM	0	123	132	255	150	0	0	150	0	132	133	265	0	0	0	0	670
05:30 PM	0	125	142	267	156	0	0	156	0	154	113	267	0	0	0	0	690
05:45 PM	0	57	122	179	165	0	0	165	0	105	106	211	0	0	0	0	555
Total	0	478	543	1021	672	0	0	672	0	537	486	1023	0	0	0	0	2716
Grand Total	0	3710	2870	6580	5280	0	0	5280	0	5722	3269	8991	0	0	0	0	20851
Apprch %	0	56.4	43.6		100	0	0		0	63.6	36.4		0	0	0		
Total %	0	17.8	13.8	31.6	25.3	0	0	25.3	0	27.4	15.7	43.1	0	0	0	0	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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 (865) 963-4300

File Name : CedarBluff_I40WB
 Site Code : 00000000
 Start Date : 5/2/2017
 Page No : 2

Start Time	CEDAR BLUFF RD Southbound				I-40 WB RAMPS Westbound				CEDAR BLUFF RD Northbound				I-40 WB RAMPS Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	109	54	163	175	0	0	175	0	207	66	273	0	0	0	0	611
07:30 AM	0	150	87	237	175	0	0	175	0	302	88	390	0	0	0	0	802
07:45 AM	0	80	102	182	214	0	0	214	0	222	83	305	0	0	0	0	701
08:00 AM	0	107	81	188	155	0	0	155	0	233	67	300	0	0	0	0	643
Total Volume	0	446	324	770	719	0	0	719	0	964	304	1268	0	0	0	0	2757
% App. Total	0	57.9	42.1		100	0	0		0	76	24		0	0	0		
PHF	.000	.743	.794	.812	.840	.000	.000	.840	.000	.798	.864	.813	.000	.000	.000	.000	.859

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	0	140	60	200	182	0	0	182	0	200	60	260	0	0	0	0	642
12:00 PM	0	66	69	135	193	0	0	193	0	164	94	258	0	0	0	0	586
12:15 PM	0	85	77	162	156	0	0	156	0	191	74	265	0	0	0	0	583
12:30 PM	0	132	65	197	176	0	0	176	0	187	87	274	0	0	0	0	647
Total Volume	0	423	271	694	707	0	0	707	0	742	315	1057	0	0	0	0	2458
% App. Total	0	61	39		100	0	0		0	70.2	29.8		0	0	0		
PHF	.000	.755	.880	.868	.916	.000	.000	.916	.000	.928	.838	.964	.000	.000	.000	.000	.950

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	181	79	260	159	0	0	159	0	190	76	266	0	0	0	0	685
03:15 PM	0	148	83	231	144	0	0	144	0	143	147	290	0	0	0	0	665
03:30 PM	0	176	89	265	150	0	0	150	0	184	190	374	0	0	0	0	789
03:45 PM	0	109	89	198	164	0	0	164	0	150	181	331	0	0	0	0	693
Total Volume	0	614	340	954	617	0	0	617	0	667	594	1261	0	0	0	0	2832
% App. Total	0	64.4	35.6		100	0	0		0	52.9	47.1		0	0	0		
PHF	.000	.848	.955	.900	.941	.000	.000	.941	.000	.878	.782	.843	.000	.000	.000	.000	.897

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	152	160	312	196	0	0	196	0	181	117	298	0	0	0	0	806
05:00 PM	0	173	147	320	201	0	0	201	0	146	134	280	0	0	0	0	801
05:15 PM	0	123	132	255	150	0	0	150	0	132	133	265	0	0	0	0	670
05:30 PM	0	125	142	267	156	0	0	156	0	154	113	267	0	0	0	0	690
Total Volume	0	573	581	1154	703	0	0	703	0	613	497	1110	0	0	0	0	2967
% App. Total	0	49.7	50.3		100	0	0		0	55.2	44.8		0	0	0		
PHF	.000	.828	.908	.902	.874	.000	.000	.874	.000	.847	.927	.931	.000	.000	.000	.000	.920

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : CedarBluff_ExecPrk
 Site Code : 00000000
 Start Date : 5/2/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				EXECUTIVE PARK DR Westbound				CEDAR BLUFF RD Northbound				EXECUTIVE PARK DR Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	97	4	102	31	42	23	96	47	101	28	176	5	3	35	43	417
07:15 AM	2	121	8	131	52	61	21	134	48	124	35	207	6	6	27	39	511
07:30 AM	11	151	6	168	45	93	35	173	78	196	28	302	20	18	62	100	743
07:45 AM	2	108	14	124	40	54	24	118	55	126	41	222	5	9	45	59	523
Total	16	477	32	525	168	250	103	521	228	547	132	907	36	36	169	241	2194
08:00 AM	6	119	14	139	29	78	31	138	68	111	54	233	4	16	39	59	569
08:15 AM	9	123	23	155	16	73	23	112	65	92	39	196	8	15	26	49	512
08:30 AM	9	75	9	93	25	60	38	123	48	114	27	189	3	10	23	36	441
08:45 AM	4	98	22	124	19	61	23	103	43	113	33	189	7	12	31	50	466
Total	28	415	68	511	89	272	115	476	224	430	153	807	22	53	119	194	1988
*** BREAK ***																	
11:00 AM	3	123	16	142	34	46	38	118	59	130	14	203	20	23	73	116	579
11:15 AM	3	74	4	81	13	34	15	62	21	97	12	130	1	8	28	37	310
11:30 AM	5	87	8	100	38	39	21	98	37	93	16	146	19	10	45	74	418
11:45 AM	2	115	13	130	23	40	29	92	67	115	18	200	15	7	57	79	501
Total	13	399	41	453	108	159	103	370	184	435	60	679	55	48	203	306	1808
12:00 PM	5	76	8	89	22	57	20	99	34	108	22	164	14	14	57	85	437
12:15 PM	6	62	6	74	26	50	17	93	47	139	5	191	22	9	45	76	434
12:30 PM	12	93	11	116	33	22	29	84	49	124	14	187	19	3	55	77	464
12:45 PM	2	96	7	105	29	52	20	101	55	133	13	201	21	7	28	56	463
Total	25	327	32	384	110	181	86	377	185	504	54	743	76	33	185	294	1798
*** BREAK ***																	
02:00 PM	7	129	10	146	38	65	27	130	35	175	29	239	31	1	64	96	611
02:15 PM	3	61	5	69	46	30	28	104	39	100	14	153	21	1	33	55	381
02:30 PM	2	100	4	106	32	21	31	84	33	134	13	180	14	3	43	60	430
02:45 PM	7	63	5	75	39	26	30	95	47	131	24	202	26	2	70	98	470
Total	19	353	24	396	155	142	116	413	154	540	80	774	92	7	210	309	1892
03:00 PM	4	96	6	106	45	7	34	86	42	133	15	190	17	0	83	100	482
03:15 PM	2	85	5	92	42	8	19	69	28	95	20	143	18	5	70	93	397
03:30 PM	0	88	8	96	52	13	30	95	50	118	16	184	13	2	93	108	483
03:45 PM	2	110	11	123	56	23	30	109	33	109	8	150	15	5	54	74	456
Total	8	379	30	417	195	51	113	359	153	455	59	667	63	12	300	375	1818
04:00 PM	8	116	9	133	69	18	38	125	24	141	13	178	17	1	54	72	508
04:15 PM	1	54	6	61	45	3	31	79	22	95	5	122	21	0	40	61	323
04:30 PM	7	90	8	105	49	3	26	78	29	83	15	127	14	0	48	62	372
04:45 PM	2	87	8	97	60	23	29	112	38	128	15	181	14	7	67	88	478
Total	18	347	31	396	223	47	124	394	113	447	48	608	66	8	209	283	1681
05:00 PM	12	96	3	111	72	13	26	111	27	103	16	146	14	3	68	85	453
05:15 PM	1	92	7	100	38	12	28	78	34	91	7	132	8	3	45	56	366
05:30 PM	10	115	5	130	61	7	40	108	33	104	17	154	18	2	53	73	465
05:45 PM	4	70	4	78	36	8	26	70	22	78	5	105	8	0	22	30	283
Total	27	373	19	419	207	40	120	367	116	376	45	537	48	8	188	244	1567
Grand Total	154	3070	277	3501	1255	1142	880	3277	1357	3734	631	5722	458	205	1583	2246	14746
Apprch %	4.4	87.7	7.9		38.3	34.8	26.9		23.7	65.3	11		20.4	9.1	70.5		
Total %	1	20.8	1.9	23.7	8.5	7.7	6	22.2	9.2	25.3	4.3	38.8	3.1	1.4	10.7	15.2	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : CedarBluff_ExecPrk
 Site Code : 00000000
 Start Date : 5/2/2017
 Page No : 2

Start Time	CEDAR BLUFF RD Southbound				EXECUTIVE PARK DR Westbound				CEDAR BLUFF RD Northbound				EXECUTIVE PARK DR Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	11	151	6	168	45	93	35	173	78	196	28	302	20	18	62	100	743
07:45 AM	2	108	14	124	40	54	24	118	55	126	41	222	5	9	45	59	523
08:00 AM	6	119	14	139	29	78	31	138	68	111	54	233	4	16	39	59	569
08:15 AM	9	123	23	155	16	73	23	112	65	92	39	196	8	15	26	49	512
Total Volume	28	501	57	586	130	298	113	541	266	525	162	953	37	58	172	267	2347
% App. Total	4.8	85.5	9.7		24	55.1	20.9		27.9	55.1	17		13.9	21.7	64.4		
PHF	.636	.829	.620	.872	.722	.801	.807	.782	.853	.670	.750	.789	.463	.806	.694	.668	.790

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	2	115	13	130	23	40	29	92	67	115	18	200	15	7	57	79	501
12:00 PM	5	76	8	89	22	57	20	99	34	108	22	164	14	14	57	85	437
12:15 PM	6	62	6	74	26	50	17	93	47	139	5	191	22	9	45	76	434
12:30 PM	12	93	11	116	33	22	29	84	49	124	14	187	19	3	55	77	464
Total Volume	25	346	38	409	104	169	95	368	197	486	59	742	70	33	214	317	1836
% App. Total	6.1	84.6	9.3		28.3	45.9	25.8		26.5	65.5	8		22.1	10.4	67.5		
PHF	.521	.752	.731	.787	.788	.741	.819	.929	.735	.874	.670	.928	.795	.589	.939	.932	.916

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	7	129	10	146	38	65	27	130	35	175	29	239	31	1	64	96	611
02:15 PM	3	61	5	69	46	30	28	104	39	100	14	153	21	1	33	55	381
02:30 PM	2	100	4	106	32	21	31	84	33	134	13	180	14	3	43	60	430
02:45 PM	7	63	5	75	39	26	30	95	47	131	24	202	26	2	70	98	470
Total Volume	19	353	24	396	155	142	116	413	154	540	80	774	92	7	210	309	1892
% App. Total	4.8	89.1	6.1		37.5	34.4	28.1		19.9	69.8	10.3		29.8	2.3	68		
PHF	.679	.684	.600	.678	.842	.546	.935	.794	.819	.771	.690	.810	.742	.583	.750	.788	.774

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	87	8	97	60	23	29	112	38	128	15	181	14	7	67	88	478
05:00 PM	12	96	3	111	72	13	26	111	27	103	16	146	14	3	68	85	453
05:15 PM	1	92	7	100	38	12	28	78	34	91	7	132	8	3	45	56	366
05:30 PM	10	115	5	130	61	7	40	108	33	104	17	154	18	2	53	73	465
Total Volume	25	390	23	438	231	55	123	409	132	426	55	613	54	15	233	302	1762
% App. Total	5.7	89	5.3		56.5	13.4	30.1		21.5	69.5	9		17.9	5	77.2		
PHF	.521	.848	.719	.842	.802	.598	.769	.913	.868	.832	.809	.847	.750	.536	.857	.858	.922

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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 (865) 963-4300

File Name : CedarBluff_Sherrill
 Site Code : 00000002
 Start Date : 5/2/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				SHERRILL BLVD Westbound				CEDAR BLUFF RD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	7	176	9	192	0	0	1	1	19	107	34	160	12	0	20	32	385
07:15 AM	6	226	14	246	2	1	1	4	77	147	29	253	13	7	23	43	546
07:30 AM	19	227	47	293	2	1	1	4	33	213	23	269	6	5	30	41	607
07:45 AM	22	237	33	292	1	0	1	2	22	106	33	161	5	1	24	30	485
Total	54	866	103	1023	5	2	4	11	151	573	119	843	36	13	97	146	2023
08:00 AM	19	240	40	299	6	0	1	7	35	140	72	247	6	5	30	41	594
08:15 AM	16	206	28	250	0	0	2	2	92	170	31	293	7	8	31	46	591
08:30 AM	5	216	40	261	7	0	4	11	55	137	30	222	14	4	28	46	540
08:45 AM	4	221	32	257	4	1	3	8	24	152	61	237	14	4	42	60	562
Total	44	883	140	1067	17	1	10	28	206	599	194	999	41	21	131	193	2287
*** BREAK ***																	
11:00 AM	6	155	5	166	14	0	1	15	26	130	8	164	16	0	14	30	375
11:15 AM	6	161	14	181	13	0	0	13	33	123	13	169	22	0	18	40	403
11:30 AM	7	202	14	223	23	3	3	29	35	162	13	210	25	3	22	50	512
11:45 AM	4	199	11	214	29	4	6	39	47	183	6	236	33	4	27	64	553
Total	23	717	44	784	79	7	10	96	141	598	40	779	96	7	81	184	1843
12:00 PM	6	224	7	237	31	1	9	41	43	212	9	264	28	5	48	81	623
12:15 PM	5	178	19	202	22	1	4	27	40	169	16	225	31	6	37	74	528
12:30 PM	5	168	14	187	17	1	9	27	39	145	22	206	19	5	19	43	463
12:45 PM	8	202	14	224	20	3	3	26	53	155	37	245	25	4	27	56	551
Total	24	772	54	850	90	6	25	121	175	681	84	940	103	20	131	254	2165
*** BREAK ***																	
02:00 PM	5	219	4	228	17	0	10	27	22	193	15	230	12	4	13	29	514
02:15 PM	2	240	10	252	17	0	2	19	27	169	3	199	9	0	5	14	484
02:30 PM	2	157	2	161	12	0	4	16	25	137	25	187	5	0	10	15	379
02:45 PM	11	124	4	139	2	0	4	6	18	78	7	103	17	0	4	21	269
Total	20	740	20	780	48	0	20	68	92	577	50	719	43	4	32	79	1646
03:00 PM	2	276	0	278	25	0	2	27	25	184	14	223	16	0	24	40	568
03:15 PM	5	192	0	197	10	0	0	10	20	131	3	154	12	0	10	22	383
03:30 PM	2	232	4	238	18	0	0	18	8	145	11	164	17	0	25	42	462
03:45 PM	6	209	6	221	16	0	0	16	23	122	9	154	27	0	13	40	431
Total	15	909	10	934	69	0	2	71	76	582	37	695	72	0	72	144	1844
04:00 PM	8	215	4	227	11	0	0	11	35	143	12	190	17	0	24	41	469
04:15 PM	7	179	8	194	15	0	1	16	27	140	4	171	12	0	3	15	396
04:30 PM	3	241	4	248	17	0	2	19	16	145	0	161	33	0	21	54	482
04:45 PM	3	178	2	183	17	0	2	19	18	130	5	153	31	0	4	35	390
Total	21	813	18	852	60	0	5	65	96	558	21	675	93	0	52	145	1737
05:00 PM	0	214	3	217	36	0	0	36	12	136	0	148	32	0	12	44	445
05:15 PM	4	192	0	196	0	0	0	0	15	138	5	158	28	3	13	44	398
05:30 PM	0	281	0	281	30	0	3	33	7	246	6	259	38	0	11	49	622
05:45 PM	2	176	0	178	17	0	2	19	4	138	9	151	12	0	3	15	363
Total	6	863	3	872	83	0	5	88	38	658	20	716	110	3	39	152	1828
Grand Total	207	6563	392	7162	451	16	81	548	975	4826	565	6366	594	68	635	1297	15373
Apprch %	2.9	91.6	5.5		82.3	2.9	14.8		15.3	75.8	8.9		45.8	5.2	49		
Total %	1.3	42.7	2.5	46.6	2.9	0.1	0.5	3.6	6.3	31.4	3.7	41.4	3.9	0.4	4.1	8.4	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : CedarBluff_Sherrill
 Site Code : 00000002
 Start Date : 5/2/2017
 Page No : 2

Start Time	CEDAR BLUFF RD Southbound				SHERRILL BLVD Westbound				CEDAR BLUFF RD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	19	240	40	299	6	0	1	7	35	140	72	247	6	5	30	41	594
08:15 AM	16	206	28	250	0	0	2	2	92	170	31	293	7	8	31	46	591
08:30 AM	5	216	40	261	7	0	4	11	55	137	30	222	14	4	28	46	540
08:45 AM	4	221	32	257	4	1	3	8	24	152	61	237	14	4	42	60	562
Total Volume	44	883	140	1067	17	1	10	28	206	599	194	999	41	21	131	193	2287
% App. Total	4.1	82.8	13.1		60.7	3.6	35.7		20.6	60	19.4		21.2	10.9	67.9		
PHF	.579	.920	.875	.892	.607	.250	.625	.636	.560	.881	.674	.852	.732	.656	.780	.804	.963

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:30 AM																	
11:30 AM	7	202	14	223	23	3	3	29	35	162	13	210	25	3	22	50	512
11:45 AM	4	199	11	214	29	4	6	39	47	183	6	236	33	4	27	64	553
12:00 PM	6	224	7	237	31	1	9	41	43	212	9	264	28	5	48	81	623
12:15 PM	5	178	19	202	22	1	4	27	40	169	16	225	31	6	37	74	528
Total Volume	22	803	51	876	105	9	22	136	165	726	44	935	117	18	134	269	2216
% App. Total	2.5	91.7	5.8		77.2	6.6	16.2		17.6	77.6	4.7		43.5	6.7	49.8		
PHF	.786	.896	.671	.924	.847	.563	.611	.829	.878	.856	.688	.885	.886	.750	.698	.830	.889

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	2	276	0	278	25	0	2	27	25	184	14	223	16	0	24	40	568
03:15 PM	5	192	0	197	10	0	0	10	20	131	3	154	12	0	10	22	383
03:30 PM	2	232	4	238	18	0	0	18	8	145	11	164	17	0	25	42	462
03:45 PM	6	209	6	221	16	0	0	16	23	122	9	154	27	0	13	40	431
Total Volume	15	909	10	934	69	0	2	71	76	582	37	695	72	0	72	144	1844
% App. Total	1.6	97.3	1.1		97.2	0	2.8		10.9	83.7	5.3		50	0	50		
PHF	.625	.823	.417	.840	.690	.000	.250	.657	.760	.791	.661	.779	.667	.000	.720	.857	.812

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	178	2	183	17	0	2	19	18	130	5	153	31	0	4	35	390
05:00 PM	0	214	3	217	36	0	0	36	12	136	0	148	32	0	12	44	445
05:15 PM	4	192	0	196	0	0	0	0	15	138	5	158	28	3	13	44	398
05:30 PM	0	281	0	281	30	0	3	33	7	246	6	259	38	0	11	49	622
Total Volume	7	865	5	877	83	0	5	88	52	650	16	718	129	3	40	172	1855
% App. Total	0.8	98.6	0.6		94.3	0	5.7		7.2	90.5	2.2		75	1.7	23.3		
PHF	.438	.770	.417	.780	.576	.000	.417	.611	.722	.661	.667	.693	.849	.250	.769	.878	.746

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : cedarbluff_foxlonas_balanced
 Site Code : 00000001
 Start Date : 5/4/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				FOX LONAS DR Westbound				CEDAR BLUFF RD Northbound				FOX LONAS DR Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	19	156	0	175	40	0	30	70	0	102	11	113	0	0	0	0	358
07:15 AM	59	111	1	171	29	0	27	56	1	149	39	189	0	0	0	0	416
07:30 AM	107	186	0	293	34	0	32	66	1	241	136	378	0	0	0	0	737
07:45 AM	131	95	1	227	55	0	37	92	0	176	109	285	0	0	0	0	604
Total	316	548	2	866	158	0	126	284	2	668	295	965	0	0	0	0	2115
08:00 AM	61	136	0	197	32	0	15	47	0	152	39	191	0	0	0	0	435
08:15 AM	24	166	1	191	23	0	20	43	0	138	25	163	0	0	0	0	397
08:30 AM	25	211	0	236	13	0	13	26	0	115	22	137	0	0	0	0	399
08:45 AM	21	199	0	220	24	0	3	27	0	120	40	160	0	0	0	0	407
Total	131	712	1	844	92	0	51	143	0	525	126	651	0	0	0	0	1638
*** BREAK ***																	
11:00 AM	26	120	0	146	20	0	11	31	0	145	31	176	0	0	0	0	353
11:15 AM	6	158	0	164	11	0	14	25	0	148	26	174	0	0	0	0	363
11:30 AM	0	150	0	150	15	0	8	23	0	137	0	137	0	0	0	0	310
11:45 AM	24	171	1	196	17	0	5	22	0	133	30	163	0	0	0	0	381
Total	56	599	1	656	63	0	38	101	0	563	87	650	0	0	0	0	1407
12:00 PM	31	184	0	215	20	0	5	25	0	157	36	193	0	0	0	0	433
12:15 PM	12	199	0	211	19	0	16	35	0	129	23	152	0	0	0	0	398
12:30 PM	7	198	0	205	15	0	8	23	0	141	27	168	0	0	0	0	396
12:45 PM	15	141	0	156	17	0	3	20	0	135	37	172	0	0	0	0	348
Total	65	722	0	787	71	0	32	103	0	562	123	685	0	0	0	0	1575
*** BREAK ***																	
02:00 PM	14	116	0	130	23	0	12	35	0	147	31	178	0	0	0	0	343
02:15 PM	10	112	0	122	10	0	16	26	0	143	26	169	0	0	0	0	317
02:30 PM	21	121	0	142	17	0	10	27	0	156	46	202	0	0	0	0	371
02:45 PM	13	92	0	105	35	0	2	37	0	161	32	193	0	0	0	0	335
Total	58	441	0	499	85	0	40	125	0	607	135	742	0	0	0	0	1366
03:00 PM	39	114	0	153	32	0	2	34	0	150	36	186	0	0	0	0	373
03:15 PM	30	104	0	134	14	0	6	20	0	132	47	179	0	0	0	0	333
03:30 PM	14	156	0	170	20	0	2	22	0	196	35	231	0	0	0	0	423
03:45 PM	11	161	0	172	6	0	10	16	0	156	23	179	0	0	0	0	367
Total	94	535	0	629	72	0	20	92	0	634	141	775	0	0	0	0	1496
04:00 PM	14	195	0	209	19	0	7	26	0	151	60	211	0	0	0	0	446
04:15 PM	25	187	0	212	11	0	10	21	0	140	42	182	0	0	0	0	415
04:30 PM	16	171	0	187	19	0	17	36	0	183	58	241	0	0	0	0	464
04:45 PM	5	201	0	206	4	0	10	14	0	162	52	214	0	0	0	0	434
Total	60	754	0	814	53	0	44	97	0	636	212	848	0	0	0	0	1759
05:00 PM	10	223	0	233	14	0	13	27	0	186	66	252	0	0	0	0	512
05:15 PM	16	220	0	236	21	0	11	32	0	202	55	257	0	0	0	0	525
05:30 PM	13	209	0	222	18	0	10	28	0	164	44	208	0	0	0	0	458
05:45 PM	11	212	0	223	16	0	10	26	0	181	42	223	0	0	0	0	472
Total	50	864	0	914	69	0	44	113	0	733	207	940	0	0	0	0	1967
Grand Total	830	5175	4	6009	663	0	395	1058	2	4928	1326	6256	0	0	0	0	13323
Apprch %	13.8	86.1	0.1		62.7	0	37.3		0	78.8	21.2		0	0	0		
Total %	6.2	38.8	0	45.1	5	0	3	7.9	0	37	10	47	0	0	0	0	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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 (865) 963-4300

File Name : cedarbluff_foxlonas_balanced
 Site Code : 00000001
 Start Date : 5/4/2017
 Page No : 2

Start Time	CEDAR BLUFF RD Southbound				FOX LONAS DR Westbound				CEDAR BLUFF RD Northbound				FOX LONAS DR Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	59	111	1	171	29	0	27	56	1	149	39	189	0	0	0	0	416
07:30 AM	107	186	0	293	34	0	32	66	1	241	136	378	0	0	0	0	737
07:45 AM	131	95	1	227	55	0	37	92	0	176	109	285	0	0	0	0	604
08:00 AM	61	136	0	197	32	0	15	47	0	152	39	191	0	0	0	0	435
Total Volume	358	528	2	888	150	0	111	261	2	718	323	1043	0	0	0	0	2192
% App. Total	40.3	59.5	0.2		57.5	0	42.5		0.2	68.8	31		0	0	0		
PHF	.683	.710	.500	.758	.682	.000	.750	.709	.500	.745	.594	.690	.000	.000	.000	.000	.744

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	24	171	1	196	17	0	5	22	0	133	30	163	0	0	0	0	381
12:00 PM	31	184	0	215	20	0	5	25	0	157	36	193	0	0	0	0	433
12:15 PM	12	199	0	211	19	0	16	35	0	129	23	152	0	0	0	0	398
12:30 PM	7	198	0	205	15	0	8	23	0	141	27	168	0	0	0	0	396
Total Volume	74	752	1	827	71	0	34	105	0	560	116	676	0	0	0	0	1608
% App. Total	8.9	90.9	0.1		67.6	0	32.4		0	82.8	17.2		0	0	0		
PHF	.597	.945	.250	.962	.888	.000	.531	.750	.000	.892	.806	.876	.000	.000	.000	.000	.928

Peak Hour Analysis From 01:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	39	114	0	153	32	0	2	34	0	150	36	186	0	0	0	0	373
03:15 PM	30	104	0	134	14	0	6	20	0	132	47	179	0	0	0	0	333
03:30 PM	14	156	0	170	20	0	2	22	0	196	35	231	0	0	0	0	423
03:45 PM	11	161	0	172	6	0	10	16	0	156	23	179	0	0	0	0	367
Total Volume	94	535	0	629	72	0	20	92	0	634	141	775	0	0	0	0	1496
% App. Total	14.9	85.1	0		78.3	0	21.7		0	81.8	18.2		0	0	0		
PHF	.603	.831	.000	.914	.563	.000	.500	.676	.000	.809	.750	.839	.000	.000	.000	.000	.884

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	10	223	0	233	14	0	13	27	0	186	66	252	0	0	0	0	512
05:15 PM	16	220	0	236	21	0	11	32	0	202	55	257	0	0	0	0	525
05:30 PM	13	209	0	222	18	0	10	28	0	164	44	208	0	0	0	0	458
05:45 PM	11	212	0	223	16	0	10	26	0	181	42	223	0	0	0	0	472
Total Volume	50	864	0	914	69	0	44	113	0	733	207	940	0	0	0	0	1967
% App. Total	5.5	94.5	0		61.1	0	38.9		0	78	22		0	0	0		
PHF	.781	.969	.000	.968	.821	.000	.846	.883	.000	.907	.784	.914	.000	.000	.000	.000	.937

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : cedarbluff_dutchtown
 Site Code : 00000000
 Start Date : 5/4/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	CEDAR BLUFF RD Southbound				DUTCHTOWN RD Westbound				CEDAR BLUFF RD Northbound				DUTCHTOWN RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	4	166	26	196	1	16	2	19	13	93	1	107	7	5	19	31	353
07:15 AM	4	120	16	140	14	27	7	48	26	116	3	145	26	7	18	51	384
07:30 AM	7	159	54	220	13	62	10	85	69	191	1	261	40	14	18	72	638
07:45 AM	11	100	39	150	9	38	4	51	74	148	3	225	24	18	14	56	482
Total	26	545	135	706	37	143	23	203	182	548	8	738	97	44	69	210	1857
08:00 AM	7	121	40	168	14	25	3	42	51	125	3	179	24	14	14	52	441
08:15 AM	3	148	38	189	9	35	1	45	70	125	1	196	12	16	14	42	472
08:30 AM	1	204	19	224	9	20	4	33	25	99	4	128	12	8	26	46	431
08:45 AM	4	194	25	223	5	17	1	23	23	107	5	135	12	8	18	38	419
Total	15	667	122	804	37	97	9	143	169	456	13	638	60	46	72	178	1763
*** BREAK ***																	
11:00 AM	4	130	6	140	5	17	5	27	29	127	3	159	13	15	21	49	375
11:15 AM	5	154	10	169	3	17	2	22	21	135	9	165	11	6	20	37	393
11:30 AM	3	149	13	165	5	9	5	19	26	117	10	153	15	13	12	40	377
11:45 AM	1	171	16	188	7	19	1	27	28	123	8	159	9	6	8	23	397
Total	13	604	45	662	20	62	13	95	104	502	30	636	48	40	61	149	1542
12:00 PM	2	188	14	204	23	12	2	37	43	140	7	190	15	8	12	35	466
12:15 PM	8	200	10	218	8	18	4	30	29	110	14	153	15	9	15	39	440
12:30 PM	5	194	14	213	4	17	1	22	28	120	11	159	20	11	15	46	440
12:45 PM	5	138	15	158	0	16	1	17	53	120	9	182	14	13	9	36	393
Total	20	720	53	793	35	63	8	106	153	490	41	684	64	41	51	156	1739
*** BREAK ***																	
02:00 PM	5	115	19	139	6	9	4	19	45	123	8	176	20	7	22	49	383
02:15 PM	1	107	14	122	6	16	5	27	29	123	9	161	15	9	20	44	354
02:30 PM	5	119	14	138	4	25	11	40	28	135	6	169	10	6	12	28	375
02:45 PM	11	96	20	127	3	22	6	31	35	132	13	180	23	6	14	43	381
Total	22	437	67	526	19	72	26	117	137	513	36	686	68	28	68	164	1493
03:00 PM	3	119	24	146	7	32	3	42	33	138	7	178	9	15	22	46	412
03:15 PM	2	92	24	118	10	32	7	49	50	106	4	160	19	11	13	43	370
03:30 PM	4	145	27	176	2	40	4	46	44	178	5	227	14	12	15	41	490
03:45 PM	6	134	27	167	0	21	2	23	43	120	9	172	34	21	25	80	442
Total	15	490	102	607	19	125	16	160	170	542	25	737	76	59	75	210	1714
04:00 PM	5	185	24	214	3	23	5	31	42	120	12	174	26	13	14	53	472
04:15 PM	3	176	19	198	0	23	2	25	34	113	16	163	25	18	19	62	448
04:30 PM	4	172	14	190	6	37	1	44	32	147	8	187	35	22	22	79	500
04:45 PM	1	198	6	205	8	28	2	38	33	113	4	150	47	16	15	78	471
Total	13	731	63	807	17	111	10	138	141	493	40	674	133	69	70	272	1891
05:00 PM	4	224	9	237	4	41	0	45	39	159	10	208	27	21	10	58	548
05:15 PM	4	212	25	241	1	28	15	44	30	150	6	186	37	26	13	76	547
05:30 PM	6	181	22	209	10	25	8	43	46	104	4	154	52	21	10	83	489
05:45 PM	5	176	31	212	5	39	4	48	75	130	9	214	47	15	15	77	551
Total	19	793	87	899	20	133	27	180	190	543	29	762	163	83	48	294	2135
Grand Total	143	4987	674	5804	204	806	132	1142	1246	4087	222	5555	709	410	514	1633	14134
Apprch %	2.5	85.9	11.6		17.9	70.6	11.6		22.4	73.6	4		43.4	25.1	31.5		
Total %	1	35.3	4.8	41.1	1.4	5.7	0.9	8.1	8.8	28.9	1.6	39.3	5	2.9	3.6	11.6	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : cedarbluff_dutchtown
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 Page No : 2

Start Time	CEDAR BLUFF RD Southbound				DUTCHTOWN RD Westbound				CEDAR BLUFF RD Northbound				DUTCHTOWN RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	7	159	54	220	13	62	10	85	69	191	1	261	40	14	18	72	638
07:45 AM	11	100	39	150	9	38	4	51	74	148	3	225	24	18	14	56	482
08:00 AM	7	121	40	168	14	25	3	42	51	125	3	179	24	14	14	52	441
08:15 AM	3	148	38	189	9	35	1	45	70	125	1	196	12	16	14	42	472
Total Volume	28	528	171	727	45	160	18	223	264	589	8	861	100	62	60	222	2033
% App. Total	3.9	72.6	23.5		20.2	71.7	8.1		30.7	68.4	0.9		45	27.9	27		
PHF	.636	.830	.792	.826	.804	.645	.450	.656	.892	.771	.667	.825	.625	.861	.833	.771	.797

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	1	171	16	188	7	19	1	27	28	123	8	159	9	6	8	23	397
12:00 PM	2	188	14	204	23	12	2	37	43	140	7	190	15	8	12	35	466
12:15 PM	8	200	10	218	8	18	4	30	29	110	14	153	15	9	15	39	440
12:30 PM	5	194	14	213	4	17	1	22	28	120	11	159	20	11	15	46	440
Total Volume	16	753	54	823	42	66	8	116	128	493	40	661	59	34	50	143	1743
% App. Total	1.9	91.5	6.6		36.2	56.9	6.9		19.4	74.6	6.1		41.3	23.8	35		
PHF	.500	.941	.844	.944	.457	.868	.500	.784	.744	.880	.714	.870	.738	.773	.833	.777	.935

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	3	119	24	146	7	32	3	42	33	138	7	178	9	15	22	46	412
03:15 PM	2	92	24	118	10	32	7	49	50	106	4	160	19	11	13	43	370
03:30 PM	4	145	27	176	2	40	4	46	44	178	5	227	14	12	15	41	490
03:45 PM	6	134	27	167	0	21	2	23	43	120	9	172	34	21	25	80	442
Total Volume	15	490	102	607	19	125	16	160	170	542	25	737	76	59	75	210	1714
% App. Total	2.5	80.7	16.8		11.9	78.1	10		23.1	73.5	3.4		36.2	28.1	35.7		
PHF	.625	.845	.944	.862	.475	.781	.571	.816	.850	.761	.694	.812	.559	.702	.750	.656	.874

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	4	224	9	237	4	41	0	45	39	159	10	208	27	21	10	58	548
05:15 PM	4	212	25	241	1	28	15	44	30	150	6	186	37	26	13	76	547
05:30 PM	6	181	22	209	10	25	8	43	46	104	4	154	52	21	10	83	489
05:45 PM	5	176	31	212	5	39	4	48	75	130	9	214	47	15	15	77	551
Total Volume	19	793	87	899	20	133	27	180	190	543	29	762	163	83	48	294	2135
% App. Total	2.1	88.2	9.7		11.1	73.9	15		24.9	71.3	3.8		55.4	28.2	16.3		
PHF	.792	.885	.702	.933	.500	.811	.450	.938	.633	.854	.725	.890	.784	.798	.800	.886	.969

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : Sherrill_Park40
 Site Code : 00000001
 Start Date : 5/16/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	PARK 40 BLVD Southbound				SHERRILL BLVD Westbound				PARK 40 BLVD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	6	11	2	19	2	23	20	45	1	3	1	5	13	24	2	39	108
07:15 AM	3	18	2	23	6	49	38	93	0	8	1	9	10	29	2	41	166
07:30 AM	14	48	4	66	3	70	50	123	1	11	2	14	14	25	2	41	244
07:45 AM	22	73	13	108	9	66	54	129	2	5	0	7	9	26	4	39	283
Total	45	150	21	216	20	208	162	390	4	27	4	35	46	104	10	160	801
08:00 AM	12	58	7	77	16	81	37	134	1	5	2	8	7	31	4	42	261
08:15 AM	15	28	2	45	9	74	22	105	0	2	0	2	8	19	4	31	183
08:30 AM	5	12	2	19	3	78	9	90	1	4	2	7	2	30	3	35	151
08:45 AM	3	11	6	20	5	77	6	88	0	3	1	4	4	24	1	29	141
Total	35	109	17	161	33	310	74	417	2	14	5	21	21	104	12	137	736
*** BREAK ***																	
11:00 AM	4	9	0	13	1	30	5	36	1	5	4	10	3	40	4	47	106
11:15 AM	8	6	1	15	3	36	10	49	0	2	2	4	2	40	2	44	112
11:30 AM	7	6	0	13	3	45	9	57	0	5	2	7	3	42	2	47	124
11:45 AM	8	15	3	26	11	30	11	52	2	5	4	11	5	51	7	63	152
Total	27	36	4	67	18	141	35	194	3	17	12	32	13	173	15	201	494
12:00 PM	6	17	4	27	12	38	12	62	1	5	3	9	5	53	5	63	161
12:15 PM	6	8	1	15	2	62	8	72	2	4	10	16	6	61	2	69	172
12:30 PM	4	5	1	10	4	51	5	60	2	6	6	14	4	59	3	66	150
12:45 PM	2	6	2	10	5	48	1	54	1	6	4	11	3	49	2	54	129
Total	18	36	8	62	23	199	26	248	6	21	23	50	18	222	12	252	612
*** BREAK ***																	
02:00 PM	6	13	1	20	4	35	9	48	3	8	5	16	3	38	0	41	125
02:15 PM	5	7	1	13	6	53	9	68	0	4	1	5	2	40	2	44	130
02:30 PM	4	8	4	16	3	34	9	46	2	5	2	9	6	48	2	56	127
02:45 PM	13	25	3	41	3	38	11	52	3	4	8	15	4	43	2	49	157
Total	28	53	9	90	16	160	38	214	8	21	16	45	15	169	6	190	539
03:00 PM	10	10	0	20	3	22	17	42	1	11	4	16	6	36	2	44	122
03:15 PM	21	20	4	45	5	26	15	46	1	8	3	12	7	43	2	52	155
03:30 PM	18	15	3	36	6	30	14	50	0	7	3	10	5	40	2	47	143
03:45 PM	10	20	2	32	2	27	8	37	2	0	1	3	3	33	1	37	109
Total	59	65	9	133	16	105	54	175	4	26	11	41	21	152	7	180	529
04:00 PM	22	12	1	35	2	28	5	35	2	7	2	11	5	38	2	45	126
04:15 PM	9	25	5	39	3	21	8	32	6	5	0	11	3	45	1	49	131
04:30 PM	17	29	1	47	1	25	4	30	0	1	5	6	3	47	4	54	137
04:45 PM	27	23	1	51	7	30	13	50	5	7	6	18	7	57	3	67	186
Total	75	89	8	172	13	104	30	147	13	20	13	46	18	187	10	215	580
05:00 PM	9	16	0	25	3	22	16	41	6	4	3	13	10	72	1	83	162
05:15 PM	13	22	3	38	5	43	13	61	2	8	4	14	3	88	3	94	207
05:30 PM	9	16	1	26	3	24	17	44	4	14	2	20	6	64	0	70	160
05:45 PM	12	18	2	32	4	34	6	44	4	4	2	10	2	60	7	69	155
Total	43	72	6	121	15	123	52	190	16	30	11	57	21	284	11	316	684
Grand Total	330	610	82	1022	154	1350	471	1975	56	176	95	327	173	1395	83	1651	4975
Apprch %	32.3	59.7	8		7.8	68.4	23.8		17.1	53.8	29.1		10.5	84.5	5		
Total %	6.6	12.3	1.6	20.5	3.1	27.1	9.5	39.7	1.1	3.5	1.9	6.6	3.5	28	1.7	33.2	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
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File Name : Sherrill_Park40
 Site Code : 00000001
 Start Date : 5/16/2017
 Page No : 2

Start Time	PARK 40 BLVD Southbound				SHERRILL BLVD Westbound				PARK 40 BLVD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	14	48	4	66	3	70	50	123	1	11	2	14	14	25	2	41	244
07:45 AM	22	73	13	108	9	66	54	129	2	5	0	7	9	26	4	39	283
08:00 AM	12	58	7	77	16	81	37	134	1	5	2	8	7	31	4	42	261
08:15 AM	15	28	2	45	9	74	22	105	0	2	0	2	8	19	4	31	183
Total Volume	63	207	26	296	37	291	163	491	4	23	4	31	38	101	14	153	971
% App. Total	21.3	69.9	8.8		7.5	59.3	33.2		12.9	74.2	12.9		24.8	66	9.2		
PHF	.716	.709	.500	.685	.578	.898	.755	.916	.500	.523	.500	.554	.679	.815	.875	.911	.858

Peak Hour Analysis From 11:00 AM to 01:00 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	8	15	3	26	11	30	11	52	2	5	4	11	5	51	7	63	152
12:00 PM	6	17	4	27	12	38	12	62	1	5	3	9	5	53	5	63	161
12:15 PM	6	8	1	15	2	62	8	72	2	4	10	16	6	61	2	69	172
12:30 PM	4	5	1	10	4	51	5	60	2	6	6	14	4	59	3	66	150
Total Volume	24	45	9	78	29	181	36	246	7	20	23	50	20	224	17	261	635
% App. Total	30.8	57.7	11.5		11.8	73.6	14.6		14	40	46		7.7	85.8	6.5		
PHF	.750	.662	.563	.722	.604	.730	.750	.854	.875	.833	.575	.781	.833	.918	.607	.946	.923

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	13	25	3	41	3	38	11	52	3	4	8	15	4	43	2	49	157
03:00 PM	10	10	0	20	3	22	17	42	1	11	4	16	6	36	2	44	122
03:15 PM	21	20	4	45	5	26	15	46	1	8	3	12	7	43	2	52	155
03:30 PM	18	15	3	36	6	30	14	50	0	7	3	10	5	40	2	47	143
Total Volume	62	70	10	142	17	116	57	190	5	30	18	53	22	162	8	192	577
% App. Total	43.7	49.3	7		8.9	61.1	30		9.4	56.6	34		11.5	84.4	4.2		
PHF	.738	.700	.625	.789	.708	.763	.838	.913	.417	.682	.563	.828	.786	.942	1.00	.923	.919

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	27	23	1	51	7	30	13	50	5	7	6	18	7	57	3	67	186
05:00 PM	9	16	0	25	3	22	16	41	6	4	3	13	10	72	1	83	162
05:15 PM	13	22	3	38	5	43	13	61	2	8	4	14	3	88	3	94	207
05:30 PM	9	16	1	26	3	24	17	44	4	14	2	20	6	64	0	70	160
Total Volume	58	77	5	140	18	119	59	196	17	33	15	65	26	281	7	314	715
% App. Total	41.4	55	3.6		9.2	60.7	30.1		26.2	50.8	23.1		8.3	89.5	2.2		
PHF	.537	.837	.417	.686	.643	.692	.868	.803	.708	.589	.625	.813	.650	.798	.583	.835	.864

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : Sherrill_Parkwest
 Site Code : 00000000
 Start Date : 5/2/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	PARKWEST BLVD Southbound				SHERRILL BLVD Westbound				PARKWEST BLVD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	0	0	0	0	13	20	0	33	7	0	6	13	0	18	21	39	85
07:15 AM	0	0	0	0	17	29	0	46	11	0	8	19	0	29	22	51	116
07:30 AM	0	0	0	0	18	39	0	57	24	0	9	33	0	34	53	87	177
07:45 AM	0	0	0	0	19	53	0	72	20	0	9	29	0	30	42	72	173
Total	0	0	0	0	67	141	0	208	62	0	32	94	0	111	138	249	551
08:00 AM	0	0	0	0	27	82	0	109	34	0	13	47	0	31	37	68	224
08:15 AM	0	0	0	0	14	51	0	65	38	0	2	40	0	21	36	57	162
08:30 AM	0	0	0	0	14	48	0	62	38	0	5	43	0	28	22	50	155
08:45 AM	0	0	0	0	11	51	0	62	42	0	12	54	0	34	27	61	177
Total	0	0	0	0	66	232	0	298	152	0	32	184	0	114	122	236	718
*** BREAK ***																	
11:00 AM	0	0	0	0	5	28	0	33	16	0	13	29	0	25	20	45	107
11:15 AM	0	0	0	0	7	21	0	28	15	0	8	23	0	24	27	51	102
11:30 AM	0	0	0	0	10	14	0	24	18	0	13	31	0	46	29	75	130
11:45 AM	0	0	0	0	6	28	0	34	16	0	10	26	0	36	23	59	119
Total	0	0	0	0	28	91	0	119	65	0	44	109	0	131	99	230	458
12:00 PM	0	0	0	0	13	30	0	43	31	0	12	43	0	65	33	98	184
12:15 PM	0	0	0	0	7	15	0	22	14	0	11	25	0	34	40	74	121
12:30 PM	0	0	0	0	21	23	0	44	28	0	7	35	0	36	34	70	149
12:45 PM	0	0	0	0	15	21	0	36	31	0	7	38	0	23	26	49	123
Total	0	0	0	0	56	89	0	145	104	0	37	141	0	158	133	291	577
*** BREAK ***																	
02:00 PM	0	0	0	0	8	22	0	30	39	0	10	49	0	29	28	57	136
02:15 PM	0	0	0	0	14	18	0	32	18	0	6	24	0	27	17	44	100
02:30 PM	0	0	0	0	19	29	0	48	18	0	12	30	0	32	21	53	131
02:45 PM	0	0	0	0	9	18	0	27	30	0	5	35	0	22	20	42	104
Total	0	0	0	0	50	87	0	137	105	0	33	138	0	110	86	196	471
03:00 PM	0	0	0	0	9	27	0	36	24	0	8	32	0	31	22	53	121
03:15 PM	0	0	0	0	13	19	0	32	15	0	12	27	0	27	24	51	110
03:30 PM	0	0	0	0	10	12	0	22	20	0	11	31	0	34	24	58	111
03:45 PM	0	0	0	0	13	23	0	36	22	0	10	32	0	33	33	66	134
Total	0	0	0	0	45	81	0	126	81	0	41	122	0	125	103	228	476
04:00 PM	0	0	0	0	6	11	0	17	32	0	13	45	0	41	32	73	135
04:15 PM	0	0	0	0	8	18	0	26	23	0	7	30	0	24	18	42	98
04:30 PM	0	0	0	0	8	14	0	22	32	0	8	40	0	55	31	86	148
04:45 PM	0	0	0	0	6	11	0	17	20	0	12	32	0	38	28	66	115
Total	0	0	0	0	28	54	0	82	107	0	40	147	0	158	109	267	496
05:00 PM	0	0	0	0	12	16	0	28	27	0	8	35	0	46	40	86	149
05:15 PM	0	0	0	0	6	26	0	32	23	0	11	34	0	59	41	100	166
05:30 PM	0	0	0	0	5	8	0	13	19	0	11	30	0	45	55	100	143
05:45 PM	0	0	0	0	8	23	0	31	14	0	9	23	0	30	40	70	124
Total	0	0	0	0	31	73	0	104	83	0	39	122	0	180	176	356	582
Grand Total	0	0	0	0	371	848	0	1219	759	0	298	1057	0	1087	966	2053	4329
Apprch %	0	0	0	0	30.4	69.6	0	28.2	71.8	0	28.2	24.4	0	52.9	47.1	47.4	
Total %	0	0	0	0	8.6	19.6	0	28.2	17.5	0	6.9	24.4	0	25.1	22.3	47.4	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : Sherrill_Parkwest
 Site Code : 00000000
 Start Date : 5/2/2017
 Page No : 2

Start Time	PARKWEST BLVD Southbound				SHERRILL BLVD Westbound				PARKWEST BLVD Northbound				SHERRILL BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	18	39	0	57	24	0	9	33	0	34	53	87	177
07:45 AM	0	0	0	0	19	53	0	72	20	0	9	29	0	30	42	72	173
08:00 AM	0	0	0	0	27	82	0	109	34	0	13	47	0	31	37	68	224
08:15 AM	0	0	0	0	14	51	0	65	38	0	2	40	0	21	36	57	162
Total Volume	0	0	0	0	78	225	0	303	116	0	33	149	0	116	168	284	736
% App. Total	0	0	0	0	25.7	74.3	0		77.9	0	22.1		0	40.8	59.2		
PHF	.000	.000	.000	.000	.722	.686	.000	.695	.763	.000	.635	.793	.000	.853	.792	.816	.821

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	0	0	13	30	0	43	31	0	12	43	0	65	33	98	184
12:15 PM	0	0	0	0	7	15	0	22	14	0	11	25	0	34	40	74	121
12:30 PM	0	0	0	0	21	23	0	44	28	0	7	35	0	36	34	70	149
12:45 PM	0	0	0	0	15	21	0	36	31	0	7	38	0	23	26	49	123
Total Volume	0	0	0	0	56	89	0	145	104	0	37	141	0	158	133	291	577
% App. Total	0	0	0	0	38.6	61.4	0		73.8	0	26.2		0	54.3	45.7		
PHF	.000	.000	.000	.000	.667	.742	.000	.824	.839	.000	.771	.820	.000	.608	.831	.742	.784

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	0	0	0	9	27	0	36	24	0	8	32	0	31	22	53	121
03:15 PM	0	0	0	0	13	19	0	32	15	0	12	27	0	27	24	51	110
03:30 PM	0	0	0	0	10	12	0	22	20	0	11	31	0	34	24	58	111
03:45 PM	0	0	0	0	13	23	0	36	22	0	10	32	0	33	33	66	134
Total Volume	0	0	0	0	45	81	0	126	81	0	41	122	0	125	103	228	476
% App. Total	0	0	0	0	35.7	64.3	0		66.4	0	33.6		0	54.8	45.2		
PHF	.000	.000	.000	.000	.865	.750	.000	.875	.844	.000	.854	.953	.000	.919	.780	.864	.888

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	12	16	0	28	27	0	8	35	0	46	40	86	149
05:15 PM	0	0	0	0	6	26	0	32	23	0	11	34	0	59	41	100	166
05:30 PM	0	0	0	0	5	8	0	13	19	0	11	30	0	45	55	100	143
05:45 PM	0	0	0	0	8	23	0	31	14	0	9	23	0	30	40	70	124
Total Volume	0	0	0	0	31	73	0	104	83	0	39	122	0	180	176	356	582
% App. Total	0	0	0	0	29.8	70.2	0		68	0	32		0	50.6	49.4		
PHF	.000	.000	.000	.000	.646	.702	.000	.813	.769	.000	.886	.871	.000	.763	.800	.890	.877

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : Parkwest_Park40
 Site Code : 00000003
 Start Date : 5/2/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	PARK 40 BLVD Southbound				PARKWEST BLVD Westbound				PARK 40 BLVD Northbound				PARKWEST BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	18	0	1	19	0	54	4	58	0	0	0	0	0	43	0	43	120
07:15 AM	41	0	2	43	0	51	5	56	0	0	0	0	0	80	0	80	179
07:30 AM	85	0	8	93	0	122	3	125	0	0	0	0	0	87	0	87	305
07:45 AM	98	0	5	103	0	80	10	90	0	0	0	0	0	53	0	53	246
Total	242	0	16	258	0	307	22	329	0	0	0	0	0	263	0	263	850
08:00 AM	110	0	15	125	0	110	2	112	0	0	0	0	0	69	0	69	306
08:15 AM	32	0	12	44	0	102	1	103	0	0	0	0	2	45	0	47	194
08:30 AM	33	0	0	33	0	21	2	23	0	0	0	0	0	91	0	91	147
08:45 AM	27	0	1	28	0	75	0	75	0	0	0	0	0	91	0	91	194
Total	202	0	28	230	0	308	5	313	0	0	0	0	2	296	0	298	841
*** BREAK ***																	
11:00 AM	4	0	2	6	0	72	0	72	0	0	0	0	0	94	0	94	172
11:15 AM	9	0	4	13	0	76	0	76	0	0	0	0	0	71	0	71	160
11:30 AM	18	0	5	23	0	77	0	77	0	0	0	0	0	102	0	102	202
11:45 AM	7	0	0	7	0	49	0	49	0	0	0	0	0	77	0	77	133
Total	38	0	11	49	0	274	0	274	0	0	0	0	0	344	0	344	667
12:00 PM	6	0	0	6	0	61	0	61	0	0	0	0	0	94	0	94	161
12:15 PM	28	0	3	31	0	54	0	54	0	0	0	0	0	88	0	88	173
12:30 PM	76	0	0	76	0	24	0	24	0	0	0	0	0	88	0	88	188
12:45 PM	37	0	0	37	0	85	0	85	0	0	0	0	0	97	0	97	219
Total	147	0	3	150	0	224	0	224	0	0	0	0	0	367	0	367	741
*** BREAK ***																	
02:00 PM	43	0	0	43	0	39	0	39	0	0	0	0	3	120	0	123	205
02:15 PM	18	0	0	18	0	64	0	64	0	0	0	0	0	57	0	57	139
02:30 PM	13	0	0	13	0	81	0	81	0	0	0	0	0	95	0	95	189
02:45 PM	3	0	2	5	0	66	0	66	0	0	0	0	0	93	0	93	164
Total	77	0	2	79	0	250	0	250	0	0	0	0	3	365	0	368	697
03:00 PM	3	0	8	11	0	35	0	35	0	0	0	0	0	65	0	65	111
03:15 PM	4	0	0	4	0	45	0	45	0	0	0	0	0	52	0	52	101
03:30 PM	0	0	10	10	0	45	0	45	0	0	0	0	0	69	0	69	124
03:45 PM	0	0	0	0	0	31	9	40	0	0	0	0	0	43	0	43	83
Total	7	0	18	25	0	156	9	165	0	0	0	0	0	229	0	229	419
04:00 PM	0	0	0	0	0	28	0	28	0	0	0	0	0	64	0	64	92
04:15 PM	0	0	0	0	0	49	0	49	0	0	0	0	0	65	0	65	114
04:30 PM	8	0	0	8	0	7	0	7	0	0	0	0	0	79	0	79	94
04:45 PM	0	0	0	0	0	55	0	55	0	0	0	0	0	66	0	66	121
Total	8	0	0	8	0	139	0	139	0	0	0	0	0	274	0	274	421
05:00 PM	0	0	0	0	0	97	0	97	0	0	0	0	0	85	0	85	182
05:15 PM	0	0	0	0	0	30	0	30	0	0	0	0	0	33	0	33	63
05:30 PM	7	0	0	7	0	41	0	41	0	0	0	0	0	67	0	67	115
05:45 PM	3	0	0	3	0	62	0	62	0	0	0	0	0	67	0	67	132
Total	10	0	0	10	0	230	0	230	0	0	0	0	0	252	0	252	492
Grand Total	731	0	78	809	0	1888	36	1924	0	0	0	0	5	2390	0	2395	5128
Apprch %	90.4	0	9.6		0	98.1	1.9		0	0	0	0	0.2	99.8	0		
Total %	14.3	0	1.5	15.8	0	36.8	0.7	37.5	0	0	0	0	0.1	46.6	0	46.7	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
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File Name : Parkwest_Park40
 Site Code : 00000003
 Start Date : 5/2/2017
 Page No : 2

Start Time	PARK 40 BLVD Southbound				PARKWEST BLVD Westbound				PARK 40 BLVD Northbound				PARKWEST BLVD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	85	0	8	93	0	122	3	125	0	0	0	0	0	87	0	87	305
07:45 AM	98	0	5	103	0	80	10	90	0	0	0	0	0	53	0	53	246
08:00 AM	110	0	15	125	0	110	2	112	0	0	0	0	0	69	0	69	306
08:15 AM	32	0	12	44	0	102	1	103	0	0	0	0	2	45	0	47	194
Total Volume	325	0	40	365	0	414	16	430	0	0	0	0	2	254	0	256	1051
% App. Total	89	0	11		0	96.3	3.7		0	0	0	0	0.8	99.2	0		
PHF	.739	.000	.667	.730	.000	.848	.400	.860	.000	.000	.000	.000	.250	.730	.000	.736	.859

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	6	0	0	6	0	61	0	61	0	0	0	0	0	94	0	94	161
12:15 PM	28	0	3	31	0	54	0	54	0	0	0	0	0	88	0	88	173
12:30 PM	76	0	0	76	0	24	0	24	0	0	0	0	0	88	0	88	188
12:45 PM	37	0	0	37	0	85	0	85	0	0	0	0	0	97	0	97	219
Total Volume	147	0	3	150	0	224	0	224	0	0	0	0	0	367	0	367	741
% App. Total	98	0	2		0	100	0		0	0	0	0	0	100	0		
PHF	.484	.000	.250	.493	.000	.659	.000	.659	.000	.000	.000	.000	.000	.946	.000	.946	.846

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	43	0	0	43	0	39	0	39	0	0	0	0	3	120	0	123	205
02:15 PM	18	0	0	18	0	64	0	64	0	0	0	0	0	57	0	57	139
02:30 PM	13	0	0	13	0	81	0	81	0	0	0	0	0	95	0	95	189
02:45 PM	3	0	2	5	0	66	0	66	0	0	0	0	0	93	0	93	164
Total Volume	77	0	2	79	0	250	0	250	0	0	0	0	3	365	0	368	697
% App. Total	97.5	0	2.5		0	100	0		0	0	0	0	0.8	99.2	0		
PHF	.448	.000	.250	.459	.000	.772	.000	.772	.000	.000	.000	.000	.250	.760	.000	.748	.850

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	49	0	49	0	0	0	0	0	65	0	65	114
04:30 PM	8	0	0	8	0	7	0	7	0	0	0	0	0	79	0	79	94
04:45 PM	0	0	0	0	0	55	0	55	0	0	0	0	0	66	0	66	121
05:00 PM	0	0	0	0	0	97	0	97	0	0	0	0	0	85	0	85	182
Total Volume	8	0	0	8	0	208	0	208	0	0	0	0	0	295	0	295	511
% App. Total	100	0	0		0	100	0		0	0	0	0	0	100	0		
PHF	.250	.000	.000	.250	.000	.536	.000	.536	.000	.000	.000	.000	.000	.868	.000	.868	.702

CDM SMITH Inc.
 1100 Marion Street, Suite 300
 Knoxville, TN 37921
 (865) 963-4300

File Name : pellissippi_dutchtown
 Site Code : 00000005
 Start Date : 5/10/2017
 Page No : 1

Groups Printed- Unshifted

Start Time	PELLISSIPPI PKWY Southbound				DUTCHTOWN RD Westbound				SHERRILL Northbound				DUTCHTOWN RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	48	44	58	150	4	94	51	149	4	4	0	8	22	42	47	111	418
07:15 AM	47	60	55	162	1	71	17	89	5	10	0	15	13	52	41	106	372
07:30 AM	92	87	92	271	3	106	38	147	45	21	0	66	20	94	44	158	642
07:45 AM	73	67	43	183	5	82	47	134	65	19	4	88	26	59	19	104	509
Total	260	258	248	766	13	353	153	519	119	54	4	177	81	247	151	479	1941
08:00 AM	75	85	69	229	4	63	38	105	70	21	3	94	40	66	18	124	552
08:15 AM	64	77	51	192	5	22	33	60	41	6	0	47	27	13	27	67	366
08:30 AM	75	48	33	156	0	79	19	98	34	16	0	50	22	67	18	107	411
08:45 AM	60	38	51	149	1	58	18	77	21	11	0	32	8	18	37	63	321
Total	274	248	204	726	10	222	108	340	166	54	3	223	97	164	100	361	1650
*** BREAK ***																	
11:00 AM	36	27	60	123	1	40	10	51	19	21	0	40	33	36	16	85	299
11:15 AM	24	44	55	123	15	12	23	50	15	40	5	60	25	25	30	80	313
11:30 AM	19	56	20	95	0	14	31	45	10	67	1	78	34	35	14	83	301
11:45 AM	3	19	23	45	7	19	19	45	19	47	2	68	32	48	35	115	273
Total	82	146	158	386	23	85	83	191	63	175	8	246	124	144	95	363	1186
12:00 PM	20	47	44	111	6	10	12	28	41	54	6	101	32	40	19	91	331
12:15 PM	21	43	5	69	4	29	17	50	14	44	1	59	12	34	18	64	242
12:30 PM	33	66	17	116	7	11	18	36	32	55	0	87	15	33	14	62	301
12:45 PM	25	37	49	111	4	20	1	25	11	40	3	54	9	9	18	36	226
Total	99	193	115	407	21	70	48	139	98	193	10	301	68	116	69	253	1100
*** BREAK ***																	
02:00 PM	27	36	34	97	15	58	9	82	16	40	1	57	18	28	31	77	313
02:15 PM	42	38	13	93	2	46	13	61	12	22	0	34	17	42	27	86	274
02:30 PM	37	46	35	118	6	48	6	60	11	38	9	58	30	33	27	90	326
02:45 PM	19	31	35	85	4	51	8	63	3	39	0	42	12	29	11	52	242
Total	125	151	117	393	27	203	36	266	42	139	10	191	77	132	96	305	1155
03:00 PM	46	26	13	85	8	41	9	58	6	37	2	45	21	28	18	67	255
03:15 PM	55	16	26	97	0	39	0	39	12	34	0	46	19	20	12	51	233
03:30 PM	27	107	21	155	17	41	41	99	68	35	4	107	33	28	17	78	439
03:45 PM	13	43	19	75	10	55	15	80	142	13	2	157	28	69	32	129	441
Total	141	192	79	412	35	176	65	276	228	119	8	355	101	145	79	325	1368
04:00 PM	54	47	14	115	3	94	16	113	86	11	4	101	24	96	21	141	470
04:15 PM	58	45	11	114	2	105	10	117	77	46	3	126	45	61	39	145	502
04:30 PM	51	34	28	113	4	77	12	93	69	55	0	124	67	101	19	187	517
04:45 PM	70	28	18	116	1	95	8	104	66	61	4	131	47	111	27	185	536
Total	233	154	71	458	10	371	46	427	298	173	11	482	183	369	106	658	2025
05:00 PM	68	24	25	117	0	118	9	127	88	66	5	159	91	186	20	297	700
05:15 PM	63	42	38	143	2	92	11	105	114	41	0	155	61	146	18	225	628
05:30 PM	89	53	16	158	8	82	13	103	73	36	4	113	38	95	21	154	528
05:45 PM	59	40	18	117	3	87	10	100	67	44	1	112	40	91	17	148	477
Total	279	159	97	535	13	379	43	435	342	187	10	539	230	518	76	824	2333
Grand Total	1493	1501	1089	4083	152	1859	582	2593	1356	1094	64	2514	961	1835	772	3568	12758
Apprch %	36.6	36.8	26.7		5.9	71.7	22.4		53.9	43.5	2.5		26.9	51.4	21.6		
Total %	11.7	11.8	8.5	32	1.2	14.6	4.6	20.3	10.6	8.6	0.5	19.7	7.5	14.4	6.1	28	

CDM SMITH Inc.
 1100 Marion Street, Suite 300
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File Name : pellissippi_dutchtown
 Site Code : 00000005
 Start Date : 5/10/2017
 Page No : 2

Start Time	PELLISSIPPI PKWY Southbound				DUTCHTOWN RD Westbound				SHERRILL Northbound				DUTCHTOWN RD Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	47	60	55	162	1	71	17	89	5	10	0	15	13	52	41	106	372
07:30 AM	92	87	92	271	3	106	38	147	45	21	0	66	20	94	44	158	642
07:45 AM	73	67	43	183	5	82	47	134	65	19	4	88	26	59	19	104	509
08:00 AM	75	85	69	229	4	63	38	105	70	21	3	94	40	66	18	124	552
Total Volume	287	299	259	845	13	322	140	475	185	71	7	263	99	271	122	492	2075
% App. Total	34	35.4	30.7		2.7	67.8	29.5		70.3	27	2.7		20.1	55.1	24.8		
PHF	.780	.859	.704	.780	.650	.759	.745	.808	.661	.845	.438	.699	.619	.721	.693	.778	.808

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	24	44	55	123	15	12	23	50	15	40	5	60	25	25	30	80	313
11:30 AM	19	56	20	95	0	14	31	45	10	67	1	78	34	35	14	83	301
11:45 AM	3	19	23	45	7	19	19	45	19	47	2	68	32	48	35	115	273
12:00 PM	20	47	44	111	6	10	12	28	41	54	6	101	32	40	19	91	331
Total Volume	66	166	142	374	28	55	85	168	85	208	14	307	123	148	98	369	1218
% App. Total	17.6	44.4	38		16.7	32.7	50.6		27.7	67.8	4.6		33.3	40.1	26.6		
PHF	.688	.741	.645	.760	.467	.724	.685	.840	.518	.776	.583	.760	.904	.771	.700	.802	.920

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	46	26	13	85	8	41	9	58	6	37	2	45	21	28	18	67	255
03:15 PM	55	16	26	97	0	39	0	39	12	34	0	46	19	20	12	51	233
03:30 PM	27	107	21	155	17	41	41	99	68	35	4	107	33	28	17	78	439
03:45 PM	13	43	19	75	10	55	15	80	142	13	2	157	28	69	32	129	441
Total Volume	141	192	79	412	35	176	65	276	228	119	8	355	101	145	79	325	1368
% App. Total	34.2	46.6	19.2		12.7	63.8	23.6		64.2	33.5	2.3		31.1	44.6	24.3		
PHF	.641	.449	.760	.665	.515	.800	.396	.697	.401	.804	.500	.565	.765	.525	.617	.630	.776

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	70	28	18	116	1	95	8	104	66	61	4	131	47	111	27	185	536
05:00 PM	68	24	25	117	0	118	9	127	88	66	5	159	91	186	20	297	700
05:15 PM	63	42	38	143	2	92	11	105	114	41	0	155	61	146	18	225	628
05:30 PM	89	53	16	158	8	82	13	103	73	36	4	113	38	95	21	154	528
Total Volume	290	147	97	534	11	387	41	439	341	204	13	558	237	538	86	861	2392
% App. Total	54.3	27.5	18.2		2.5	88.2	9.3		61.1	36.6	2.3		27.5	62.5	10		
PHF	.815	.693	.638	.845	.344	.820	.788	.864	.748	.773	.650	.877	.651	.723	.796	.725	.854

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	7	4	4	5		5			5	
12:15 AM	4	1	1	7		4			4	
12:30 AM	7	2	2	4		4			4	
12:45 AM	2	0	0	2		1			1	
1:00 AM	6	3	3	3		4			4	
1:15 AM	2	2	2	5		3			3	
1:30 AM	1	1	1	2		1			1	
1:45 AM	0	0	2	0		1			1	
2:00 AM	2	1	1	3		2			2	
2:15 AM	0	0	2	1		1			1	
2:30 AM	5	3	3	7		5			5	
2:45 AM	0	0	3	0		1			1	
3:00 AM	5	0	0	3		3			3	
3:15 AM	2	5	5	1		3			3	
3:30 AM	1	1	1	0		1			1	
3:45 AM	1	0	0	2		1			1	
4:00 AM	0	0	1	0		0			0	
4:15 AM	0	0	0	1		0			0	
4:30 AM	3	2	2	0		2			2	
4:45 AM	0	1	1	1		1			1	
5:00 AM	1	0	0	1		1			1	
5:15 AM	2	1	1	2		2			2	
5:30 AM	4	5	5	4		4			4	
5:45 AM	8	6	6	9		8			8	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

LOCATION: Sherrill Blvd Btwn Park 40N & Park W SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W CITY/STATE: Knoxville, TN		QC JOB #: 14381006 DIRECTION: NB DATE: May 16 2017 - May 18 2017								
Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	19	27	29	29	25	25			25	
6:15 AM	34	25	27	27	29	29			29	
6:30 AM	32	36	32	32	33	33			33	
6:45 AM	20	21	22	22	21	21			21	
7:00 AM	43	27	29	29	33	33			33	
7:15 AM	43	47	51	51	47	47			47	
7:30 AM	51	60	52	52	54	54			54	
7:45 AM	50	54	64	64	56	56			56	
8:00 AM	40	31	58	58	43	43			43	
8:15 AM	32	26	31	31	30	30			30	
8:30 AM	34	32	32	32	33	33			33	
8:45 AM	29	22	30	30	27	27			27	
9:00 AM	23	25	22	22	23	23			23	
9:15 AM	25	28	29	29	27	27			27	
9:30 AM	35	39	24	24	33	33			33	
9:45 AM	26	29	38	38	31	31			31	
10:00 AM	27	27	40	40	31	31			31	
10:15 AM	42	49	35	35	42	42			42	
10:30 AM	40	32	40	40	37	37			37	
10:45 AM	28	37	45	45	37	37			37	
11:00 AM	46	43	51	51	47	47			47	
11:15 AM	49	38	50	50	46	46			46	
11:30 AM	58	56	67	67	60	60			60	
11:45 AM	59	68	72	72	66	66			66	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

		QC JOB #: 14381006 DIRECTION: NB DATE: May 16 2017 - May 18 2017								
		LOCATION: Sherrill Blvd Btwn Park 40N & Park W SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W CITY/STATE: Knoxville, TN								
Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	66	82	83	63	77	77			77	
12:15 PM	64	61	63	63	63	63			63	
12:30 PM	68	53	58	58	60	60			60	
12:45 PM	50	43	49	49	47	47			47	
1:00 PM	42	56	29	29	42	42			42	
1:15 PM	41	43	58	58	47	47			47	
1:30 PM	59	45	40	40	48	48			48	
1:45 PM	39	40	44	44	41	41			41	
2:00 PM	34	35	41	41	37	37			37	
2:15 PM	48	50	30	30	43	43			43	
2:30 PM	62	52	54	54	56	56			56	
2:45 PM	48	42	49	49	46	46			46	
3:00 PM	61	48	62	62	57	57			57	
3:15 PM	57	46	50	50	51	51			51	
3:30 PM	61	60	66	66	62	62			62	
3:45 PM	63	64	57	57	61	61			61	
4:00 PM	49	61	48	48	53	53			53	
4:15 PM	80	61	69	69	70	70			70	
4:30 PM	87	79	78	78	81	81			81	
4:45 PM	71	77	66	66	71	71			71	
5:00 PM	94	114	122	122	110	110			110	
5:15 PM	75	112	73	73	87	87			87	
5:30 PM	70	73	86	86	76	76			76	
5:45 PM	56	60	55	55	57	57			57	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

		LOCATION: Sherrill Blvd Btwn Park 40N & Park W							QC JOB #: 14381006	
		SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W							DIRECTION: NB	
		CITY/STATE: Knoxville, TN							DATE: May 16 2017 - May 18 2017	
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	48	44	44	53		48			48	
6:15 PM	44	29	29	37		37			37	
6:30 PM	21	30	30	27		26			26	
6:45 PM	26	39	39	27		31			31	
7:00 PM	33	27	27	39		33			33	
7:15 PM	33	28	28	25		29			29	
7:30 PM	35	19	19	22		25			25	
7:45 PM	27	24	24	22		24			24	
8:00 PM	18	31	31	19		23			23	
8:15 PM	16	27	27	17		20			20	
8:30 PM	29	21	21	12		21			21	
8:45 PM	19	25	25	17		20			20	
9:00 PM	11	16	16	14		14			14	
9:15 PM	7	8	8	13		9			9	
9:30 PM	8	7	7	12		9			9	
9:45 PM	14	10	10	9		11			11	
10:00 PM	16	14	14	6		12			12	
10:15 PM	5	12	12	5		7			7	
10:30 PM	3	3	3	6		4			4	
10:45 PM	6	14	14	11		10			10	
11:00 PM	7	18	18	4		10			10	
11:15 PM	3	12	12	13		9			9	
11:30 PM	3	6	6	11		7			7	
11:45 PM	8	1	1	6		5			5	
Day Total	2833	2847	2890	2856	2856	2856			2856	
% Weekday Average	99.2%	99.7%	101.2%							
% Week Average	99.2%	99.7%	101.2%	100.0%						
AM Peak	11:45 AM	11:45 AM	11:45 AM	11:45 AM	11:45 AM	11:45 AM			11:45 AM	
Volume	59	68	72	66		66			66	
PM Peak	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM			5:00 PM	
Volume	94	114	122	110		110			110	
<i>Comments:</i>										

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	1	3	3	3		2			2	
12:15 AM	1	2	2	2		2			2	
12:30 AM	5	0	0	0		2			2	
12:45 AM	7	0	0	1		3			3	
1:00 AM	6	0	0	1		2			2	
1:15 AM	3	1	1	2		2			2	
1:30 AM	6	1	1	2		3			3	
1:45 AM	1	2	1	0		1			1	
2:00 AM	6	1	1	1		3			3	
2:15 AM	0	1	1	2		1			1	
2:30 AM	0	1	1	3		1			1	
2:45 AM	2	0	0	1		1			1	
3:00 AM	0	0	0	1		0			0	
3:15 AM	1	0	0	1		1			1	
3:30 AM	1	1	1	0		1			1	
3:45 AM	0	1	1	3		1			1	
4:00 AM	6	4	4	3		4			4	
4:15 AM	2	2	2	4		3			3	
4:30 AM	7	4	4	7		6			6	
4:45 AM	12	10	10	7		10			10	
5:00 AM	3	7	7	8		6			6	
5:15 AM	20	19	19	17		19			19	
5:30 AM	24	25	25	21		23			23	
5:45 AM	28	25	25	35		29			29	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

LOCATION: Sherrill Blvd Btwn Park 40N & Park W
SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W
CITY/STATE: Knoxville, TN

QC JOB #: 14381006

DIRECTION: SB

DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	19	24	24	24		22			22	
6:15 AM	25	17	17	24		22			22	
6:30 AM	30	31	31	27		29			29	
6:45 AM	36	47	47	38		40			40	
7:00 AM	35	29	29	33		32			32	
7:15 AM	61	69	69	65		65			65	
7:30 AM	91	77	77	90		86			86	
7:45 AM	90	89	89	103		94			94	
8:00 AM	97	83	83	94		91			91	
8:15 AM	92	94	94	83		90			90	
8:30 AM	86	83	83	90		86			86	
8:45 AM	92	106	106	97		98			98	
9:00 AM	75	62	62	68		68			68	
9:15 AM	76	65	65	51		64			64	
9:30 AM	56	43	43	45		48			48	
9:45 AM	48	52	52	48		49			49	
10:00 AM	33	43	43	44		40			40	
10:15 AM	37	45	45	44		42			42	
10:30 AM	31	31	31	37		33			33	
10:45 AM	46	44	44	40		43			43	
11:00 AM	24	24	24	32		27			27	
11:15 AM	35	31	31	36		34			34	
11:30 AM	40	33	33	50		41			41	
11:45 AM	49	44	44	46		46			46	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	
Comments:	

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	37	37	37	60		45			45	
12:15 PM	53	53	70	57		60			60	
12:30 PM	82	82	69	62		71			71	
12:45 PM	101	101	91	82		91			91	
1:00 PM	67	67	51	77		65			65	
1:15 PM	66	66	79	59		68			68	
1:30 PM	66	66	61	71		66			66	
1:45 PM	69	69	60	57		62			62	
2:00 PM	31	31	41	37		36			36	
2:15 PM	61	61	37	46		48			48	
2:30 PM	36	36	28	48		37			37	
2:45 PM	38	38	46	44		43			43	
3:00 PM	37	37	61	43		47			47	
3:15 PM	38	38	59	38		45			45	
3:30 PM	41	41	39	42		41			41	
3:45 PM	46	46	48	53		49			49	
4:00 PM	25	25	40	43		36			36	
4:15 PM	41	41	39	27		36			36	
4:30 PM	48	48	43	37		43			43	
4:45 PM	33	33	41	44		39			39	
5:00 PM	41	41	46	49		45			45	
5:15 PM	42	42	39	41		41			41	
5:30 PM	46	46	35	41		41			41	
5:45 PM	31	31	30	27		29			29	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	22	37	20	26	26	26			26	
6:15 PM	33	33	36	34	34	34			34	
6:30 PM	55	45	44	48	48	48			48	
6:45 PM	15	22	11	16	16	16			16	
7:00 PM	25	24	23	24	24	24			24	
7:15 PM	26	20	23	23	23	23			23	
7:30 PM	18	22	23	21	21	21			21	
7:45 PM	23	22	17	21	21	21			21	
8:00 PM	16	16	15	16	16	16			16	
8:15 PM	9	10	10	10	10	10			10	
8:30 PM	12	12	9	11	11	11			11	
8:45 PM	11	13	9	11	11	11			11	
9:00 PM	10	13	6	10	10	10			10	
9:15 PM	7	4	3	5	5	5			5	
9:30 PM	8	13	13	11	11	11			11	
9:45 PM	9	6	6	7	7	7			7	
10:00 PM	1	5	5	4	4	4			4	
10:15 PM	4	3	6	4	4	4			4	
10:30 PM	3	6	2	4	4	4			4	
10:45 PM	2	3	6	4	4	4			4	
11:00 PM	2	6	5	4	4	4			4	
11:15 PM	2	5	4	4	4	4			4	
11:30 PM	3	2	1	2	2	2			2	
11:45 PM	4	1	3	3	3	3			3	
Day Total	2942	2909	2919	2923	2923	2923			2923	
% Weekday Average	100.7%	99.5%	99.9%							
% Week Average	100.7%	99.5%	99.9%	100.0%						
AM Peak	8:00 AM	8:45 AM	7:45 AM	8:45 AM					8:45 AM	
Volume	97	106	103	98					98	
PM Peak	12:45 PM	12:45 PM	12:45 PM	12:45 PM					12:45 PM	
Volume	101	91	82	91					91	
<i>Comments:</i>										

LOCATION: Sherrill Blvd Btwn Park 40N & Park W
SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W
CITY/STATE: Knoxville, TN

QC JOB #: 14381006

DIRECTION: NB/SB

DATE: May 16 2017 - May 18 2017

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	8	7	8	8		8			8	
12:15 AM	5	3	3	9		6			6	
12:30 AM	12	2	2	4		6			6	
12:45 AM	9	0	0	3		4			4	
1:00 AM	12	3	3	4		6			6	
1:15 AM	5	3	3	7		5			5	
1:30 AM	7	2	2	4		4			4	
1:45 AM	1	4	4	0		2			2	
2:00 AM	8	2	2	4		5			5	
2:15 AM	0	3	3	3		2			2	
2:30 AM	5	4	4	10		6			6	
2:45 AM	2	3	3	1		2			2	
3:00 AM	5	0	0	4		3			3	
3:15 AM	3	5	5	2		3			3	
3:30 AM	2	2	2	0		1			1	
3:45 AM	1	1	1	5		2			2	
4:00 AM	6	5	5	3		5			5	
4:15 AM	2	2	2	5		3			3	
4:30 AM	10	6	6	7		8			8	
4:45 AM	12	11	11	8		10			10	
5:00 AM	4	7	7	9		7			7	
5:15 AM	22	20	20	19		20			20	
5:30 AM	28	30	30	25		28			28	
5:45 AM	36	31	31	44		37			37	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	

Comments:

		LOCATION: Sherrill Blvd Btwn Park 40N & Park W SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W CITY/STATE: Knoxville, TN							QC JOB #: 14381006 DIRECTION: NB/SB DATE: May 16 2017 - May 18 2017	
Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	38	51	53	47		47			47	
6:15 AM	59	42	51	51		51			51	
6:30 AM	62	67	59	63		63			63	
6:45 AM	56	68	60	61		61			61	
7:00 AM	78	56	62	65		65			65	
7:15 AM	104	116	116	112		112			112	
7:30 AM	142	137	142	140		140			140	
7:45 AM	140	143	167	150		150			150	
8:00 AM	137	114	152	134		134			134	
8:15 AM	124	120	114	119		119			119	
8:30 AM	120	115	122	119		119			119	
8:45 AM	121	128	127	125		125			125	
9:00 AM	98	87	90	92		92			92	
9:15 AM	101	93	80	91		91			91	
9:30 AM	91	82	69	81		81			81	
9:45 AM	74	81	86	80		80			80	
10:00 AM	60	70	84	71		71			71	
10:15 AM	79	94	79	84		84			84	
10:30 AM	71	63	77	70		70			70	
10:45 AM	74	81	85	80		80			80	
11:00 AM	70	67	83	73		73			73	
11:15 AM	84	69	86	80		80			80	
11:30 AM	98	89	117	101		101			101	
11:45 AM	108	112	118	113		113			113	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

		LOCATION: Sherrill Blvd Btwn Park 40N & Park W							QC JOB #: 14381006	
		SPECIFIC LOCATION: Sherrill Blvd Btwn Park 40N & Park W							DIRECTION: NB/SB	
		CITY/STATE: Knoxville, TN							DATE: May 16 2017 - May 18 2017	
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	103	119	143	122	123	122			122	
12:15 PM	117	131	120	123	123	123			123	
12:30 PM	150	122	120	131	131	131			131	
12:45 PM	151	134	106	107	107	107			139	
1:00 PM	109	107	117	115	115	115			107	
1:15 PM	107	122	111	114	114	114			115	
1:30 PM	125	106	101	103	103	103			114	
1:45 PM	108	100	78	73	73	73			103	
2:00 PM	65	76	76	91	91	91			73	
2:15 PM	109	87	102	93	93	93			91	
2:30 PM	98	80	93	89	89	89			93	
2:45 PM	86	88	105	104	104	104			89	
3:00 PM	98	109	88	96	96	96			104	
3:15 PM	95	105	88	103	103	103			96	
3:30 PM	102	99	108	110	110	110			103	
3:45 PM	109	112	110	89	89	89			110	
4:00 PM	74	101	91	106	106	106			89	
4:15 PM	121	100	96	124	124	124			106	
4:30 PM	135	122	115	111	111	111			124	
4:45 PM	104	118	110	155	155	155			111	
5:00 PM	135	160	171	127	127	127			155	
5:15 PM	117	151	114	117	117	117			127	
5:30 PM	116	108	127	86	86	86			117	
5:45 PM	87	90	82			86			86	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	70	81	73	73	75	75			75	
6:15 PM	77	62	73	71	74	71			71	
6:30 PM	76	75	71	38	47	74			74	
6:45 PM	41	61	62	48	57	47			47	
7:00 PM	58	51	45	39	52	57			57	
7:15 PM	59	48	45	34	46	52			52	
7:30 PM	53	41	46	34	45	46			46	
7:45 PM	50	46	47	34	45	45			45	
8:00 PM	34	47	37	27	38	38			38	
8:15 PM	25	37	33	21	30	30			30	
8:30 PM	41	33	38	26	32	32			32	
8:45 PM	30	38	29	20	31	31			31	
9:00 PM	21	29	12	16	23	23			23	
9:15 PM	14	12	16	25	14	14			14	
9:30 PM	16	20	15	15	20	20			20	
9:45 PM	23	16	11	11	18	18			18	
10:00 PM	17	19	11	11	16	16			16	
10:15 PM	9	15	8	8	12	12			12	
10:30 PM	6	9	17	17	8	8			8	
10:45 PM	8	17	9	9	14	14			14	
11:00 PM	9	24	17	17	14	14			14	
11:15 PM	5	17	12	12	13	13			13	
11:30 PM	6	8	8	12	9	9			9	
11:45 PM	12	2	9	9	8	8			8	
Day Total	5775	5756	5809	5780	5780	5780			5780	
% Weekday Average	99.9%	99.6%	100.5%							
% Week Average	99.9%	99.6%	100.5%			100.0%				
AM Peak	7:30 AM	7:45 AM	7:45 AM			7:45 AM			7:45 AM	
Volume	142	143	167			150			150	
PM Peak	12:45 PM	5:00 PM	5:00 PM			5:00 PM			5:00 PM	
Volume	151	160	171			155			155	
<i>Comments:</i>										

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: EB
DATE: May 16 2017 - May 18 2017

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	8	7	2	2	6	6			6	
12:15 AM	3	5	7	7	5	5			5	
12:30 AM	2	3	8	8	4	4			4	
12:45 AM	4	3	4	4	4	4			4	
1:00 AM	2	2	3	3	2	2			2	
1:15 AM	2	2	1	1	2	2			2	
1:30 AM	2	3	4	4	3	3			3	
1:45 AM	2	1	1	1	1	1			1	
2:00 AM	6	1	3	3	3	3			3	
2:15 AM	3	4	6	6	4	4			4	
2:30 AM	1	6	5	5	4	4			4	
2:45 AM	3	5	1	1	3	3			3	
3:00 AM	2	3	4	4	3	3			3	
3:15 AM	0	0	1	1	0	0			0	
3:30 AM	1	4	0	0	2	2			2	
3:45 AM	3	1	1	1	2	2			2	
4:00 AM	2	2	3	3	2	2			2	
4:15 AM	1	0	6	6	2	2			2	
4:30 AM	0	2	2	2	1	1			1	
4:45 AM	2	1	0	0	1	1			1	
5:00 AM	3	2	5	5	3	3			3	
5:15 AM	2	1	2	2	2	2			2	
5:30 AM	6	6	3	3	5	5			5	
5:45 AM	7	7	8	8	7	7			7	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	

Comments:

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: EB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	7	12	11	11	10	10			10	
6:15 AM	11	7	5	8	8	8			8	
6:30 AM	11	10	16	12	12	12			12	
6:45 AM	10	15	17	14	14	14			14	
7:00 AM	21	27	34	27	27	27			27	
7:15 AM	42	40	36	39	39	39			39	
7:30 AM	46	52	41	46	46	46			46	
7:45 AM	64	60	76	67	67	67			67	
8:00 AM	37	47	51	45	45	45			45	
8:15 AM	37	38	50	42	42	42			42	
8:30 AM	54	49	43	49	49	49			49	
8:45 AM	51	53	51	52	52	52			52	
9:00 AM	49	63	50	54	54	54			54	
9:15 AM	52	40	43	45	45	45			45	
9:30 AM	56	58	53	56	56	56			56	
9:45 AM	65	58	57	60	60	60			60	
10:00 AM	47	59	47	51	51	51			51	
10:15 AM	68	78	64	70	70	70			70	
10:30 AM	59	54	69	61	61	61			61	
10:45 AM	56	51	63	57	57	57			57	
11:00 AM	66	69	70	68	68	68			68	
11:15 AM	62	75	69	69	69	69			69	
11:30 AM	79	76	77	77	77	77			77	
11:45 AM	92	99	98	96	96	96			96	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	
Comments:	

QC JOB #: 14381007 DIRECTION: EB DATE: May 16 2017 - May 18 2017										
LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N CITY/STATE: Knoxville, TN										
Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	95	102	99	99	99	99			99	
12:15 PM	67	88	88	88	88	81			81	
12:30 PM	83	80	80	89	89	84			84	
12:45 PM	72	76	71	71	71	73			73	
1:00 PM	73	63	47	47	47	61			61	
1:15 PM	51	70	60	60	60	60			60	
1:30 PM	73	82	64	64	64	73			73	
1:45 PM	64	73	64	64	64	67			67	
2:00 PM	76	70	64	64	64	70			70	
2:15 PM	59	63	63	69	69	64			64	
2:30 PM	71	82	69	69	69	74			74	
2:45 PM	66	80	73	73	73	73			73	
3:00 PM	80	63	93	93	93	79			79	
3:15 PM	70	80	80	77	77	76			76	
3:30 PM	90	69	82	82	82	80			80	
3:45 PM	91	80	77	77	77	83			83	
4:00 PM	88	100	104	104	104	97			97	
4:15 PM	78	73	75	75	75	75			75	
4:30 PM	98	110	80	80	80	96			96	
4:45 PM	110	103	84	84	84	99			99	
5:00 PM	146	164	145	145	145	152			152	
5:15 PM	126	139	126	126	126	130			130	
5:30 PM	120	123	110	110	110	118			118	
5:45 PM	79	75	101	101	101	85			85	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: EB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	70	72	60	67	67	67			67	
6:15 PM	40	64	49	51	51	51			51	
6:30 PM	55	41	54	50	50	50			50	
6:45 PM	41	41	42	41	41	41			41	
7:00 PM	36	40	28	35	35	35			35	
7:15 PM	37	28	44	36	36	36			36	
7:30 PM	19	29	19	22	22	22			22	
7:45 PM	23	23	30	25	25	25			25	
8:00 PM	29	30	22	27	27	27			27	
8:15 PM	33	32	21	29	29	29			29	
8:30 PM	28	25	24	26	26	26			26	
8:45 PM	19	24	12	18	18	18			18	
9:00 PM	23	20	18	20	20	20			20	
9:15 PM	21	18	21	20	20	20			20	
9:30 PM	19	14	15	16	16	16			16	
9:45 PM	7	18	5	10	10	10			10	
10:00 PM	18	12	15	15	15	15			15	
10:15 PM	8	9	6	8	8	8			8	
10:30 PM	13	7	10	10	10	10			10	
10:45 PM	18	9	14	14	14	14			14	
11:00 PM	8	15	12	12	12	12			12	
11:15 PM	16	5	12	11	11	11			11	
11:30 PM	11	7	11	10	10	10			10	
11:45 PM	8	7	7	7	7	7			7	
Day Total	3835	3959	3833	3875	3875	3875			3875	
% Weekday Average	99.0%	102.2%	98.9%							
% Week Average	99.0%	102.2%	98.9%	100.0%						
AM Peak	11:45 AM	11:45 AM	11:45 AM	11:45 AM	11:45 AM	11:45 AM			11:45 AM	
Volume	92	99	98	96	96	96			96	
PM Peak	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM			5:00 PM	
Volume	146	164	145	152	152	152			152	
<i>Comments:</i>										

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	7	5	4	5	5	5			5	
12:15 AM	3	5	5	5	5	4			4	
12:30 AM	2	1	3	3	3	3			3	
12:45 AM	4	1	2	2	2	3			3	
1:00 AM	3	1	0	1	1	2			2	
1:15 AM	1	0	1	1	1	1			1	
1:30 AM	2	2	0	0	2	1			1	
1:45 AM	2	3	0	0	2	1			1	
2:00 AM	1	1	0	2	1	2			2	
2:15 AM	4	3	2	2	3	1			1	
2:30 AM	2	2	5	3	3	3			3	
2:45 AM	1	2	2	2	2	3			3	
3:00 AM	1	1	1	1	1	2			2	
3:15 AM	3	2	5	5	3	1			1	
3:30 AM	3	2	1	1	2	3			3	
3:45 AM	1	1	5	5	2	2			2	
4:00 AM	2	4	3	3	3	2			2	
4:15 AM	3	5	6	6	5	3			3	
4:30 AM	7	8	13	7	9	5			5	
4:45 AM	4	3	7	5	9	9			9	
5:00 AM	16	20	16	17	17	5			5	
5:15 AM	30	28	25	28	28	17			17	
5:30 AM	33	32	31	32	32	28			28	
5:45 AM						32			32	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	
<i>Comments:</i>	

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	26	25	35	29	29	29			29	
6:15 AM	37	37	45	40	40	40			40	
6:30 AM	53	51	51	52	52	52			52	
6:45 AM	58	58	51	56	56	56			56	
7:00 AM	53	61	58	57	57	57			57	
7:15 AM	76	92	72	80	80	80			80	
7:30 AM	91	109	95	98	98	98			98	
7:45 AM	93	108	108	103	103	103			103	
8:00 AM	82	98	93	91	91	91			91	
8:15 AM	104	111	117	111	111	111			111	
8:30 AM	85	101	85	90	90	90			90	
8:45 AM	92	78	82	84	84	84			84	
9:00 AM	82	65	71	73	73	73			73	
9:15 AM	76	75	63	71	71	71			71	
9:30 AM	77	65	69	70	70	70			70	
9:45 AM	76	66	67	70	70	70			70	
10:00 AM	61	47	70	59	59	59			59	
10:15 AM	52	78	75	68	68	68			68	
10:30 AM	51	54	70	58	58	58			58	
10:45 AM	61	69	61	64	64	64			64	
11:00 AM	53	51	72	59	59	59			59	
11:15 AM	51	54	51	52	52	52			52	
11:30 AM	55	64	47	55	55	55			55	
11:45 AM	59	60	61	60	60	60			60	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	
Comments:	

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	52	66	58	58	59	59			59	
12:15 PM	60	77	63	63	67	67			67	
12:30 PM	97	90	82	82	90	90			90	
12:45 PM	77	96	61	61	78	78			78	
1:00 PM	70	92	72	72	78	78			78	
1:15 PM	75	87	90	90	84	84			84	
1:30 PM	74	75	76	76	75	75			75	
1:45 PM	79	64	61	61	68	68			68	
2:00 PM	86	74	61	61	74	74			74	
2:15 PM	69	67	71	71	69	69			69	
2:30 PM	58	55	47	47	53	53			53	
2:45 PM	72	68	63	63	68	68			68	
3:00 PM	69	55	62	62	62	62			62	
3:15 PM	51	49	43	43	48	48			48	
3:30 PM	49	62	56	56	56	56			56	
3:45 PM	54	53	53	53	53	53			53	
4:00 PM	39	45	47	47	44	44			44	
4:15 PM	35	41	36	36	37	37			37	
4:30 PM	46	43	43	43	44	44			44	
4:45 PM	49	48	47	47	48	48			48	
5:00 PM	48	48	44	44	47	47			47	
5:15 PM	45	57	44	44	49	49			49	
5:30 PM	38	35	43	43	39	39			39	
5:45 PM	45	31	31	31	36	36			36	
Day Total										

% Weekday Average	
% Week Average	
AM Peak Volume	
PM Peak Volume	
Comments:	

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	30	30	39	32		34			34	
6:15 PM	41	41	40	43		41			41	
6:30 PM	37	37	46	45		43			43	
6:45 PM	31	31	25	29		28			28	
7:00 PM	20	20	26	24		23			23	
7:15 PM	31	31	28	15		25			25	
7:30 PM	19	19	15	17		17			17	
7:45 PM	24	24	26	28		26			26	
8:00 PM	11	11	21	19		17			17	
8:15 PM	13	13	14	23		17			17	
8:30 PM	12	12	13	16		14			14	
8:45 PM	8	8	16	12		12			12	
9:00 PM	13	13	18	12		14			14	
9:15 PM	9	9	18	10		12			12	
9:30 PM	9	9	6	14		10			10	
9:45 PM	10	10	8	16		11			11	
10:00 PM	9	9	11	7		9			9	
10:15 PM	8	8	12	5		8			8	
10:30 PM	1	1	4	9		5			5	
10:45 PM	8	8	14	6		9			9	
11:00 PM	5	5	4	1		3			3	
11:15 PM	2	2	5	5		4			4	
11:30 PM	6	6	6	4		5			5	
11:45 PM	4	4	4	2		3			3	
Day Total	3537	3537	3710	3561		3605			3605	
% Weekday Average	98.1%	98.1%	102.9%	98.8%						
% Week Average	98.1%	98.1%	102.9%	98.8%		100.0%				
AM Peak	8:15 AM	8:15 AM	8:15 AM	8:15 AM		8:15 AM			8:15 AM	
Volume	104	104	111	117		111			111	
PM Peak	12:30 PM	12:30 PM	12:45 PM	1:15 PM		12:30 PM			12:30 PM	
Volume	97	97	96	90		90			90	
Comments:										

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: EB/WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM	15	12	6	11	11	11			11	
12:15 AM	6	10	12	9	9	9			9	
12:30 AM	4	4	13	7	7	7			7	
12:45 AM	8	4	7	6	6	6			6	
1:00 AM	5	3	5	4	4	4			4	
1:15 AM	3	7	1	4	4	4			4	
1:30 AM	2	5	5	4	4	4			4	
1:45 AM	4	1	1	2	2	2			2	
2:00 AM	8	4	3	5	5	5			5	
2:15 AM	4	4	8	5	5	5			5	
2:30 AM	5	9	7	7	7	7			7	
2:45 AM	5	7	6	6	6	6			6	
3:00 AM	3	5	6	5	5	5			5	
3:15 AM	1	1	2	1	1	1			1	
3:30 AM	4	6	5	5	5	5			5	
3:45 AM	6	3	2	4	4	4			4	
4:00 AM	3	3	8	5	5	5			5	
4:15 AM	3	4	9	5	5	5			5	
4:30 AM	3	7	8	6	6	6			6	
4:45 AM	9	9	13	10	10	10			10	
5:00 AM	7	5	12	8	8	8			8	
5:15 AM	18	21	18	19	19	19			19	
5:30 AM	36	34	28	33	33	33			33	
5:45 AM	40	39	39	39	39	39			39	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	

Comments:

LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N
CITY/STATE: Knoxville, TN

QC JOB #: 14381007
DIRECTION: EB/WB
DATE: May 16 2017 - May 18 2017

Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 AM	33	37	46	39	39	39			39	
6:15 AM	48	44	50	47	47	47			47	
6:30 AM	64	61	67	64	64	64			64	
6:45 AM	68	73	68	70	70	70			70	
7:00 AM	74	88	92	85	85	85			85	
7:15 AM	118	132	108	119	119	119			119	
7:30 AM	137	161	136	145	145	145			145	
7:45 AM	157	168	184	170	170	170			170	
8:00 AM	119	145	144	136	136	136			136	
8:15 AM	141	149	167	152	152	152			152	
8:30 AM	139	150	128	139	139	139			139	
8:45 AM	143	131	133	136	136	136			136	
9:00 AM	131	128	121	127	127	127			127	
9:15 AM	128	115	106	116	116	116			116	
9:30 AM	133	123	122	126	126	126			126	
9:45 AM	141	124	124	130	130	130			130	
10:00 AM	108	106	117	110	110	110			110	
10:15 AM	120	156	139	138	138	138			138	
10:30 AM	110	108	139	119	119	119			119	
10:45 AM	117	120	124	120	120	120			120	
11:00 AM	119	120	142	127	127	127			127	
11:15 AM	113	129	120	121	121	121			121	
11:30 AM	134	140	124	133	133	133			133	
11:45 AM	151	159	159	156	156	156			156	
Day Total										

% Weekday Average	
% Week Average	
AM Peak	
Volume	
PM Peak	
Volume	
Comments:	

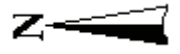
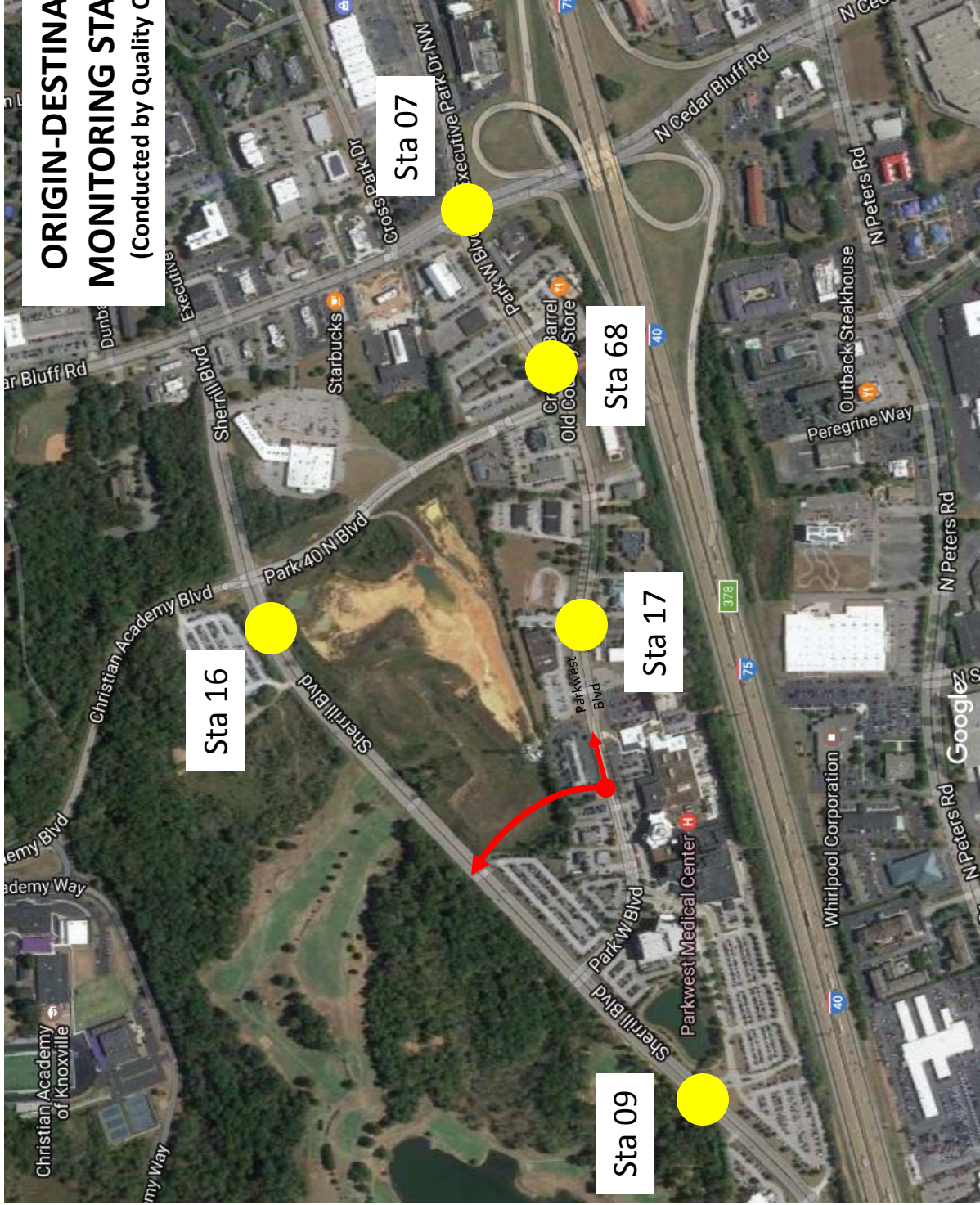
Start Time	Mon 16-May-17	Tue 16-May-17	Wed 17-May-17	Thu 18-May-17	Fri 18-May-17	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 PM	147	168	157	157	157	157			157	
12:15 PM	127	165	151	151	148	148			148	
12:30 PM	180	170	171	171	174	174			174	
12:45 PM	149	172	132	132	151	151			151	
1:00 PM	143	155	119	119	139	139			139	
1:15 PM	126	157	150	150	144	144			144	
1:30 PM	147	157	140	140	148	148			148	
1:45 PM	143	137	125	125	135	135			135	
2:00 PM	162	144	125	125	144	144			144	
2:15 PM	128	130	140	140	133	133			133	
2:30 PM	129	137	116	116	127	127			127	
2:45 PM	138	148	136	136	141	141			141	
3:00 PM	149	118	155	155	141	141			141	
3:15 PM	121	129	120	120	123	123			123	
3:30 PM	139	131	138	138	136	136			136	
3:45 PM	145	133	130	130	136	136			136	
4:00 PM	127	145	151	151	141	141			141	
4:15 PM	113	114	111	111	113	113			113	
4:30 PM	144	153	123	123	140	140			140	
4:45 PM	159	151	131	131	147	147			147	
5:00 PM	194	212	189	189	198	198			198	
5:15 PM	171	196	170	170	179	179			179	
5:30 PM	158	158	153	153	156	156			156	
5:45 PM	124	106	132	132	121	121			121	
Day Total										
% Weekday Average										
% Week Average										
AM Peak										
Volume										
PM Peak										
Volume										
Comments:										

QC JOB #: 14381007 DIRECTION: EB/WB DATE: May 16 2017 - May 18 2017										
LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N SPECIFIC LOCATION: Park W Blvd West Btwn Sherrill Blvd & Park 40 N CITY/STATE: Knoxville, TN										
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
6:00 PM	100	111	111	92	101	101			101	
6:15 PM	81	104	104	92	92	92			92	
6:30 PM	92	87	87	99	93	93			93	
6:45 PM	72	66	66	71	70	70			70	
7:00 PM	56	66	66	52	58	58			58	
7:15 PM	68	56	56	59	61	61			61	
7:30 PM	38	44	44	36	39	39			39	
7:45 PM	47	49	49	58	51	51			51	
8:00 PM	40	51	51	41	44	44			44	
8:15 PM	46	46	46	44	45	45			45	
8:30 PM	40	38	38	40	39	39			39	
8:45 PM	27	40	40	24	30	30			30	
9:00 PM	36	38	38	30	35	35			35	
9:15 PM	30	36	36	31	32	32			32	
9:30 PM	28	20	20	29	26	26			26	
9:45 PM	17	26	26	21	21	21			21	
10:00 PM	27	23	23	22	24	24			24	
10:15 PM	16	21	21	11	16	16			16	
10:30 PM	14	11	11	19	15	15			15	
10:45 PM	26	23	23	20	23	23			23	
11:00 PM	13	19	19	13	15	15			15	
11:15 PM	18	10	10	17	15	15			15	
11:30 PM	17	13	13	15	15	15			15	
11:45 PM	12	11	11	9	11	11			11	
Day Total	7372	7669	7669	7394	7478	7478			7478	
% Weekday Average	98.6%	102.6%	102.6%	98.9%						
% Week Average	98.6%	102.6%	102.6%	98.9%	100.0%					
AM Peak	7:45 AM	7:45 AM	7:45 AM	7:45 AM	7:45 AM				7:45 AM	
Volume	157	168	168	184	170				170	
PM Peak	5:00 PM	5:00 PM	5:00 PM	5:00 PM	5:00 PM				5:00 PM	
Volume	194	212	212	189	198				198	
<i>Comments:</i>										

Origin-Destination Surveys

ORIGIN-DESTINATION MONITORING STATIONS

(Conducted by Quality Counts)



ORIGIN-DESTINATION PATHS OF TRAVEL

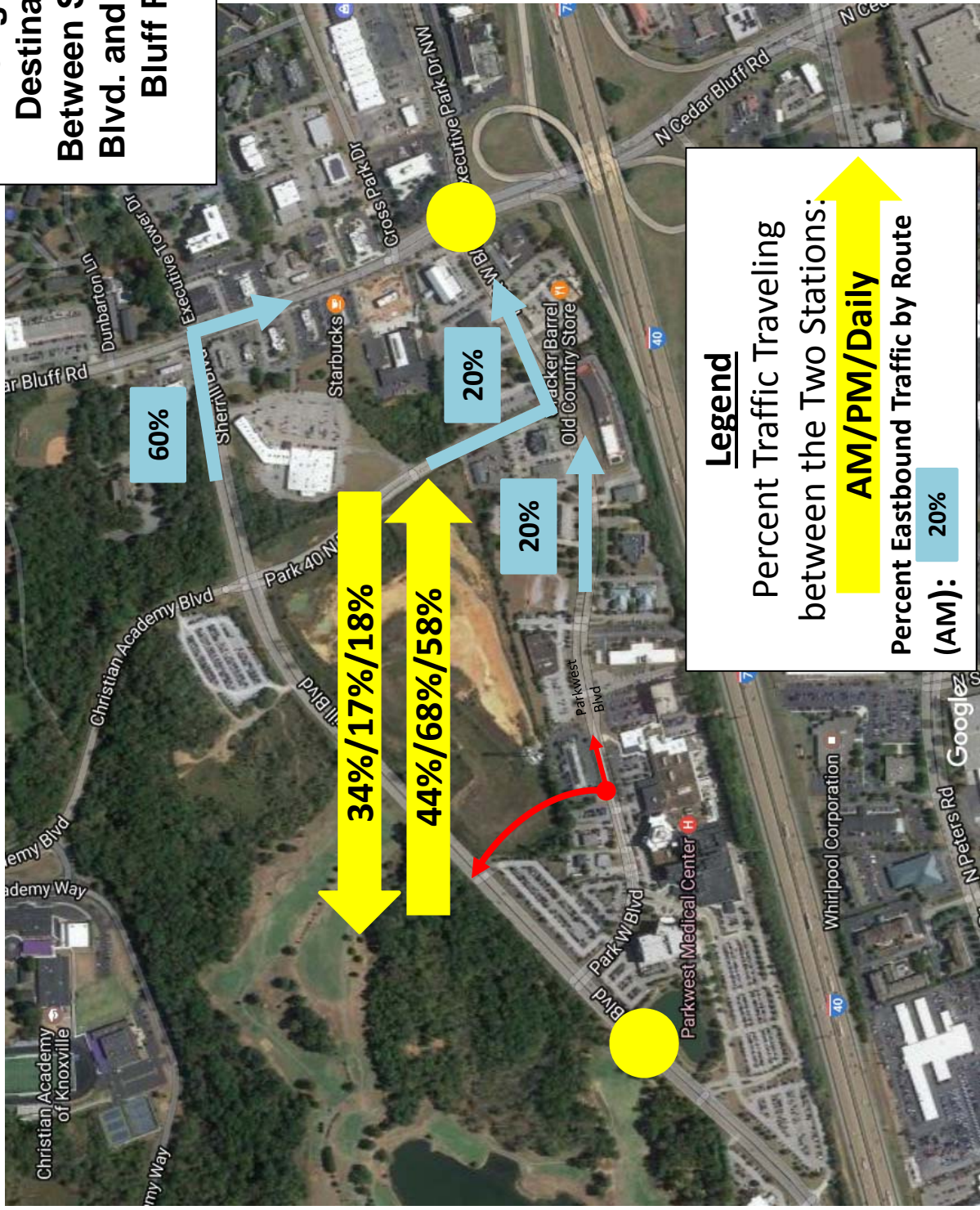
EASTBOUND						
Sherrill W of Medical Center to Park West/Cedar Bluff						
Route	AM		PM		Full Study	
	Count	Percentage	Count	Percentage	Count	Percentage
via Park West	2	20%	56	82%	104	63%
via Sherrill	6	60%	11	16%	50	30%
via Park 40/Sherrill	2	20%	1	1%	11	7%
Totals	10	100%	68	100%	165	100%

WESTBOUND						
Parkwest/Cedar Bluff to Sherrill W of Medical Center						
Route	AM		PM		Full Study	
	Count	Percentage	Count	Percentage	Count	Percentage
via Park West	22	45%	6	46%	59	43%
via Sherrill	26	53%	7	54%	71	52%
via Park 40/Sherrill	1	2%	0	0%	6	4%
Totals	49	100%	13	100%	136	100%

EASTBOUND						
Sherrill W of Medical Center to Cracker Barrel (Sta 68)						
Route	AM		PM		Full Study	
	Count	Percentage	Count	Percentage	Count	Percentage
via Park West	1	50%	3	100%	9	75%
via Sherrill/Park 40	1	50%	0	0%	1	8%
via Sherrill/Cedar Bluff	0	0%	0	0%	2	17%
Totals	2	100%	3	100%	12	100%

WESTBOUND						
Cracker Barrel (Sta 68) to Sherrill W of Medical Center						
Route	AM		PM		Full Study	
	Count	Percentage	Count	Percentage	Count	Percentage
via Park West	2	100%	0	0%	7	100%
via Sherrill/Park 40	0	0%	0	0%	0	0%
via Sherrill/Cedar Bluff	0	0%	0	0%	0	0%
Totals	2	100%	0	0%	7	100%

**Origin
Destination
Between Sherrill
Blvd. and Cedar
Bluff Rd.**



Legend

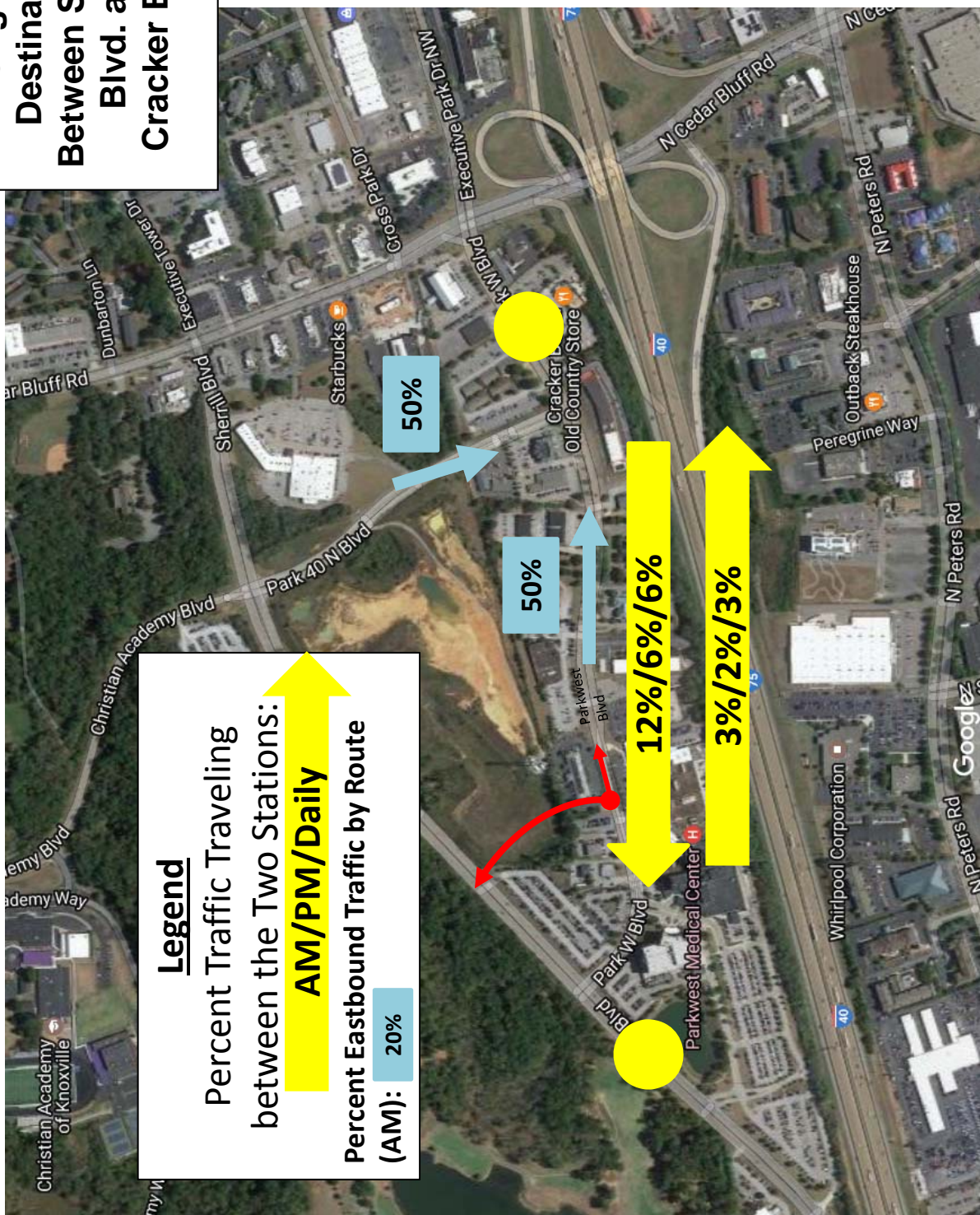
Percent Traffic Traveling
between the Two Stations:

AM/PM/Daily

Percent Eastbound Traffic by Route
(AM):

20%

**Origin
Destination
Between Sherrill
Blvd. and
Cracker Barrel**



Legend
 Percent Traffic Traveling
 between the Two Stations:
 AM/PM/Daily
 Percent Eastbound Traffic by Route
 (AM): 20%

Park West Rd - May 2017 (143810) - Overview
 5/15/2017 12:00 AM - 5/19/2017 11:59 PM

PM Peak Period (4-6PM) Max Trip Time: 15n

Destination	Latitude	Longitude	Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	Park West Rd & Cedar Bluff Rd (QC07)	Park West Rd & Park 40 North (DIG168)	Sherrill Blvd W of Christian Academy Rd (QC16)	Sherrill Blvd W of Park West Rd (QC09)
Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	35.918407	-84.09846	0(0.0%)	33(86.8%)	4(10.5%)	0(0.0%)	1(2.6%)
Park West Rd & Cedar Bluff Rd (QC07)	35.919811	-84.092193	22(28.9%)	21(27.6%)	18(23.7%)	2(2.6%)	13(17.1%)
Park West Rd & Park 40 North (DIG168)	35.918668	-84.094323	0(0.0%)	35(67.3%)	16(30.8%)	0(0.0%)	1(1.9%)
Sherrill Blvd W of Christian Academy Rd (QC16)	35.921987	-84.09875	0(0.0%)	11(40.7%)	0(0.0%)	1(3.7%)	15(55.6%)
Sherrill Blvd W of Park West Rd (QC09)	35.917443	-84.104319	1(0.9%)	75(68.2%)	6(5.5%)	27(24.5%)	1(0.9%)

Park West Rd - May 2017 (143810) - Overview
 5/15/2017 12:00 AM - 5/19/2017 11:59 PM

AM Peak Period (7-9AM) Max Trip Time: 15n

Destination	Latitude	Longitude	Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	Park West Rd & Cedar Bluff Rd (QC07)	Park West Rd & Park 40 North (DIGI68)	Sherrill Blvd W of Christian Academy Rd (QC16)	Sherrill Blvd W of Park West Rd (QC09)
Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	35.918407	-84.09846	0(0.0%)	8(88.9%)	1(11.1%)	0(0.0%)	0(0.0%)
Park West Rd & Cedar Bluff Rd (QC07)	35.919811	-84.092193	22(15.3%)	33(22.9%)	37(25.7%)	3(2.1%)	49(34.0%)
Park West Rd & Park 40 North (DIGI68)	35.918668	-84.094323	3(4.0%)	20(26.7%)	49(65.3%)	1(1.3%)	2(2.7%)
Sherrill Blvd W of Christian Academy Rd (QC16)	35.921987	-84.09875	0(0.0%)	3(5.1%)	0(0.0%)	0(0.0%)	56(94.9%)
Sherrill Blvd W of Park West Rd (QC09)	35.917443	-84.104319	0(0.0%)	11(44.0%)	3(12.0%)	9(36.0%)	2(8.0%)

Park West Rd - May 2017 (143810) - Overview
 5/15/2017 12:00 AM - 5/19/2017 11:59 PM

Max Trip Time: 15min

Full Study

Destination	Latitude	Longitude	Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	Park West Rd & Cedar Bluff Rd (QC07)	Park West Rd & Park 40 North (DIG168)	Sherrill Blvd W of Christian Academy Rd (QC16)	Sherrill Blvd W of Park West Rd (QC09)
Park West Blvd btwn Sherrill Blvd and Park 40 North (QC17)	35.918407	-84.09846	1(0.5%)	178(86.4%)	22(10.7%)	0(0.0%)	5(2.4%)
Park West Rd & Cedar Bluff Rd (QC07)	35.919811	-84.092193	146(18.8%)	217(28.0%)	244(31.5%)	28(3.6%)	140(18.1%)
Park West Rd & Park 40 North (DIG168)	35.918668	-84.094323	14(3.9%)	190(53.1%)	142(39.7%)	3(0.8%)	9(2.5%)
Sherrill Blvd W of Christian Academy Rd (QC16)	35.921987	-84.09875	3(1.4%)	51(23.7%)	2(0.9%)	8(3.7%)	151(70.2%)
Sherrill Blvd W of Park West Rd (QC09)	35.917443	-84.104319	6(1.9%)	183(57.7%)	20(6.3%)	95(30.0%)	13(4.1%)

Signal Warrants

INTERSECTION: **Sherrill Blvd & Park 40/Christian Academy Blvd 2017**
 JOB NUMBER: **219096**
 DATE: **09/07/2017**

85TH PERCENTILE SPEED:	45	PEDESTRIAN GAPS/HOUR :	28
POPULATION:	350,000	ESTABLISHED SCHOOL CROSSING, MINIMUM 20 Xing (YES/NO):	NO
NUMBER OF APPROACHES:	4	NEAREST SIGNALIZED INTERSECTION:	0
LANES ON MAIN STREET:	2	IMPROVE PROGRESSION-PLATOONING (YES/NO):	NO
MINOR STREET APPROACH LANES:	2	MAJOR ROUTES (YES/NO):	NO
		WARRANTS IN 5 YRS (YES/NO):	NO
PEDESTRIANS:	N/A	ALTERNATIVES TO A SIGNAL EXPLORED:	YES
		NUMBER OF ACCIDENTS:	0
PEAK-HOUR VOLUME (4-CONSECUTIVE 15MIN PERIODS)	N/A	PEAK HOUR DELAY (VEH-HR):	0
MAJOR:	0	PROXIMITY OF RR ON MINOR APPROACH TO MAJOR STREET:	0
0% MINOR:	0	RAIL TRAFFIC FREQUENCY:	0
		MINOR APPROACH HIGH-OCCUPACY BUSES :	0.0%
EXISTING OR PROPOSED SIGNAL SYSTEM (YES/NO):	N/A	TRACTOR-TRAILER PERCENTAGE	0.0%

HOUR	MAIN STREET			MINOR STREET				COMBINATION WARRANT A&B	4-HOUR		PEAK HOUR		
	STREET VOLUME	PERCENT OF WARRANT 1A	PERCENT OF WARRANT 1B	MINOR STREET VOLUME	MINIMUM VOLUME		INTERRUPTION		WARRANT 2	WARRANT 3B			
		420	630		WARRANT 1A	WARRANT 1B	WARRANT 1A				WARRANT 1B		
					140		70						
24-1	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
1-2	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
2-3	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
3-4	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
4-5	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
5-6	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
6-7	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
7-8	550	131%	87%	216	154%	YES	309%	NO	YES	108%	YES	64%	NO
8-9	554	132%	88%	161	115%	YES	230%	NO	YES	81%	NO	48%	NO
9-10	329	78%	52%	106	75%	NO	151%	NO	NO	31%	NO	22%	NO
10-11	297	71%	47%	73	52%	NO	104%	NO	NO	20%	NO	14%	NO
11-12	338	81%	54%	67	48%	NO	96%	NO	NO	20%	NO	14%	NO
12-13	446	106%	71%	62	44%	NO	89%	NO	NO	24%	NO	15%	NO
13-14	430	102%	68%	109	78%	NO	156%	NO	NO	41%	NO	27%	NO
14-15	342	82%	54%	90	64%	NO	129%	NO	NO	27%	NO	19%	NO
15-16	394	94%	63%	133	95%	YES/NO	190%	NO	NO	46%	NO	30%	NO
16-17	390	93%	62%	172	123%	YES/NO	246%	NO	NO	58%	NO	39%	NO
17-18	463	110%	73%	121	86%	NO	173%	NO	NO	49%	NO	31%	NO
18-19	335	80%	53%	103	74%	NO	147%	NO	NO	31%	NO	22%	NO
19-20	196	47%	31%	57	41%	NO	81%	NO	NO	13%	NO	10%	NO
20-21	130	31%	21%	43	30%	NO	61%	NO	NO	9%	NO	7%	NO
21-22	75	18%	12%	28	20%	NO	40%	NO	NO	5%	NO	4%	NO
22-23	49	12%	8%	16	11%	NO	23%	NO	NO	3%	NO	2%	NO
23-24	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO

WARRANT	WARRANT DESCRIPTION	WARRANT OBTAINED?	HOURS	>=90%	PRIORITY
				HOURS	POINTS
SUMMARY	1 A	MINIMUM VOLUME:	NO	2	22
	B	INTERRUPTION:	NO	0	0
	A & B	COMBINATION:	NO	2	N/A
	2	FOUR-HOUR:	NO	1	16
	3 A	PEAK HOUR DELAY:	N/A	N/A	0
	B	PEAK HOUR VOLUME:	NO	0	0
	4	<small>No data collected</small> MINIMUM PED. VOLUMES:	N/A	N/A	N/A
	5	SCHOOL CROSSING:	NO	N/A	0
	6	CORD. SIGNAL SYSTEM:	NO	N/A	0
7	ACCIDENT EXPERIENCE:	NO	5	0	
8	ROADWAY NETWORK:	NO	0	0	
9	INTERSECTION NEAR A GRADE CROSS	N/A	0	0	
PRIORITY VALUE					56

INTERSECTION: **Sherrill Blvd & Park 40/Christian Academy Blvd w MOB 2017**
 JOB NUMBER: **219096**
 DATE: **08/15/2017**

85TH PERCENTILE SPEED:	45	PEDESTRIAN GAPS/HOUR :	28
POPULATION:	350,000	ESTABLISHED SCHOOL CROSSING, MINIMUM 20 Xing (YES/NO):	NO
NUMBER OF APPROACHES:	4	NEAREST SIGNALIZED INTERSECTION:	0
LANES ON MAIN STREET:	2	IMPROVE PROGRESSION-PLATOONING (YES/NO):	NO
MINOR STREET APPROACH LANES:	2	MAJOR ROUTES (YES/NO):	NO
		WARRANTS IN 5 YRS (YES/NO):	NO
PEDESTRIANS:	N/A	ALTERNATIVES TO A SIGNAL EXPLORED:	YES
		NUMBER OF ACCIDENTS:	0
PEAK-HOUR VOLUME (4-CONSECUTIVE 15MIN PERIODS)	N/A	PEAK HOUR DELAY (VEH-HR):	0
MAJOR:	0	PROXIMITY OF RR ON MINOR APPROACH TO MAJOR STREET:	0
0% MINOR:	0	RAIL TRAFFIC FREQUENCY:	0
		MINOR APPROACH HIGH-OCCUPACY BUSES :	0.0%
EXISTING OR PROPOSED SIGNAL SYSTEM (YES/NO):	N/A	TRACTOR-TRAILER PERCENTAGE	0.0%

HOUR	MAIN STREET			MINOR STREET				COMBINATION WARRANT A&B	4-HOUR		PEAK HOUR		
	MAIN STREET VOLUME	PERCENT OF WARRANT 1A	PERCENT OF WARRANT 1B	MINOR STREET VOLUME	MINIMUM VOLUME		INTERRUPTION		WARRANT 2	WARRANT 3B			
		420	630		WARRANT 1A	WARRANT 1B	WARRANT 1A				WARRANT 1B		
					140		70						
24-1	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
1-2	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
2-3	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
3-4	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
4-5	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
5-6	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
6-7	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO
7-8	741	176%	118%	229	163%	YES	327%	YES	YES	191%	YES	95%	YES/NO
8-9	792	189%	126%	218	156%	YES	311%	YES	YES	210%	YES	100%	YES
9-10	512	122%	81%	224	160%	YES	320%	NO	YES	101%	YES	62%	NO
10-11	469	112%	74%	185	132%	YES	264%	NO	NO	75%	NO	48%	NO
11-12	496	118%	79%	206	147%	YES	295%	NO	NO	90%	YES/NO	56%	NO
12-13	603	143%	96%	190	136%	YES	271%	YES/NO	YES	109%	YES	62%	NO
13-14	602	143%	96%	218	155%	YES	311%	YES/NO	YES	124%	YES	70%	NO
14-15	477	114%	76%	195	139%	YES	278%	NO	NO	81%	NO	51%	NO
15-16	502	119%	80%	249	178%	YES	356%	NO	YES	110%	YES	68%	NO
16-17	478	114%	76%	327	233%	YES	467%	NO	NO	136%	YES	86%	NO
17-18	496	118%	79%	208	149%	YES	297%	NO	NO	91%	YES/NO	56%	NO
18-19	336	80%	53%	103	74%	NO	147%	NO	NO	31%	NO	22%	NO
19-20	196	47%	31%	57	41%	NO	81%	NO	NO	13%	NO	10%	NO
20-21	131	31%	21%	43	30%	NO	61%	NO	NO	9%	NO	7%	NO
21-22	75	18%	12%	28	20%	NO	40%	NO	NO	5%	NO	4%	NO
22-23	49	12%	8%	16	11%	NO	23%	NO	NO	3%	NO	2%	NO
23-24	0	0%	0%	0	0%	NO	0%	NO	NO	0%	NO	0%	NO

WARRANT	WARRANT DESCRIPTION	WARRANT OBTAINED?	HOURS	>=90%	PRIORITY
				HOURS	POINTS
SUMMARY	1 A	MINIMUM VOLUME:	YES	11	121
	B	INTERRUPTION:	NO	2	20
	A & B	COMBINATION:	NO	N/A	54
	2	FOUR-HOUR:	YES	7	112
	3 A	PEAK HOUR DELAY:	N/A	N/A	0
	B	PEAK HOUR VOLUME:	YES	1	56
	4	<small>No data collected</small> MINIMUM PED. VOLUMES:	N/A	N/A	N/A
	5	SCHOOL CROSSING:	NO	N/A	0
	6	CORD. SIGNAL SYSTEM:	NO	N/A	0
7	ACCIDENT EXPERIENCE:	NO	11	0	
8	ROADWAY NETWORK:	NO	2	0	
9	INTERSECTION NEAR A GRADE CROSS	N/A	0	0	
PRIORITY VALUE					363

Synchro Reports

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing AM Peak
Parkwest Medical Center

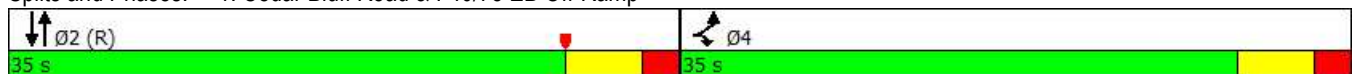
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	602	227	908	1111
Future Volume (vph)	602	227	908	1111
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	39.0	39.0
Actuated g/C Ratio	0.33	0.33	0.56	0.56
v/c Ratio	0.67	0.57	0.33	0.46
Control Delay	22.7	22.1	9.3	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.7	22.1	9.3	9.5
LOS	C	C	A	A
Approach Delay	22.5		9.3	9.5
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 64 (91%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 13.3
 Intersection Capacity Utilization 47.7%
 Analysis Period (min) 15





Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing AM Peak
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	765	280	1164	1307
v/c Ratio	0.67	0.57	0.33	0.46
Control Delay	22.7	22.1	9.3	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.7	22.1	9.3	9.5
Queue Length 50th (ft)	143	100	71	104
Queue Length 95th (ft)	150	114	94	130
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1537	655	3573	2850
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.43	0.33	0.46
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing AM Peak
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	602	227	0	908	1111	0
Future Volume (vph)	602	227	0	908	1111	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.99	0.85		1.00	1.00	
Fl _t Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3462	1455		6408	5111	
Fl _t Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3462	1455		6408	5111	
Peak-hour factor, PHF	0.82	0.73	1.00	0.78	0.85	1.00
Adj. Flow (vph)	734	311	0	1164	1307	0
RTOR Reduction (vph)	5	13	0	0	0	0
Lane Group Flow (vph)	760	267	0	1164	1307	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	21.0	21.0		37.0	37.0	
Effective Green, g (s)	23.0	23.0		39.0	39.0	
Actuated g/C Ratio	0.33	0.33		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1137	478		3570	2847	
v/s Ratio Prot	c0.22	0.18		0.18	c0.26	
v/s Ratio Perm						
v/c Ratio	0.67	0.56		0.33	0.46	
Uniform Delay, d ₁	20.2	19.3		8.4	9.2	
Progression Factor	1.00	1.00		1.00	0.92	
Incremental Delay, d ₂	1.2	0.8		0.2	0.5	
Delay (s)	21.4	20.1		8.6	9.0	
Level of Service	C	C		A	A	
Approach Delay (s)	21.0			8.6	9.0	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			47.7%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing AM Peak
Parkwest Medical Center

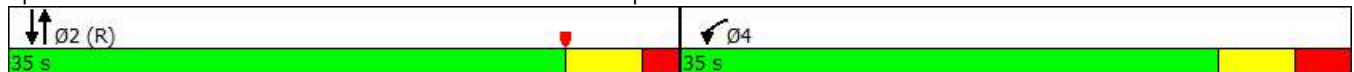
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	719	1268	479
Future Volume (vph)	719	1268	479
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	25.0	37.0	37.0
Actuated g/C Ratio	0.36	0.53	0.53
v/c Ratio	0.68	0.45	0.24
Control Delay	21.6	13.2	5.2
Queue Delay	0.0	0.0	0.0
Total Delay	21.6	13.2	5.2
LOS	C	B	A
Approach Delay	21.6	13.2	5.2
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 27 (39%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 47.7%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing AM Peak
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	856	1565	647
v/c Ratio	0.68	0.45	0.24
Control Delay	21.6	13.2	5.2
Queue Delay	0.0	0.0	0.0
Total Delay	21.6	13.2	5.2
Queue Length 50th (ft)	156	120	39
Queue Length 95th (ft)	169	150	39
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1563	3513	2658
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.45	0.24
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing AM Peak
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	719	0	1268	0	0	479
Future Volume (vph)	719	0	1268	0	0	479
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.84	1.00	0.81	1.00	1.00	0.74
Adj. Flow (vph)	856	0	1565	0	0	647
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	856	0	1565	0	0	647
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	22.0		35.0			35.0
Effective Green, g (s)	25.0		37.0			37.0
Actuated g/C Ratio	0.36		0.53			0.53
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1260		3517			2660
v/s Ratio Prot	c0.24		c0.24			0.13
v/s Ratio Perm						
v/c Ratio	0.68		0.44			0.24
Uniform Delay, d1	19.1		10.2			8.9
Progression Factor	1.00		1.17			0.53
Incremental Delay, d2	1.2		0.4			0.2
Delay (s)	20.3		12.3			4.9
Level of Service	C		B			A
Approach Delay (s)	20.3		12.3			4.9
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

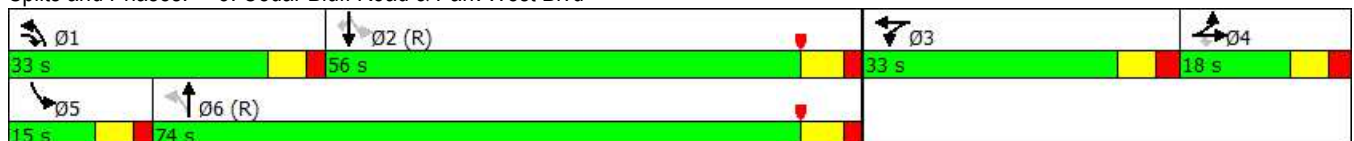
Existing AM Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	37	58	172	130	298	266	534	28	501	57
Future Volume (vph)	37	58	172	130	298	266	534	28	501	57
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	18.0	18.0	33.0	33.0	33.0	33.0	74.0	15.0	56.0	56.0
Total Split (%)	12.9%	12.9%	23.6%	23.6%	23.6%	23.6%	52.9%	10.7%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	16.6	16.6	39.1	26.9	26.9	85.0	74.8	72.6	62.0	62.0
Actuated g/C Ratio	0.12	0.12	0.28	0.19	0.19	0.61	0.53	0.52	0.44	0.44
v/c Ratio	0.39	0.87	0.36	0.52	0.79	0.61	0.38	0.13	0.38	0.11
Control Delay	64.2	97.9	42.7	57.0	59.8	21.6	14.1	9.6	23.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0
Total Delay	64.2	97.9	42.7	57.0	59.8	22.2	14.2	9.6	23.4	2.9
LOS	E	F	D	E	E	C	B	A	C	A
Approach Delay		70.0			59.1		16.1		20.1	
Approach LOS		E			E		B		C	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 33.3
 Intersection Capacity Utilization 58.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

Existing AM Peak
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	80	167	154	163	531	313	1013	44	604	92
v/c Ratio	0.39	0.87	0.36	0.52	0.79	0.61	0.38	0.13	0.38	0.11
Control Delay	64.2	97.9	42.7	57.0	59.8	21.6	14.1	9.6	23.4	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.0	0.0	0.0
Total Delay	64.2	97.9	42.7	57.0	59.8	22.2	14.2	9.6	23.4	2.9
Queue Length 50th (ft)	70	161	122	145	237	141	174	13	202	7
Queue Length 95th (ft)	61	#278	134	176	264	248	146	13	248	11
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	203	192	530	335	722	601	2663	367	1599	810
Starvation Cap Reductn	0	0	0	0	0	74	318	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.87	0.29	0.49	0.74	0.59	0.43	0.12	0.38	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

Existing AM Peak
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	58	172	130	298	113	266	534	162	28	501	57
Future Volume (vph)	37	58	172	130	298	113	266	534	162	28	501	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.91	0.85	1.00	0.96		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1627	1512	1618	3376		1770	4923		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.32	1.00		0.26	1.00	1.00
Satd. Flow (perm)	1719	1627	1512	1618	3376		587	4923		484	3610	1615
Peak-hour factor, PHF	0.46	0.81	0.69	0.72	0.80	0.81	0.85	0.67	0.75	0.64	0.83	0.62
Adj. Flow (vph)	80	72	249	181	372	140	313	797	216	44	604	92
RTOR Reduction (vph)	0	0	0	0	24	0	0	33	0	0	0	51
Lane Group Flow (vph)	80	167	154	163	507	0	313	980	0	44	604	41
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	13.6	13.6	30.6	24.4	24.4		82.5	71.1		64.9	59.5	59.5
Effective Green, g (s)	16.6	16.6	34.6	26.9	26.9		84.5	73.6		70.9	62.0	62.0
Actuated g/C Ratio	0.12	0.12	0.25	0.19	0.19		0.60	0.53		0.51	0.44	0.44
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	203	192	373	310	648		514	2588		320	1598	715
v/s Ratio Prot	0.05	c0.10	0.06	0.10	c0.15		c0.08	0.20		0.01	0.17	
v/s Ratio Perm			0.05				c0.28			0.06		0.03
v/c Ratio	0.39	0.87	0.41	0.53	0.78		0.61	0.38		0.14	0.38	0.06
Uniform Delay, d1	57.0	60.6	44.2	50.8	53.8		15.0	19.7		17.5	26.1	22.3
Progression Factor	0.99	0.99	0.99	1.00	1.00		1.27	0.76		0.75	0.85	1.00
Incremental Delay, d2	0.9	31.3	0.5	1.2	5.9		1.6	0.4		0.1	0.6	0.1
Delay (s)	57.7	91.6	44.1	52.0	59.7		20.6	15.3		13.2	22.8	22.4
Level of Service	E	F	D	D	E		C	B		B	C	C
Approach Delay (s)		66.6			57.9			16.5			22.2	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

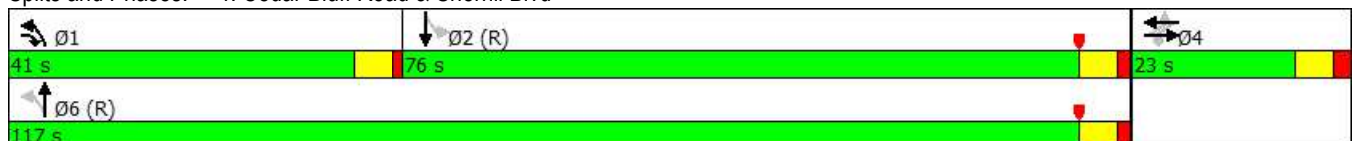
Existing AM Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	41	21	131	17	1	206	599	44	883
Future Volume (vph)	41	21	131	17	1	206	599	44	883
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	23.0	23.0	41.0	23.0	23.0	41.0	117.0	76.0	76.0
Total Split (%)	16.4%	16.4%	29.3%	16.4%	16.4%	29.3%	83.6%	54.3%	54.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.8	13.8	32.2		13.8	122.5	122.7	101.3	101.3
Actuated g/C Ratio	0.10	0.10	0.23		0.10	0.88	0.88	0.72	0.72
v/c Ratio	0.41	0.17	0.37		0.18	0.67	0.32	0.19	0.43
Control Delay	67.2	58.4	19.2		41.9	15.7	2.4	11.1	10.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	58.4	19.2		41.9	15.7	2.4	11.1	10.4
LOS	E	E	B		D	B	A	B	B
Approach Delay		34.6			41.9		6.0		10.4
Approach LOS		C			D		A		B

Intersection Summary

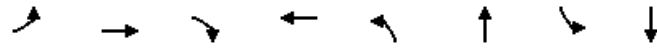
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 13 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 59.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

Existing AM Peak
Parkwest Medical Center

























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	56	32	168	48	368	971	76	1119
v/c Ratio	0.41	0.17	0.37	0.18	0.67	0.32	0.19	0.43
Control Delay	67.2	58.4	19.2	41.9	15.7	2.4	11.1	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.2	58.4	19.2	41.9	15.7	2.4	11.1	10.4
Queue Length 50th (ft)	49	27	55	14	124	99	21	201
Queue Length 95th (ft)	74	43	76	4	86	138	37	361
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	196	271	678	372	768	3014	395	2581
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.12	0.25	0.13	0.48	0.32	0.19	0.43

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Cedar Bluff Road & Sherrill Blvd

Existing AM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	21	131	17	1	10	206	599	194	44	883	140
Future Volume (vph)	41	21	131	17	1	10	206	599	194	44	883	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.95		1.00	0.96		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3141		1906	3414		1761	3561	
Flt Permitted	0.72	1.00	1.00		0.80		0.21	1.00		0.29	1.00	
Satd. Flow (perm)	1409	1947	1655		2575		417	3414		547	3561	
Peak-hour factor, PHF	0.73	0.66	0.78	0.61	0.25	0.63	0.56	0.88	0.67	0.58	0.92	0.88
Adj. Flow (vph)	56	32	168	28	4	16	368	681	290	76	960	159
RTOR Reduction (vph)	0	0	73	0	15	0	0	24	0	0	6	0
Lane Group Flow (vph)	56	32	95	0	33	0	368	947	0	76	1113	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	9.7	9.7	25.4		9.7		118.8	118.8		98.1	98.1	
Effective Green, g (s)	12.2	12.2	29.4		12.2		120.8	120.8		100.1	100.1	
Actuated g/C Ratio	0.09	0.09	0.21		0.09		0.86	0.86		0.71	0.71	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	122	169	347		224		548	2945		391	2546	
v/s Ratio Prot		0.02	0.03				c0.08	0.28			0.31	
v/s Ratio Perm	c0.04		0.02		0.01		c0.49			0.14		
v/c Ratio	0.46	0.19	0.27		0.15		0.67	0.32		0.19	0.44	
Uniform Delay, d1	60.8	59.3	46.3		59.1		6.2	1.8		6.6	8.3	
Progression Factor	1.00	1.00	1.00		1.00		2.48	1.25		1.00	1.00	
Incremental Delay, d2	2.7	0.5	0.3		0.3		2.8	0.3		1.1	0.5	
Delay (s)	63.5	59.9	46.6		59.4		18.2	2.6		7.7	8.8	
Level of Service	E	E	D		E		B	A		A	A	
Approach Delay (s)		52.0			59.4			6.8			8.7	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			12.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			59.2%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

Existing AM Peak
Parkwest Medical Center

	↙	↖	↗	↑	↘	↓	Ø4
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↗	↑↔	↘	↕	
Traffic Volume (vph)	150	111	2	718	358	528	
Future Volume (vph)	150	111	2	718	358	528	
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	
Protected Phases		1		2	1	6	4
Permitted Phases	8	8	2		6		
Detector Phase	8	1	2	2	1	6	
Switch Phase							
Minimum Initial (s)	8.0	6.0	20.0	20.0	6.0	20.0	8.0
Minimum Split (s)	22.0	11.5	26.5	26.5	11.5	26.5	22.0
Total Split (s)	30.0	22.0	48.0	48.0	22.0	70.0	30.0
Total Split (%)	30.0%	22.0%	48.0%	48.0%	22.0%	70.0%	30%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes	Yes		
Recall Mode	None	None	C-Min	C-Min	None	C-Min	None
Act Effect Green (s)	19.8	46.5	41.5	41.5	68.7	67.7	
Actuated g/C Ratio	0.20	0.46	0.42	0.42	0.69	0.68	
v/c Ratio	0.79	0.19	0.01	1.03	1.20	0.31	
Control Delay	57.8	11.3	12.5	56.8	138.2	7.5	
Queue Delay	0.0	0.0	0.0	2.5	0.0	0.0	
Total Delay	57.8	11.3	12.5	59.3	138.2	7.5	
LOS	E	B	B	E	F	A	
Approach Delay				59.2		61.5	
Approach LOS				E		E	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 26 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 57.8
 Intersection Capacity Utilization 71.7%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service C

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

Existing AM Peak
Parkwest Medical Center



Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	221	148	4	1517	526	748
v/c Ratio	0.79	0.19	0.01	1.03	1.20	0.31
Control Delay	57.8	11.3	12.5	56.8	138.2	7.5
Queue Delay	0.0	0.0	0.0	2.5	0.0	0.0
Total Delay	57.8	11.3	12.5	59.3	138.2	7.5
Queue Length 50th (ft)	133	36	1	~518	~370	94
Queue Length 95th (ft)	148	56	m2	442	#389	101
Internal Link Dist (ft)				493		1729
Turn Bay Length (ft)	200		100		100	
Base Capacity (vph)	338	761	284	1467	439	2380
Starvation Cap Reductn	0	0	0	10	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.19	0.01	1.04	1.20	0.31























Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

5: Cedar Bluff Road & Fox Lonas Rd

Existing AM Peak
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	150	0	111	2	718	323	358	528	2	
Future Volume (vph)	0	0	0	150	0	111	2	718	323	358	528	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			0%			1%		
Total Lost time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Lane Util. Factor				1.00		1.00	1.00	0.95		1.00	0.95		
Fr _t				1.00		0.85	1.00	0.95		1.00	1.00		
Fl _t Protected				0.95		1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)				1770		1583	1770	3348		1761	3519		
Fl _t Permitted				0.76		1.00	0.37	1.00		0.09	1.00		
Satd. Flow (perm)				1410		1583	685	3348		158	3519		
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.75	0.50	0.74	0.59	0.68	0.71	0.50	
Adj. Flow (vph)	0	0	0	221	0	148	4	970	547	526	744	4	
RTOR Reduction (vph)	0	0	0	0	0	28	0	78	0	0	0	0	
Lane Group Flow (vph)	0	0	0	221	0	120	4	1439	0	526	748	0	
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA		
Protected Phases		4				1		2		1	6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)				19.8		40.5	41.5	41.5		67.7	67.7		
Effective Green, g (s)				19.8		40.5	41.5	41.5		67.7	67.7		
Actuated g/C Ratio				0.20		0.40	0.42	0.42		0.68	0.68		
Clearance Time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Vehicle Extension (s)				3.0		3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)				279		641	284	1389		438	2382		
v/s Ratio Prot						0.04		0.43		c0.25	0.21		
v/s Ratio Perm				c0.16		0.04	0.01			c0.56			
v/c Ratio				0.79		0.19	0.01	1.04		1.20	0.31		
Uniform Delay, d ₁				38.1		19.2	17.2	29.2		32.1	6.6		
Progression Factor				1.00		1.00	0.72	0.87		1.00	1.00		
Incremental Delay, d ₂				14.2		0.1	0.1	33.5		110.5	0.3		
Delay (s)				52.4		19.3	12.4	59.0		142.6	7.0		
Level of Service				D		B	B	E		F	A		
Approach Delay (s)		0.0			39.1			58.9			63.0		
Approach LOS		A			D			E			E		
Intersection Summary													
HCM 2000 Control Delay			58.2									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.14										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			71.7%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

Timings
6: Cedar Bluff Road & Dutchtown Rd

Existing AM Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	100	62	60	45	160	264	589	28	528
Future Volume (vph)	100	62	60	45	160	264	589	28	528
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	32.5	12.0	29.5
Total Split (s)	13.0	22.0	20.0	13.0	22.0	20.0	52.0	13.0	45.0
Total Split (%)	13.0%	22.0%	20.0%	13.0%	22.0%	20.0%	52.0%	13.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	33.5	24.2	43.5	25.1	17.6	52.8	44.6	40.0	32.9
Actuated g/C Ratio	0.34	0.24	0.44	0.25	0.18	0.53	0.45	0.40	0.33
v/c Ratio	0.54	0.16	0.10	0.15	0.87	0.88	0.49	0.13	0.74
Control Delay	33.1	34.5	2.2	24.4	67.4	47.4	21.7	9.8	27.8
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	33.8	34.5	2.2	24.4	67.4	47.4	22.0	9.8	27.8
LOS	C	C	A	C	E	D	C	A	C
Approach Delay		26.5			60.4		29.0		26.9
Approach LOS		C			E		C		C

Intersection Summary










Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 15 (15%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 32.1
 Intersection Capacity Utilization 70.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

Existing AM Peak
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	161	72	72	56	286	297	777	44	852
v/c Ratio	0.54	0.16	0.10	0.15	0.87	0.88	0.49	0.13	0.74
Control Delay	33.1	34.5	2.2	24.4	67.4	47.4	21.7	9.8	27.8
Queue Delay	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	33.8	34.5	2.2	24.4	67.4	47.4	22.0	9.8	27.8
Queue Length 50th (ft)	70	37	0	23	178	120	204	11	130
Queue Length 95th (ft)	87	78	10	49	185	#240	191	m12	128
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	297	450	757	370	327	347	1676	334	1337
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	26	0	0	0	0	0	331	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.16	0.10	0.15	0.87	0.86	0.58	0.13	0.64

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd























Existing AM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	62	60	45	160	18	264	589	8	28	528	171
Future Volume (vph)	100	62	60	45	160	18	264	589	8	28	528	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1824		1770	3531		1761	3388	
Flt Permitted	0.23	1.00	1.00	0.71	1.00		0.14	1.00		0.34	1.00	
Satd. Flow (perm)	426	1863	1583	1323	1824		255	3531		630	3388	
Peak-hour factor, PHF	0.62	0.86	0.83	0.80	0.65	0.45	0.89	0.77	0.67	0.64	0.83	0.79
Adj. Flow (vph)	161	72	72	56	246	40	297	765	12	44	636	216
RTOR Reduction (vph)	0	0	45	0	6	0	0	1	0	0	37	0
Lane Group Flow (vph)	161	72	27	56	280	0	297	776	0	44	815	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	35.8	24.2	37.6	25.0	18.8		51.1	41.0		35.8	31.7	
Effective Green, g (s)	35.8	24.2	37.6	25.0	18.8		51.1	41.0		35.8	31.7	
Actuated g/C Ratio	0.36	0.24	0.38	0.25	0.19		0.51	0.41		0.36	0.32	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	308	450	690	358	342		333	1447		271	1073	
v/s Ratio Prot	c0.06	0.04	0.01	0.01	c0.15		c0.12	0.22		0.01	0.24	
v/s Ratio Perm	0.13		0.01	0.03			c0.34			0.05		
v/c Ratio	0.52	0.16	0.04	0.16	0.82		0.89	0.54		0.16	0.76	
Uniform Delay, d1	23.9	29.9	19.8	29.0	39.0		22.1	22.3		21.1	30.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.75	0.85	
Incremental Delay, d2	1.6	0.2	0.0	0.2	14.2		24.5	1.4		0.3	4.8	
Delay (s)	25.5	30.1	19.8	29.2	53.1		46.6	23.7		16.2	30.8	
Level of Service	C	C	B	C	D		D	C		B	C	
Approach Delay (s)		25.2			49.2			30.1			30.1	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

Existing AM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	38	101	14	37	291	163	4	23	4	63	207	26
Future Volume (Veh/h)	38	101	14	37	291	163	4	23	4	63	207	26
Sign Control		Free			Free			Stop			Stop	
Grade		-9%			0%			0%			0%	
Peak Hour Factor	0.68	0.81	0.88	0.58	0.90	0.76	0.50	0.52	0.50	0.72	0.71	0.50
Hourly flow rate (vph)	56	125	16	64	323	214	8	44	8	88	292	52
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									40			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					1142							
pX, platoon unblocked												
vC, conflicting volume	537			141			732	910	70	754	811	268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			141			732	910	70	754	811	268
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			96			0	82	99	63	0	93
cM capacity (veh/h)	1027			1440			0	247	978	237	282	730
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2				
Volume Total	56	83	58	226	376	60	88	344				
Volume Left	56	0	0	64	0	8	88	0				
Volume Right	0	0	16	0	214	8	0	52				
cSH	1027	1700	1700	1440	1700	241	237	311				
Volume to Capacity	0.05	0.05	0.03	0.04	0.22	0.25	0.37	1.11				
Queue Length 95th (ft)	4	0	0	3	0	24	41	341				
Control Delay (s)	8.7	0.0	0.0	2.4	0.0	25.3	29.0	120.4				
Lane LOS	A			A		D	D	F				
Approach Delay (s)	2.5			0.9		25.3	101.8					
Approach LOS						D	F					
Intersection Summary												
Average Delay			36.1									
Intersection Capacity Utilization			40.1%		ICU Level of Service			A				
Analysis Period (min)			15									

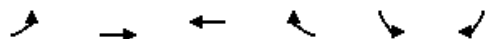
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

Existing AM Peak
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	116	33	116	168	78	225	
Future Volume (Veh/h)	116	33	116	168	78	225	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.76	0.64	0.85	0.79	0.72	0.69	
Hourly flow rate (vph)	153	52	136	213	108	326	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	622	174			349		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	622	174			349		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	60	94			91		
cM capacity (veh/h)	381	839			1207		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	153	52	91	258	108	163	163
Volume Left	153	0	0	0	108	0	0
Volume Right	0	52	0	213	0	0	0
cSH	381	839	1700	1700	1207	1700	1700
Volume to Capacity	0.40	0.06	0.05	0.15	0.09	0.10	0.10
Queue Length 95th (ft)	47	5	0	0	7	0	0
Control Delay (s)	20.6	9.6	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	A			A		
Approach Delay (s)	17.8		0.0		2.1		
Approach LOS	C						
Intersection Summary							
Average Delay			4.6				
Intersection Capacity Utilization			29.4%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

Existing AM Peak
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕↔	↕↔
Traffic Volume (veh/h)	2	254	414	16	325	40
Future Volume (Veh/h)	2	254	414	16	325	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.73	0.85	0.40	0.74	0.67
Hourly flow rate (vph)	8	348	487	40	439	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	527				697	264
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	527				697	264
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				0	92
cM capacity (veh/h)	1036				372	735
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	124	232	325	202	439	60
Volume Left	8	0	0	0	439	0
Volume Right	0	0	0	40	0	60
cSH	1036	1700	1700	1700	372	735
Volume to Capacity	0.01	0.14	0.19	0.12	1.18	0.08
Queue Length 95th (ft)	1	0	0	0	442	7
Control Delay (s)	0.6	0.0	0.0	0.0	137.2	10.3
Lane LOS	A				F	B
Approach Delay (s)	0.2		0.0		121.9	
Approach LOS					F	
Intersection Summary						
Average Delay			44.1			
Intersection Capacity Utilization			36.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

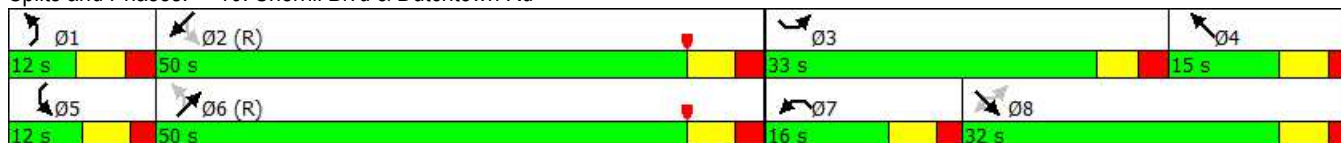
Existing AM Peak
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	287	299	259	185	71	99	271	13	322
Future Volume (vph)	287	299	259	185	71	99	271	13	322
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	33.0	32.0	32.0	16.0	15.0	12.0	50.0	12.0	50.0
Total Split (%)	30.0%	29.1%	29.1%	14.5%	13.6%	10.9%	45.5%	10.9%	45.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	40.0	24.0	24.0	10.0	11.1	54.9	52.7	51.0	44.7
Actuated g/C Ratio	0.36	0.22	0.22	0.09	0.10	0.50	0.48	0.46	0.41
v/c Ratio	0.74	0.86	0.41	0.90	0.53	0.44	0.33	0.05	0.43
Control Delay	37.6	61.5	5.0	80.6	55.4	20.1	16.9	13.8	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	61.5	5.0	80.6	55.4	20.1	16.9	13.8	21.8
LOS	D	E	A	F	E	C	B	B	C
Approach Delay		34.1			73.9		17.6		21.6
Approach LOS		C			E		B		C

Intersection Summary










Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 85 (77%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 32.5
 Intersection Capacity Utilization 62.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

Existing AM Peak
Parkwest Medical Center






















									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	368	348	370	280	101	160	553	20	613
v/c Ratio	0.74	0.86	0.41	0.90	0.53	0.44	0.33	0.05	0.43
Control Delay	37.6	61.5	5.0	80.6	55.4	20.1	16.9	13.8	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	61.5	5.0	80.6	55.4	20.1	16.9	13.8	21.8
Queue Length 50th (ft)	200	232	0	102	63	59	97	7	143
Queue Length 95th (ft)	243	#340	5	105	#124	65	123	14	152
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	533	440	941	312	190	361	1656	431	1416
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.79	0.39	0.90	0.53	0.44	0.33	0.05	0.43

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

Existing AM Peak
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	287	299	259	185	71	7	99	271	122	13	322	140
Future Volume (vph)	287	299	259	185	71	7	99	271	122	13	322	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1818		1770	3369		1770	3376	
Flt Permitted	0.45	1.00	1.00	0.95	1.00		0.32	1.00		0.44	1.00	
Satd. Flow (perm)	836	1863	2787	3433	1818		588	3369		813	3376	
Peak-hour factor, PHF	0.78	0.86	0.70	0.66	0.84	0.44	0.62	0.72	0.69	0.65	0.76	0.74
Adj. Flow (vph)	368	348	370	280	85	16	160	376	177	20	424	189
RTOR Reduction (vph)	0	0	289	0	6	0	0	47	0	0	45	0
Lane Group Flow (vph)	368	348	81	280	95	0	160	506	0	20	568	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	40.0	24.0	24.0	10.0	11.1		55.4	49.1		47.1	44.7	
Effective Green, g (s)	40.0	24.0	24.0	10.0	11.1		55.4	49.1		47.1	44.7	
Actuated g/C Ratio	0.36	0.22	0.22	0.09	0.10		0.50	0.45		0.43	0.41	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	498	406	608	312	183		363	1503		368	1371	
v/s Ratio Prot	c0.15	c0.19		0.08	0.05		c0.03	c0.15		0.00	0.17	
v/s Ratio Perm	0.11		0.03				c0.20			0.02		
v/c Ratio	0.74	0.86	0.13	0.90	0.52		0.44	0.34		0.05	0.41	
Uniform Delay, d1	28.3	41.4	34.6	49.5	46.9		15.7	19.8		18.2	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.7	16.2	0.1	26.4	2.5		0.9	0.6		0.1	0.9	
Delay (s)	34.0	57.5	34.7	75.9	49.4		16.6	20.5		18.3	24.2	
Level of Service	C	E	C	E	D		B	C		B	C	
Approach Delay (s)		41.8			68.9			19.6			24.0	
Approach LOS		D			E			B			C	

Intersection Summary

HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing PM Peak OPT
Parkwest Medical Center

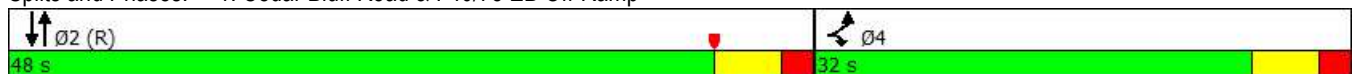
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	430	415	1125	1005
Future Volume (vph)	430	415	1125	1005
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	22.0	22.0	50.0	50.0
Actuated g/C Ratio	0.28	0.28	0.62	0.62
v/c Ratio	0.69	0.67	0.31	0.33
Control Delay	26.7	25.2	7.7	8.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.7	25.2	7.7	8.8
LOS	C	C	A	A
Approach Delay	26.3		7.7	8.8
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 13.6
 Intersection Capacity Utilization 43.2%
 Analysis Period (min) 15





Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing PM Peak OPT
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	671	307	1223	1058
v/c Ratio	0.69	0.67	0.31	0.33
Control Delay	26.7	25.2	7.7	8.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.7	25.2	7.7	8.8
Queue Length 50th (ft)	139	107	72	113
Queue Length 95th (ft)	160	173	113	145
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1226	563	4005	3194
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.55	0.55	0.31	0.33
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing PM Peak OPT
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	430	415	0	1125	1005	0
Future Volume (vph)	430	415	0	1125	1005	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3388	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3388	1455		6408	5111	
Peak-hour factor, PHF	0.85	0.88	1.00	0.92	0.95	1.00
Adj. Flow (vph)	506	472	0	1223	1058	0
RTOR Reduction (vph)	46	61	0	0	0	0
Lane Group Flow (vph)	625	246	0	1223	1058	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	20.0	20.0		48.0	48.0	
Effective Green, g (s)	22.0	22.0		50.0	50.0	
Actuated g/C Ratio	0.28	0.28		0.62	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	931	400		4005	3194	
v/s Ratio Prot	c0.18	0.17		0.19	c0.21	
v/s Ratio Perm						
v/c Ratio	0.67	0.62		0.31	0.33	
Uniform Delay, d ₁	25.8	25.3		7.0	7.1	
Progression Factor	1.00	1.00		1.00	1.12	
Incremental Delay, d ₂	1.5	2.0		0.2	0.3	
Delay (s)	27.3	27.3		7.1	8.2	
Level of Service	C	C		A	A	
Approach Delay (s)	27.3			7.1	8.2	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing PM Peak OPT
Parkwest Medical Center

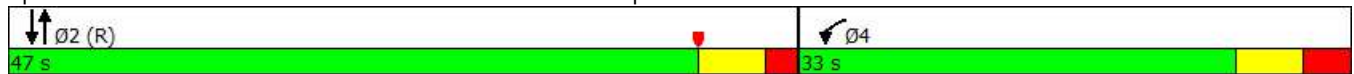
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	703	1110	573
Future Volume (vph)	703	1110	573
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	25.5	46.5	46.5
Actuated g/C Ratio	0.32	0.58	0.58
v/c Ratio	0.72	0.31	0.24
Control Delay	27.8	7.1	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.1	9.0
LOS	C	A	A
Approach Delay	27.8	7.1	9.0
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 43.2%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing PM Peak OPT
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	808	1194	690
v/c Ratio	0.72	0.31	0.24
Control Delay	27.8	7.1	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.1	9.0
Queue Length 50th (ft)	178	68	83
Queue Length 95th (ft)	217	80	69
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	3869	2927
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.63	0.31	0.24
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing PM Peak OPT
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	703	0	1110	0	0	573
Future Volume (vph)	703	0	1110	0	0	573
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.87	1.00	0.93	1.00	1.00	0.83
Adj. Flow (vph)	808	0	1194	0	0	690
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	808	0	1194	0	0	690
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	22.5		44.5			44.5
Effective Green, g (s)	25.5		46.5			46.5
Actuated g/C Ratio	0.32		0.58			0.58
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1125		3868			2926
v/s Ratio Prot	c0.23		c0.18			0.14
v/s Ratio Perm						
v/c Ratio	0.72		0.31			0.24
Uniform Delay, d1	24.1		8.5			8.1
Progression Factor	1.00		0.77			1.04
Incremental Delay, d2	1.8		0.2			0.2
Delay (s)	25.9		6.8			8.6
Level of Service	C		A			A
Approach Delay (s)	25.9		6.8			8.6
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay		13.0	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.45	
Actuated Cycle Length (s)		80.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization		43.2%	ICU Level of Service A
Analysis Period (min)		15	

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

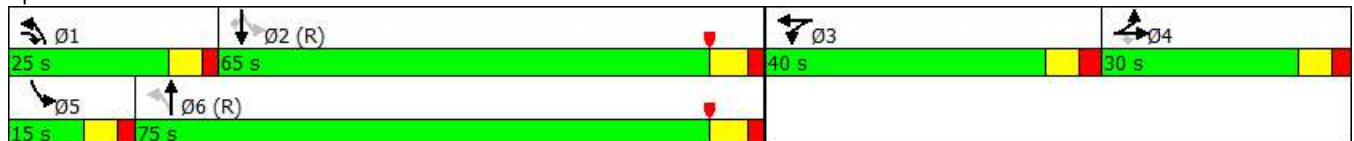
Existing PM Peak OPT
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	54	15	233	231	55	132	426	25	690	23
Future Volume (vph)	54	15	233	231	55	132	426	25	690	23
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.8	22.8	39.3	25.8	25.8	99.7	89.3	93.9	82.9	82.9
Actuated g/C Ratio	0.14	0.14	0.25	0.16	0.16	0.62	0.56	0.59	0.52	0.52
v/c Ratio	0.29	0.69	0.39	0.71	0.57	0.38	0.21	0.09	0.43	0.04
Control Delay	63.7	81.1	52.7	78.0	43.6	14.3	13.8	13.2	23.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	81.1	52.7	78.0	43.6	14.3	13.8	13.2	23.1	0.1
LOS	E	F	D	E	D	B	B	B	C	A
Approach Delay		66.6			55.4		13.9		21.7	
Approach LOS		E			E		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 33.2
 Intersection Capacity Utilization 53.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

Existing PM Peak OPT
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	72	153	146	185	356	152	581	48	812	32
v/c Ratio	0.29	0.69	0.39	0.71	0.57	0.38	0.21	0.09	0.43	0.04
Control Delay	63.7	81.1	52.7	78.0	43.6	14.3	13.8	13.2	23.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.7	81.1	52.7	78.0	43.6	14.3	13.8	13.2	23.1	0.1
Queue Length 50th (ft)	69	163	136	204	127	69	110	17	227	0
Queue Length 95th (ft)	97	136	184	248	89	124	139	22	258	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	287	261	447	364	821	461	2795	535	1870	909
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.59	0.33	0.51	0.43	0.33	0.21	0.09	0.43	0.04
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

Existing PM Peak OPT
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	15	233	231	55	123	132	426	55	25	690	23
Future Volume (vph)	54	15	233	231	55	123	132	426	55	25	690	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.88	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1561	1512	1618	3236		1770	4996		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.99		0.25	1.00		0.42	1.00	1.00
Satd. Flow (perm)	1719	1561	1512	1618	3236		464	4996		772	3610	1615
Peak-hour factor, PHF	0.75	0.54	0.86	0.80	0.60	0.77	0.87	0.83	0.81	0.52	0.85	0.72
Adj. Flow (vph)	72	28	271	289	92	160	152	513	68	48	812	32
RTOR Reduction (vph)	0	0	0	0	100	0	0	9	0	0	0	15
Lane Group Flow (vph)	72	153	146	185	256	0	152	572	0	48	812	17
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	19.8	19.8	30.8	23.3	23.3		96.6	85.6		86.2	80.4	80.4
Effective Green, g (s)	22.8	22.8	34.8	25.8	25.8		99.4	88.1		92.2	82.9	82.9
Actuated g/C Ratio	0.14	0.14	0.22	0.16	0.16		0.62	0.55		0.58	0.52	0.52
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	244	222	328	260	521		394	2750		498	1870	836
v/s Ratio Prot	0.04	c0.10	c0.04	c0.11	0.08		0.03	0.11		0.01	c0.22	
v/s Ratio Perm			0.06				0.21			0.05		0.01
v/c Ratio	0.30	0.69	0.45	0.71	0.49		0.39	0.21		0.10	0.43	0.02
Uniform Delay, d1	61.4	65.2	54.2	63.6	61.1		14.9	18.2		14.8	24.0	18.8
Progression Factor	1.01	1.01	1.01	1.00	1.00		0.80	0.71		0.91	0.85	1.00
Incremental Delay, d2	0.5	7.9	0.7	8.3	0.5		0.4	0.2		0.1	0.7	0.0
Delay (s)	62.5	73.6	55.7	71.9	61.7		12.4	13.1		13.5	21.0	18.8
Level of Service	E	E	E	E	E		B	B		B	C	B
Approach Delay (s)		64.4			65.1			13.0			20.5	
Approach LOS		E			E			B			C	

Intersection Summary		
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.52	
Actuated Cycle Length (s)	160.0	Sum of lost time (s) 15.5
Intersection Capacity Utilization	53.4%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

Existing PM Peak OPT
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	129	3	40	83	0	52	650	7	865
Future Volume (vph)	129	3	40	83	0	52	650	7	865
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.5	27.5	39.6		27.5	126.0	125.5	113.9	113.9
Actuated g/C Ratio	0.17	0.17	0.25		0.17	0.79	0.78	0.71	0.71
v/c Ratio	0.78	0.04	0.12		0.33	0.18	0.36	0.04	0.44
Control Delay	87.9	51.7	10.3		39.1	4.3	4.5	9.0	11.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	87.9	51.7	10.3		39.1	4.3	4.5	9.0	11.0
LOS	F	D	B		D	A	A	A	B
Approach Delay		67.2			39.1		4.5		10.9
Approach LOS		E			D		A		B

Intersection Summary

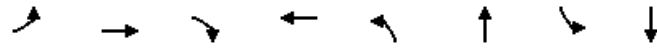
Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 59.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

Existing PM Peak OPT
Parkwest Medical Center



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	152	12	52	155	72	1009	16	1135
v/c Ratio	0.78	0.04	0.12	0.33	0.18	0.36	0.04	0.44
Control Delay	87.9	51.7	10.3	39.1	4.3	4.5	9.0	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.9	51.7	10.3	39.1	4.3	4.5	9.0	11.0
Queue Length 50th (ft)	153	11	0	50	11	91	5	244
Queue Length 95th (ft)	215	8	23	83	17	81	7	270
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	246	419	583	573	525	2792	374	2585
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.03	0.09	0.27	0.14	0.36	0.04	0.44

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

Existing PM Peak OPT
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	129	3	40	83	0	5	52	650	16	7	865	5	
Future Volume (vph)	129	3	40	83	0	5	52	650	16	7	865	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12	
Grade (%)		-9%			-6%			-2%			1%		
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5		
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95		
Flt	1.00	1.00	0.85		0.99		1.00	1.00		1.00	1.00		
Flt Protected	0.95	1.00	1.00		0.96		0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1849	1947	1655		3215		1906	3562		1761	3633		
Flt Permitted	0.59	1.00	1.00		0.74		0.20	1.00		0.28	1.00		
Satd. Flow (perm)	1143	1947	1655		2476		406	3562		526	3633		
Peak-hour factor, PHF	0.85	0.25	0.77	0.58	0.92	0.42	0.72	0.66	0.67	0.44	0.77	0.42	
Adj. Flow (vph)	152	12	52	143	0	12	72	985	24	16	1123	12	
RTOR Reduction (vph)	0	0	40	0	42	0	0	1	0	0	0	0	
Lane Group Flow (vph)	152	12	12	0	113	0	72	1008	0	16	1135	0	
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA		
Protected Phases		4	1		4		1	6			2		
Permitted Phases	4		4	4			6			2			
Actuated Green, G (s)	25.0	25.0	31.6		25.0		123.5	123.5		111.9	111.9		
Effective Green, g (s)	27.5	27.5	35.6		27.5		125.5	125.5		113.9	113.9		
Actuated g/C Ratio	0.17	0.17	0.22		0.17		0.78	0.78		0.71	0.71		
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5		
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0		
Lane Grp Cap (vph)	196	334	368		425		399	2793		374	2586		
v/s Ratio Prot		0.01	0.00				0.01	c0.28			c0.31		
v/s Ratio Perm	c0.13		0.01		0.05		0.13			0.03			
v/c Ratio	0.78	0.04	0.03		0.27		0.18	0.36		0.04	0.44		
Uniform Delay, d1	63.3	55.2	48.7		57.5		5.7	5.2		6.8	9.7		
Progression Factor	1.00	1.00	1.00		1.00		0.72	0.74		1.00	1.00		
Incremental Delay, d2	17.3	0.0	0.0		0.3		0.2	0.4		0.2	0.5		
Delay (s)	80.6	55.2	48.7		57.8		4.3	4.2		7.1	10.2		
Level of Service	F	E	D		E		A	A		A	B		
Approach Delay (s)		71.5			57.8			4.2			10.2		
Approach LOS		E			E			A			B		
Intersection Summary													
HCM 2000 Control Delay			15.6									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50										
Actuated Cycle Length (s)			160.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			59.0%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

Existing PM Peak OPT
Parkwest Medical Center

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	69	44	733	50	864	
Future Volume (vph)	69	44	733	50	864	
Turn Type	Perm	Over	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8			6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	14.0	11.5	26.5	11.5	26.5	14.0
Total Split (s)	25.0	20.0	70.0	20.0	90.0	25.0
Total Split (%)	21.7%	17.4%	60.9%	17.4%	78.3%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.4	6.5	84.5	93.9	94.2	
Actuated g/C Ratio	0.11	0.06	0.73	0.82	0.82	
v/c Ratio	0.56	0.30	0.42	0.16	0.31	
Control Delay	61.8	7.1	5.7	3.9	3.9	
Queue Delay	0.0	0.0	0.1	0.0	0.0	
Total Delay	61.8	7.1	5.8	3.9	3.9	
LOS	E	A	A	A	A	
Approach Delay			5.8		3.9	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 54.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

Existing PM Peak OPT
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	84	52	1070	64	891
v/c Ratio	0.56	0.30	0.42	0.16	0.31
Control Delay	61.8	7.1	5.7	3.9	3.9
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	61.8	7.1	5.8	3.9	3.9
Queue Length 50th (ft)	60	0	102	8	81
Queue Length 95th (ft)	97	7	171	18	130
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	232	278	2520	505	2885
Starvation Cap Reductn	0	0	397	0	0
Spillback Cap Reductn	0	0	0	0	28
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.19	0.50	0.13	0.31
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

Existing PM Peak OPT
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	69	0	44	0	733	207	50	864	0
Future Volume (vph)	0	0	0	69	0	44	0	733	207	50	864	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.96		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3408		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.22	1.00	
Satd. Flow (perm)				1410		1583		3408		412	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.82	0.92	0.85	0.92	0.91	0.78	0.78	0.97	0.92
Adj. Flow (vph)	0	0	0	84	0	52	0	805	265	64	891	0
RTOR Reduction (vph)	0	0	0	0	0	50	0	18	0	0	0	0
Lane Group Flow (vph)	0	0	0	84	0	2	0	1052	0	64	891	0
Turn Type	Perm			Perm		Over	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)				10.8		5.3		80.9		91.7	91.7	
Effective Green, g (s)				10.8		5.3		80.9		91.7	91.7	
Actuated g/C Ratio				0.09		0.05		0.70		0.80	0.80	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				132		72		2397		390	2808	
v/s Ratio Prot						0.00		c0.31		0.01	c0.25	
v/s Ratio Perm				c0.06						0.12		
v/c Ratio				0.64		0.03		0.44		0.16	0.32	
Uniform Delay, d ₁				50.2		52.4		7.3		3.5	3.2	
Progression Factor				1.00		1.00		0.68		1.00	1.00	
Incremental Delay, d ₂				9.6		0.2		0.5		0.2	0.3	
Delay (s)				59.9		52.6		5.5		3.7	3.5	
Level of Service				E		D		A		A	A	
Approach Delay (s)		0.0			57.1			5.5			3.5	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.8									A
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			115.0						18.0			
Intersection Capacity Utilization			54.1%									A
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Existing PM Peak OPT
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	163	83	48	20	133	190	543	19	793
Future Volume (vph)	163	83	48	20	133	190	543	19	793
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	36.6	28.3	50.5	24.5	17.2	66.2	58.1	50.4	43.5
Actuated g/C Ratio	0.32	0.25	0.44	0.21	0.15	0.58	0.51	0.44	0.38
v/c Ratio	0.66	0.23	0.08	0.13	0.81	0.92	0.38	0.06	0.77
Control Delay	40.4	37.7	2.0	27.8	65.7	61.4	19.5	12.9	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	40.4	37.7	2.0	27.8	65.7	61.4	19.5	12.9	38.6
LOS	D	D	A	C	E	E	B	B	D
Approach Delay		33.4			60.0		32.4		38.0
Approach LOS		C			E		C		D

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 37.5
 Intersection Capacity Utilization 73.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd

























Queues
6: Cedar Bluff Road & Dutchtown Rd

Existing PM Peak OPT
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	209	104	60	40	224	302	679	24	1015
v/c Ratio	0.66	0.23	0.08	0.13	0.81	0.92	0.38	0.06	0.77
Control Delay	40.4	37.7	2.0	27.8	65.7	61.4	19.5	12.9	38.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	40.4	37.7	2.0	27.8	65.7	61.4	19.5	12.9	38.6
Queue Length 50th (ft)	115	64	0	20	149	162	175	9	377
Queue Length 95th (ft)	153	102	7	24	208	152	212	19	434
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	321	458	750	330	307	333	1776	386	1318
Starvation Cap Reductn	0	0	0	0	0	0	0	0	27
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.23	0.08	0.12	0.73	0.91	0.38	0.06	0.79
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

Existing PM Peak OPT
Parkwest Medical Center

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	83	48	20	133	27	190	543	29	19	793	87
Future Volume (vph)	163	83	48	20	133	27	190	543	29	19	793	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1788		1770	3508		1761	3457	
Flt Permitted	0.29	1.00	1.00	0.69	1.00		0.10	1.00		0.39	1.00	
Satd. Flow (perm)	542	1863	1583	1285	1788		183	3508		729	3457	
Peak-hour factor, PHF	0.78	0.80	0.80	0.50	0.81	0.45	0.63	0.85	0.72	0.79	0.89	0.70
Adj. Flow (vph)	209	104	60	40	164	60	302	639	40	24	891	124
RTOR Reduction (vph)	0	0	37	0	12	0	0	4	0	0	10	0
Lane Group Flow (vph)	209	104	23	40	212	0	302	675	0	24	1005	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	39.2	28.3	44.5	24.5	19.6		63.3	53.3		45.1	41.1	
Effective Green, g (s)	39.2	28.3	44.5	24.5	19.6		63.3	53.3		45.1	41.1	
Actuated g/C Ratio	0.34	0.25	0.39	0.21	0.17		0.55	0.46		0.39	0.36	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	329	458	695	294	304		324	1625		321	1235	
v/s Ratio Prot	c0.07	0.06	0.00	0.01	0.12		c0.13	0.19		0.00	0.29	
v/s Ratio Perm	c0.14		0.01	0.02			c0.38			0.03		
v/c Ratio	0.64	0.23	0.03	0.14	0.70		0.93	0.42		0.07	0.81	
Uniform Delay, d1	29.3	34.6	21.9	36.4	44.9		32.0	20.5		21.5	33.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.07	
Incremental Delay, d2	4.0	0.3	0.0	0.2	6.8		32.7	0.8		0.1	5.8	
Delay (s)	33.3	34.9	21.9	36.6	51.8		64.7	21.3		21.6	41.7	
Level of Service	C	C	C	D	D		E	C		C	D	
Approach Delay (s)		31.9			49.5			34.6			41.2	
Approach LOS		C			D			C			D	

Intersection Summary

HCM 2000 Control Delay	38.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

Existing PM Peak OPT
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	26	281	7	18	119	59	17	33	15	58	77	5	
Future Volume (Veh/h)	26	281	7	18	119	59	17	33	15	58	77	5	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.65	0.80	0.58	0.64	0.69	0.87	0.71	0.59	0.63	0.54	0.84	0.42	
Hourly flow rate (vph)	40	351	12	28	172	68	24	56	24	107	92	12	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	240			363			637	733	182	570	705	120	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	240			363			637	733	182	570	705	120	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98			91	83	97	67	73	99	
cM capacity (veh/h)	1324			1192			272	328	830	328	340	909	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	40	234	129	114	154	80	24	107	104				
Volume Left	40	0	0	28	0	24	0	107	0				
Volume Right	0	0	12	0	68	0	24	0	12				
cSH	1324	1700	1700	1192	1700	309	830	328	367				
Volume to Capacity	0.03	0.14	0.08	0.02	0.09	0.26	0.03	0.33	0.28				
Queue Length 95th (ft)	2	0	0	2	0	25	2	35	29				
Control Delay (s)	7.8	0.0	0.0	2.1	0.0	20.7	9.5	21.2	18.6				
Lane LOS	A			A		C	A	C	C				
Approach Delay (s)	0.8			0.9		18.1		19.9					
Approach LOS						C		C					
Intersection Summary													
Average Delay			6.7										
Intersection Capacity Utilization			33.6%	ICU Level of Service					A				
Analysis Period (min)			15										

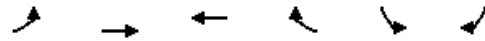
HCM Unsignalized Intersection Capacity Analysis
8: Sherrill Blvd & Park West Blvd

Existing PM Peak OPT
Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	83	39	180	176	31	73	
Future Volume (Veh/h)	83	39	180	176	31	73	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.77	0.89	0.76	0.80	0.65	0.70	
Hourly flow rate (vph)	108	44	237	220	48	104	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	495	228			457		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	495	228			457		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	78	94			96		
cM capacity (veh/h)	482	774			1100		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	108	44	158	299	48	52	52
Volume Left	108	0	0	0	48	0	0
Volume Right	0	44	0	220	0	0	0
cSH	482	774	1700	1700	1100	1700	1700
Volume to Capacity	0.22	0.06	0.09	0.18	0.04	0.03	0.03
Queue Length 95th (ft)	21	5	0	0	3	0	0
Control Delay (s)	14.6	9.9	0.0	0.0	8.4	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	13.3		0.0		2.7		
Approach LOS	B						
Intersection Summary							
Average Delay			3.2				
Intersection Capacity Utilization			28.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

Existing PM Peak OPT
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	295	208	0	8	0
Future Volume (Veh/h)	0	295	208	0	8	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.87	0.54	0.92	0.25	0.92
Hourly flow rate (vph)	0	339	385	0	32	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	385				554	192
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	385				554	192
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1170				462	817
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	113	226	257	128	32	0
Volume Left	0	0	0	0	32	0
Volume Right	0	0	0	0	0	0
cSH	1170	1700	1700	1700	462	1700
Volume to Capacity	0.00	0.13	0.15	0.08	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	13.4	0.0
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		13.4	
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			18.2%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

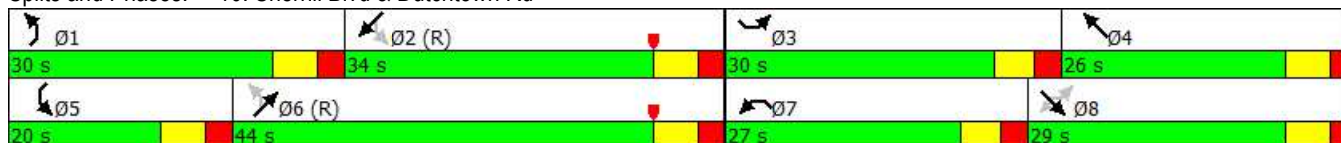
Existing PM Peak OPT
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	290	147	97	341	204	237	538	11	387
Future Volume (vph)	290	147	97	341	204	237	538	11	387
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	45.6	23.1	23.1	19.6	20.2	58.8	50.5	38.4	31.7
Actuated g/C Ratio	0.38	0.19	0.19	0.16	0.17	0.49	0.42	0.32	0.26
v/c Ratio	0.90	0.59	0.22	0.81	0.91	0.79	0.58	0.13	0.57
Control Delay	56.5	51.8	2.5	60.7	82.2	33.7	29.8	20.0	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	51.8	2.5	60.7	82.2	33.7	29.8	20.0	41.5
LOS	E	D	A	E	F	C	C	B	D
Approach Delay		43.8			69.0		31.0		40.3
Approach LOS		D			E		C		D

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 44.1
 Intersection Capacity Utilization 73.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

Existing PM Peak OPT
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	358	213	152	455	285	365	855	32	524
v/c Ratio	0.90	0.59	0.22	0.81	0.91	0.79	0.58	0.13	0.57
Control Delay	56.5	51.8	2.5	60.7	82.2	33.7	29.8	20.0	41.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.5	51.8	2.5	60.7	82.2	33.7	29.8	20.0	41.5
Queue Length 50th (ft)	211	152	0	174	218	180	283	13	188
Queue Length 95th (ft)	#287	172	0	188	#291	171	267	11	225
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	420	363	708	600	315	491	1469	355	927
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.59	0.21	0.76	0.90	0.74	0.58	0.09	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

Existing PM Peak OPT
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	290	147	97	341	204	13	237	538	86	11	387	41
Future Volume (vph)	290	147	97	341	204	13	237	538	86	11	387	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1843		1770	3472		1770	3487	
Flt Permitted	0.19	1.00	1.00	0.95	1.00		0.27	1.00		0.32	1.00	
Satd. Flow (perm)	350	1863	2787	3433	1843		496	3472		590	3487	
Peak-hour factor, PHF	0.81	0.69	0.64	0.75	0.77	0.65	0.65	0.72	0.80	0.34	0.82	0.79
Adj. Flow (vph)	358	213	152	455	265	20	365	747	108	32	472	52
RTOR Reduction (vph)	0	0	123	0	2	0	0	8	0	0	7	0
Lane Group Flow (vph)	358	213	29	455	283	0	365	847	0	32	517	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	45.6	23.1	23.1	19.6	20.2		58.8	47.9		36.1	31.7	
Effective Green, g (s)	45.6	23.1	23.1	19.6	20.2		58.8	47.9		36.1	31.7	
Actuated g/C Ratio	0.38	0.19	0.19	0.16	0.17		0.49	0.40		0.30	0.26	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	399	358	536	560	310		461	1385		220	921	
v/s Ratio Prot	c0.17	0.11		0.13	0.15		c0.14	0.24		0.01	0.15	
v/s Ratio Perm	c0.17		0.01				c0.25			0.04		
v/c Ratio	0.90	0.59	0.05	0.81	0.91		0.79	0.61		0.15	0.56	
Uniform Delay, d1	30.8	44.2	39.5	48.4	49.0		21.5	28.7		29.9	38.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.0	2.6	0.0	8.8	29.4		9.0	2.0		0.3	2.5	
Delay (s)	52.8	46.8	39.6	57.2	78.4		30.5	30.7		30.2	40.6	
Level of Service	D	D	D	E	E		C	C		C	D	
Approach Delay (s)		48.3			65.4			30.6			40.0	
Approach LOS		D			E			C			D	









Intersection Summary

HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing Midday Peak
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	325	400	1119	948
Future Volume (vph)	325	400	1119	948
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	27.0	27.0	43.0	43.0
Total Split (%)	38.6%	38.6%	61.4%	61.4%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	17.8	17.8	44.2	44.2
Actuated g/C Ratio	0.25	0.25	0.63	0.63
v/c Ratio	0.64	0.63	0.30	0.35
Control Delay	23.2	23.1	6.6	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.2	23.1	6.6	7.0
LOS	C	C	A	A
Approach Delay	23.2		6.6	7.0
Approach LOS	C		A	A

Intersection Summary





Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.64
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 47.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing Midday Peak
 Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	586	269	1230	1129
v/c Ratio	0.64	0.63	0.30	0.35
Control Delay	23.2	23.1	6.6	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.2	23.1	6.6	7.0
Queue Length 50th (ft)	100	80	61	90
Queue Length 95th (ft)	113	142	97	100
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1155	527	4046	3227
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.51	0.30	0.35
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing Midday Peak
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	325	400	0	1119	948	0
Future Volume (vph)	325	400	0	1119	948	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.95	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3365	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3365	1455		6408	5111	
Peak-hour factor, PHF	0.80	0.89	1.00	0.91	0.84	1.00
Adj. Flow (vph)	406	449	0	1230	1129	0
RTOR Reduction (vph)	54	54	0	0	0	0
Lane Group Flow (vph)	532	215	0	1230	1129	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	15.8	15.8		42.2	42.2	
Effective Green, g (s)	17.8	17.8		44.2	44.2	
Actuated g/C Ratio	0.25	0.25		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	855	369		4046	3227	
v/s Ratio Prot	c0.16	0.15		0.19	c0.22	
v/s Ratio Perm						
v/c Ratio	0.62	0.58		0.30	0.35	
Uniform Delay, d ₁	23.1	22.8		5.9	6.1	
Progression Factor	1.00	1.00		1.00	1.02	
Incremental Delay, d ₂	1.0	1.5		0.2	0.3	
Delay (s)	24.1	24.3		6.1	6.5	
Level of Service	C	C		A	A	
Approach Delay (s)	24.2			6.1	6.5	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing Midday Peak
Parkwest Medical Center

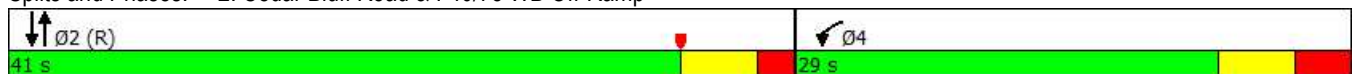
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	707	1443	423
Future Volume (vph)	707	1443	423
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	29.0	41.0	41.0
Total Split (%)	41.4%	58.6%	58.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	22.1	39.9	39.9
Actuated g/C Ratio	0.32	0.57	0.57
v/c Ratio	0.69	0.40	0.19
Control Delay	24.2	11.0	7.1
Queue Delay	0.0	0.0	0.0
Total Delay	24.2	11.0	7.1
LOS	C	B	A
Approach Delay	24.2	11.0	7.1
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 41 (59%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 47.7%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing Midday Peak
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	768	1503	557
v/c Ratio	0.69	0.40	0.19
Control Delay	24.2	11.0	7.1
Queue Delay	0.0	0.0	0.0
Total Delay	24.2	11.0	7.1
Queue Length 50th (ft)	146	72	61
Queue Length 95th (ft)	191	178	34
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1260	3791	2867
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.40	0.19
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing Midday Peak
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	707	0	1443	0	0	423
Future Volume (vph)	707	0	1443	0	0	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	1.00	0.96	1.00	1.00	0.76
Adj. Flow (vph)	768	0	1503	0	0	557
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	768	0	1503	0	0	557
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	19.1		37.9			37.9
Effective Green, g (s)	22.1		39.9			39.9
Actuated g/C Ratio	0.32		0.57			0.57
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1114		3793			2869
v/s Ratio Prot	c0.22		c0.23			0.11
v/s Ratio Perm						
v/c Ratio	0.69		0.40			0.19
Uniform Delay, d1	20.9		8.4			7.3
Progression Factor	1.00		1.21			0.91
Incremental Delay, d2	1.4		0.3			0.1
Delay (s)	22.4		10.4			6.8
Level of Service	C		B			A
Approach Delay (s)	22.4		10.4			6.8
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

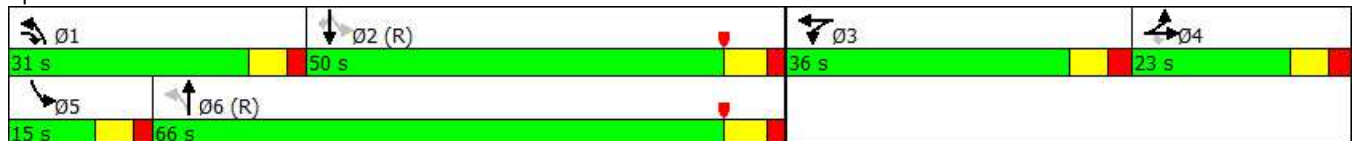
Existing Midday Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	70	33	214	104	169	248	612	25	376	38
Future Volume (vph)	70	33	214	104	169	248	612	25	376	38
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	23.0	23.0	31.0	36.0	36.0	31.0	66.0	15.0	50.0	50.0
Total Split (%)	16.4%	16.4%	22.1%	25.7%	25.7%	22.1%	47.1%	10.7%	35.7%	35.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	20.2	20.2	43.4	20.5	20.5	87.8	77.4	74.9	64.1	64.1
Actuated g/C Ratio	0.14	0.14	0.31	0.15	0.15	0.63	0.55	0.54	0.46	0.46
v/c Ratio	0.35	0.63	0.29	0.50	0.67	0.58	0.29	0.12	0.30	0.06
Control Delay	56.2	67.4	36.9	62.0	55.0	21.9	14.8	11.1	22.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Total Delay	56.2	67.4	36.9	62.0	55.0	23.0	14.8	11.1	22.7	0.2
LOS	E	E	D	E	E	C	B	B	C	A
Approach Delay		53.5			56.8		17.2		19.8	
Approach LOS		D			E		B		B	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 30.2
 Intersection Capacity Utilization 52.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

Existing Midday Peak
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	88	147	137	119	357	340	813	48	501	52
v/c Ratio	0.35	0.63	0.29	0.50	0.67	0.58	0.29	0.12	0.30	0.06
Control Delay	56.2	67.4	36.9	62.0	55.0	21.9	14.8	11.1	22.7	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0
Total Delay	56.2	67.4	36.9	62.0	55.0	23.0	14.8	11.1	22.7	0.2
Queue Length 50th (ft)	74	135	101	110	148	141	140	14	128	0
Queue Length 95th (ft)	108	128	144	152	154	222	169	17	140	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	266	250	547	369	800	646	2766	434	1652	831
Starvation Cap Reductn	0	0	0	0	0	128	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.59	0.25	0.32	0.45	0.66	0.29	0.11	0.30	0.06
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

Existing Midday Peak
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	33	214	104	169	95	248	612	74	25	376	38
Future Volume (vph)	70	33	214	104	169	95	248	612	74	25	376	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.91	0.85	1.00	0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1613	1512	1618	3343		1770	4982		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.38	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1719	1613	1512	1618	3343		704	4982		612	3610	1615
Peak-hour factor, PHF	0.80	0.59	0.94	0.79	0.74	0.82	0.73	0.87	0.67	0.52	0.75	0.73
Adj. Flow (vph)	88	56	228	132	228	116	340	703	110	48	501	52
RTOR Reduction (vph)	0	0	0	0	41	0	0	12	0	0	0	28
Lane Group Flow (vph)	88	147	137	119	316	0	340	801	0	48	501	24
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	17.2	17.2	34.9	18.0	18.0		85.3	73.7		67.2	61.6	61.6
Effective Green, g (s)	20.2	20.2	38.9	20.5	20.5		87.3	76.2		73.2	64.1	64.1
Actuated g/C Ratio	0.14	0.14	0.28	0.15	0.15		0.62	0.54		0.52	0.46	0.46
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	248	232	420	236	489		588	2711		389	1652	739
v/s Ratio Prot	0.05	c0.09	0.05	0.07	c0.09		c0.08	0.16		0.01	0.14	
v/s Ratio Perm			0.04				c0.28			0.06		0.01
v/c Ratio	0.35	0.63	0.33	0.50	0.65		0.58	0.30		0.12	0.30	0.03
Uniform Delay, d1	54.0	56.4	40.1	55.1	56.3		13.3	17.3		16.4	23.9	20.9
Progression Factor	0.99	0.99	1.02	1.00	1.00		1.34	0.81		0.81	0.83	1.00
Incremental Delay, d2	0.6	4.9	0.3	1.2	2.6		1.1	0.3		0.1	0.4	0.1
Delay (s)	54.1	60.7	41.2	56.3	58.9		18.8	14.3		13.4	20.4	21.0
Level of Service	D	E	D	E	E		B	B		B	C	C
Approach Delay (s)		52.0			58.3			15.6			19.9	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

Existing Midday Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	117	18	134	105	9	165	726	22	803
Future Volume (vph)	117	18	134	105	9	165	726	22	803
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	35.0	35.0	25.0	35.0	35.0	25.0	105.0	80.0	80.0
Total Split (%)	25.0%	25.0%	17.9%	25.0%	25.0%	17.9%	75.0%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	23.5	23.5	37.5		23.5	110.0	109.5	96.0	96.0
Actuated g/C Ratio	0.17	0.17	0.27		0.17	0.79	0.78	0.69	0.69
v/c Ratio	0.71	0.07	0.36		0.40	0.38	0.33	0.07	0.39
Control Delay	75.1	46.3	15.1		47.0	7.3	3.7	10.0	10.8
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	46.3	15.1		47.0	7.3	3.7	10.0	10.8
LOS	E	D	B		D	A	A	A	B
Approach Delay		40.0			47.0		4.3		10.8
Approach LOS		D			D		A		B

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 70 (50%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 14.4
 Intersection Capacity Utilization 61.3%
 Analysis Period (min) 15

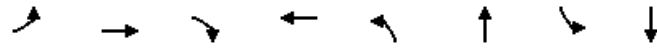
Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

Existing Midday Peak
Parkwest Medical Center
























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	131	24	191	176	188	908	28	968
v/c Ratio	0.71	0.07	0.36	0.40	0.38	0.33	0.07	0.39
Control Delay	75.1	46.3	15.1	47.0	7.3	3.7	10.0	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	46.3	15.1	47.0	7.3	3.7	10.0	10.8
Queue Length 50th (ft)	114	19	45	66	28	76	8	182
Queue Length 95th (ft)	175	36	55	55	48	97	21	282
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	247	438	660	583	608	2768	399	2469
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.05	0.29	0.30	0.31	0.33	0.07	0.39

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

Existing Midday Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	18	134	105	9	22	165	726	44	22	803	51
Future Volume (vph)	117	18	134	105	9	22	165	726	44	22	803	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3186		1906	3537		1761	3596	
Flt Permitted	0.56	1.00	1.00		0.76		0.25	1.00		0.31	1.00	
Satd. Flow (perm)	1098	1947	1655		2521		493	3537		582	3596	
Peak-hour factor, PHF	0.89	0.75	0.70	0.85	0.56	0.61	0.88	0.86	0.69	0.79	0.90	0.67
Adj. Flow (vph)	131	24	191	124	16	36	188	844	64	28	892	76
RTOR Reduction (vph)	0	0	96	0	17	0	0	3	0	0	3	0
Lane Group Flow (vph)	131	24	95	0	159	0	188	905	0	28	965	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	21.0	21.0	29.5		21.0		107.5	107.5		94.0	94.0	
Effective Green, g (s)	23.5	23.5	33.5		23.5		109.5	109.5		96.0	96.0	
Actuated g/C Ratio	0.17	0.17	0.24		0.17		0.78	0.78		0.69	0.69	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	184	326	396		423		491	2766		399	2465	
v/s Ratio Prot		0.01	0.02				c0.03	0.26			0.27	
v/s Ratio Perm	c0.12		0.04	0.06			c0.27			0.05		
v/c Ratio	0.71	0.07	0.24	0.37			0.38	0.33		0.07	0.39	
Uniform Delay, d1	55.1	49.1	43.0		51.7		5.2	4.5		7.3	9.5	
Progression Factor	1.00	1.00	1.00		1.00		1.22	0.68		1.00	1.00	
Incremental Delay, d2	12.2	0.1	0.2		0.6		0.4	0.3		0.3	0.5	
Delay (s)	67.3	49.2	43.2		52.3		6.7	3.4		7.6	9.9	
Level of Service	E	D	D		D		A	A		A	A	
Approach Delay (s)		52.7			52.3			3.9			9.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			15.9				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			61.3%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

Existing Midday Peak
Parkwest Medical Center

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↘↗	
Traffic Volume (vph)	71	34	560	74	752	
Future Volume (vph)	71	34	560	74	752	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	20.0	11.5	26.5	11.5	26.5	20.0
Total Split (s)	25.0	15.0	50.0	15.0	65.0	25.0
Total Split (%)	27.8%	16.7%	55.6%	16.7%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	10.8	21.3	56.7	70.5	70.8	
Actuated g/C Ratio	0.12	0.24	0.63	0.78	0.79	
v/c Ratio	0.47	0.15	0.35	0.23	0.29	
Control Delay	45.4	6.9	6.3	4.3	4.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.4	6.9	6.3	4.3	4.1	
LOS	D	A	A	A	A	
Approach Delay			6.3		4.1	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 6.9
 Intersection Capacity Utilization 55.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

Existing Midday Peak
Parkwest Medical Center


























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	80	64	772	123	800
v/c Ratio	0.47	0.15	0.35	0.23	0.29
Control Delay	45.4	6.9	6.3	4.3	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.4	6.9	6.3	4.3	4.1
Queue Length 50th (ft)	43	0	57	15	63
Queue Length 95th (ft)	83	5	93	22	107
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	297	461	2181	570	2769
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.27	0.14	0.35	0.22	0.29

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

Existing Midday Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (vph)	0	0	0	71	0	34	0	560	116	74	752	0
Future Volume (vph)	0	0	0	71	0	34	0	560	116	74	752	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3441		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.31	1.00	
Satd. Flow (perm)				1410		1583		3441		567	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.89	0.92	0.53	0.92	0.89	0.81	0.60	0.94	0.92
Adj. Flow (vph)	0	0	0	80	0	64	0	629	143	123	800	0
RTOR Reduction (vph)	0	0	0	0	0	52	0	16	0	0	0	0
Lane Group Flow (vph)	0	0	0	80	0	12	0	756	0	123	800	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				9.2		16.5		55.5		68.3	68.3	
Effective Green, g (s)				9.2		16.5		55.5		68.3	68.3	
Actuated g/C Ratio				0.10		0.18		0.62		0.76	0.76	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				144		290		2121		527	2672	
v/s Ratio Prot						0.00		c0.22		0.02	c0.23	
v/s Ratio Perm				c0.06		0.00				0.16		
v/c Ratio				0.56		0.04		0.36		0.23	0.30	
Uniform Delay, d ₁				38.5		30.2		8.5		3.4	3.4	
Progression Factor				1.00		1.00		0.66		1.00	1.00	
Incremental Delay, d ₂				4.6		0.1		0.5		0.2	0.3	
Delay (s)				43.0		30.3		6.0		3.6	3.7	
Level of Service				D		C		A		A	A	
Approach Delay (s)		0.0			37.4			6.0			3.7	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.3									
HCM 2000 Volume to Capacity ratio			0.39									
Actuated Cycle Length (s)			90.0						18.0			
Intersection Capacity Utilization			55.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Existing Midday Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	59	34	50	42	66	128	493	16	753
Future Volume (vph)	59	34	50	42	66	128	493	16	753
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	13.0	17.0	15.0	13.0	17.0	15.0	47.0	13.0	45.0
Total Split (%)	14.4%	18.9%	16.7%	14.4%	18.9%	16.7%	52.2%	14.4%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	14.5	9.3	18.4	17.7	9.5	57.6	52.6	51.0	44.1
Actuated g/C Ratio	0.16	0.10	0.20	0.20	0.11	0.64	0.58	0.57	0.49
v/c Ratio	0.32	0.23	0.14	0.32	0.46	0.44	0.30	0.06	0.50
Control Delay	29.8	39.5	1.3	28.3	41.1	11.9	14.0	6.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	39.5	1.3	28.3	41.1	11.9	14.0	6.0	18.0
LOS	C	D	A	C	D	B	B	A	B
Approach Delay		22.8			34.7		13.6		17.6
Approach LOS		C			C		B		B

Intersection Summary










Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 18 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 18.0
 Intersection Capacity Utilization 55.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

Existing Midday Peak
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	44	60	91	92	173	616	32	865
v/c Ratio	0.32	0.23	0.14	0.32	0.46	0.44	0.30	0.06	0.50
Control Delay	29.8	39.5	1.3	28.3	41.1	11.9	14.0	6.0	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	39.5	1.3	28.3	41.1	11.9	14.0	6.0	18.0
Queue Length 50th (ft)	35	24	0	40	45	40	113	4	201
Queue Length 95th (ft)	55	46	1	36	87	60	163	7	274
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	257	227	427	291	230	404	2084	522	1774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.19	0.14	0.31	0.40	0.43	0.30	0.06	0.49
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

Existing Midday Peak
Parkwest Medical Center

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	34	50	42	66	8	128	493	40	16	753	54
Future Volume (vph)	59	34	50	42	66	8	128	493	40	16	753	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1814		1770	3491		1761	3482	
Flt Permitted	0.70	1.00	1.00	0.49	1.00		0.22	1.00		0.42	1.00	
Satd. Flow (perm)	1299	1863	1583	909	1814		407	3491		776	3482	
Peak-hour factor, PHF	0.74	0.77	0.83	0.46	0.87	0.50	0.74	0.88	0.71	0.50	0.94	0.84
Adj. Flow (vph)	80	44	60	91	76	16	173	560	56	32	801	64
RTOR Reduction (vph)	0	0	50	0	9	0	0	7	0	0	6	0
Lane Group Flow (vph)	80	44	10	91	83	0	173	609	0	32	859	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	13.3	6.1	14.8	19.3	9.1		54.0	45.3		44.4	40.5	
Effective Green, g (s)	13.3	6.1	14.8	19.3	9.1		54.0	45.3		44.4	40.5	
Actuated g/C Ratio	0.15	0.07	0.16	0.21	0.10		0.60	0.50		0.49	0.45	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	229	126	365	292	183		375	1757		425	1566	
v/s Ratio Prot	0.03	0.02	0.00	c0.04	c0.05		c0.04	0.17		0.00	c0.25	
v/s Ratio Perm	0.02		0.00	0.03			0.23			0.03		
v/c Ratio	0.35	0.35	0.03	0.31	0.45		0.46	0.35		0.08	0.55	
Uniform Delay, d1	34.2	40.1	31.6	29.3	38.1		9.7	13.4		11.8	18.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.66	0.92	
Incremental Delay, d2	0.9	1.7	0.0	0.6	1.8		0.9	0.5		0.1	1.4	
Delay (s)	35.2	41.7	31.6	29.9	39.9		10.6	14.0		7.9	17.9	
Level of Service	D	D	C	C	D		B	B		A	B	
Approach Delay (s)		35.6			34.9			13.3			17.6	
Approach LOS		D			C			B			B	

Intersection Summary

HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
 7: Park 40 Blvd & Sherrill Blvd

Existing Midday Peak
 Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	20	224	17	29	181	36	7	20	23	24	45	9	
Future Volume (Veh/h)	20	224	17	29	181	36	7	20	23	24	45	9	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.83	0.92	0.61	0.60	0.73	0.75	0.88	0.83	0.57	0.75	0.66	0.56	
Hourly flow rate (vph)	24	243	28	48	248	48	8	24	40	32	68	16	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	296			271			575	697	136	590	687	148	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	296			271			575	697	136	590	687	148	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	98			96			98	93	95	91	80	98	
cM capacity (veh/h)	1262			1289			321	343	888	339	348	872	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	24	162	109	172	172	32	40	32	84				
Volume Left	24	0	0	48	0	8	0	32	0				
Volume Right	0	0	28	0	48	0	40	0	16				
cSH	1262	1700	1700	1289	1700	337	888	339	393				
Volume to Capacity	0.02	0.10	0.06	0.04	0.10	0.09	0.05	0.09	0.21				
Queue Length 95th (ft)	1	0	0	3	0	8	4	8	20				
Control Delay (s)	7.9	0.0	0.0	2.4	0.0	16.8	9.2	16.7	16.6				
Lane LOS	A			A		C	A	C	C				
Approach Delay (s)	0.6			1.2		12.6		16.7					
Approach LOS						B		C					
Intersection Summary													
Average Delay	4.2												
Intersection Capacity Utilization	31.7%			ICU Level of Service					A				
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
8: Sherrill Blvd & Park West Blvd

Existing Midday Peak
Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	104	37	158	133	56	89	
Future Volume (Veh/h)	104	37	158	133	56	89	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.84	0.77	0.61	0.83	0.67	0.74	
Hourly flow rate (vph)	124	48	259	160	84	120	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	567	210			419		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	567	210			419		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	70	94			93		
cM capacity (veh/h)	420	796			1137		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	124	48	173	246	84	60	60
Volume Left	124	0	0	0	84	0	0
Volume Right	0	48	0	160	0	0	0
cSH	420	796	1700	1700	1137	1700	1700
Volume to Capacity	0.30	0.06	0.10	0.14	0.07	0.04	0.04
Queue Length 95th (ft)	30	5	0	0	6	0	0
Control Delay (s)	17.1	9.8	0.0	0.0	8.4	0.0	0.0
Lane LOS	C	A			A		
Approach Delay (s)	15.1		0.0		3.5		
Approach LOS	C						
Intersection Summary							
Average Delay			4.2				
Intersection Capacity Utilization			27.7%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

Existing Midday Peak
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	367	224	0	147	3
Future Volume (Veh/h)	0	367	224	0	147	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.95	0.66	0.92	0.48	0.25
Hourly flow rate (vph)	0	386	339	0	306	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	339				532	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	339				532	170
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				36	99
cM capacity (veh/h)	1217				477	845
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	129	257	226	113	306	12
Volume Left	0	0	0	0	306	0
Volume Right	0	0	0	0	0	12
cSH	1217	1700	1700	1700	477	845
Volume to Capacity	0.00	0.15	0.13	0.07	0.64	0.01
Queue Length 95th (ft)	0	0	0	0	111	1
Control Delay (s)	0.0	0.0	0.0	0.0	25.0	9.3
Lane LOS					D	A
Approach Delay (s)	0.0		0.0		24.4	
Approach LOS					C	
Intersection Summary						
Average Delay			7.5			
Intersection Capacity Utilization			25.0%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

Existing Midday Peak
Parkwest Medical Center

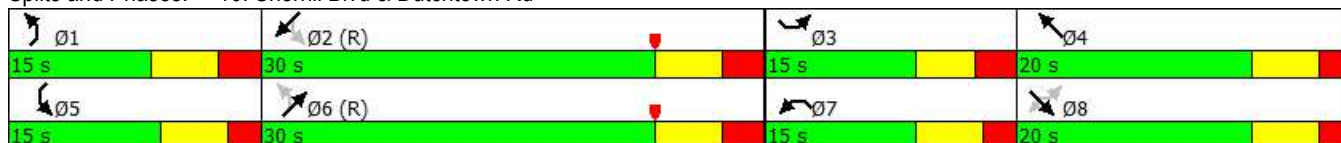
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	66	166	142	85	208	123	148	28	55
Future Volume (vph)	66	166	142	85	208	123	148	28	55
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	15.0	20.0	20.0	15.0	20.0	15.0	30.0	15.0	30.0
Total Split (%)	18.8%	25.0%	25.0%	18.8%	25.0%	18.8%	37.5%	18.8%	37.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	21.3	13.3	13.3	8.3	16.1	36.7	31.6	32.9	25.4
Actuated g/C Ratio	0.27	0.17	0.17	0.10	0.20	0.46	0.40	0.41	0.32
v/c Ratio	0.32	0.72	0.34	0.46	0.78	0.25	0.24	0.12	0.18
Control Delay	20.8	46.0	6.1	37.8	47.8	13.1	11.5	12.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	46.0	6.1	37.8	47.8	13.1	11.5	12.0	9.3
LOS	C	D	A	D	D	B	B	B	A
Approach Delay		25.3			44.2		12.0		9.9
Approach LOS		C			D		B		A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 65 (81%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 24.4
 Intersection Capacity Utilization 52.8%
 Analysis Period (min) 15










Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

Existing Midday Peak
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	96	224	218	163	291	137	332	60	199
v/c Ratio	0.32	0.72	0.34	0.46	0.78	0.25	0.24	0.12	0.18
Control Delay	20.8	46.0	6.1	37.8	47.8	13.1	11.5	12.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	46.0	6.1	37.8	47.8	13.1	11.5	12.0	9.3
Queue Length 50th (ft)	32	106	0	39	140	37	36	15	14
Queue Length 95th (ft)	48	142	7	38	#222	68	53	17	25
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	320	330	673	386	374	544	1395	531	1104
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.68	0.32	0.42	0.78	0.25	0.24	0.11	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

Existing Midday Peak
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	66	166	142	85	208	14	123	148	98	28	55	85
Future Volume (vph)	66	166	142	85	208	14	123	148	98	28	55	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1840		1770	3315		1770	3211	
Flt Permitted	0.39	1.00	1.00	0.95	1.00		0.54	1.00		0.55	1.00	
Satd. Flow (perm)	731	1863	2787	3433	1840		1010	3315		1027	3211	
Peak-hour factor, PHF	0.69	0.74	0.65	0.52	0.78	0.58	0.90	0.77	0.70	0.47	0.72	0.69
Adj. Flow (vph)	96	224	218	163	267	24	137	192	140	60	76	123
RTOR Reduction (vph)	0	0	178	0	4	0	0	91	0	0	86	0
Lane Group Flow (vph)	96	224	40	163	287	0	137	241	0	60	113	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	21.2	14.5	14.5	8.3	16.1		36.0	28.1		28.9	24.3	
Effective Green, g (s)	21.2	14.5	14.5	8.3	16.1		36.0	28.1		28.9	24.3	
Actuated g/C Ratio	0.26	0.18	0.18	0.10	0.20		0.45	0.35		0.36	0.30	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	280	337	505	356	370		529	1164		413	975	
v/s Ratio Prot	0.03	0.12		c0.05	c0.16		c0.03	0.07		0.01	0.04	
v/s Ratio Perm	0.06		0.01				c0.09			0.04		
v/c Ratio	0.34	0.66	0.08	0.46	0.78		0.26	0.21		0.15	0.12	
Uniform Delay, d1	23.0	30.5	27.2	33.7	30.2		13.2	18.2		16.9	20.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	4.9	0.1	0.9	9.8		0.3	0.4		0.2	0.2	
Delay (s)	23.7	35.4	27.3	34.7	40.0		13.5	18.6		17.1	20.3	
Level of Service	C	D	C	C	D		B	B		B	C	
Approach Delay (s)		30.0			38.1			17.1			19.6	
Approach LOS		C			D			B			B	









Intersection Summary

HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

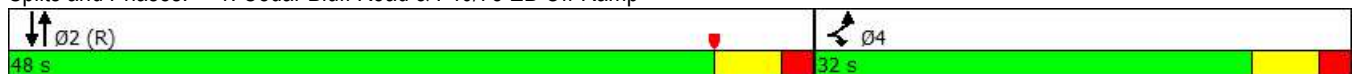
Existing School PM Peak
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	393	318	975	877
Future Volume (vph)	393	318	975	877
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effect Green (s)	21.0	21.0	51.0	51.0
Actuated g/C Ratio	0.26	0.26	0.64	0.64
v/c Ratio	0.68	0.67	0.28	0.34
Control Delay	26.5	26.4	7.2	8.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.5	26.4	7.2	8.1
LOS	C	C	A	A
Approach Delay	26.5		7.2	8.1
Approach LOS	C		A	A

Intersection Summary





Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.2
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing School PM Peak
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	643	294	1147	1096
v/c Ratio	0.68	0.67	0.28	0.34
Control Delay	26.5	26.4	7.2	8.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.5	26.4	7.2	8.1
Queue Length 50th (ft)	130	105	64	109
Queue Length 95th (ft)	150	106	98	110
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1230	559	4083	3256
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.53	0.28	0.34
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Existing School PM Peak
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔↔	↗		↑↑↑	↓↓↓	
Traffic Volume (vph)	393	318	0	975	877	0
Future Volume (vph)	393	318	0	975	877	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3375	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3375	1455		6408	5111	
Peak-hour factor, PHF	0.85	0.67	1.00	0.85	0.80	1.00
Adj. Flow (vph)	462	475	0	1147	1096	0
RTOR Reduction (vph)	57	57	0	0	0	0
Lane Group Flow (vph)	586	237	0	1147	1096	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	19.0	19.0		49.0	49.0	
Effective Green, g (s)	21.0	21.0		51.0	51.0	
Actuated g/C Ratio	0.26	0.26		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	885	381		4085	3258	
v/s Ratio Prot	c0.17	0.16		0.18	c0.21	
v/s Ratio Perm						
v/c Ratio	0.66	0.62		0.28	0.34	
Uniform Delay, d ₁	26.3	26.0		6.4	6.7	
Progression Factor	1.00	1.00		1.00	1.08	
Incremental Delay, d ₂	1.5	2.3		0.2	0.3	
Delay (s)	27.8	28.3		6.6	7.5	
Level of Service	C	C		A	A	
Approach Delay (s)	27.9			6.6	7.5	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing School PM Peak
Parkwest Medical Center

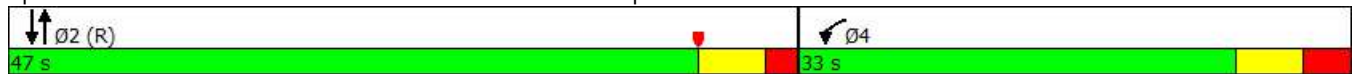
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	617	1368	614
Future Volume (vph)	617	1368	614
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	22.4	49.6	49.6
Actuated g/C Ratio	0.28	0.62	0.62
v/c Ratio	0.66	0.39	0.23
Control Delay	28.6	6.5	7.0
Queue Delay	0.0	0.0	0.0
Total Delay	28.6	6.5	7.0
LOS	C	A	A
Approach Delay	28.6	6.5	7.0
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 11.4
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp












Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing School PM Peak
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	656	1629	722
v/c Ratio	0.66	0.39	0.23
Control Delay	28.6	6.5	7.0
Queue Delay	0.0	0.0	0.0
Total Delay	28.6	6.5	7.0
Queue Length 50th (ft)	148	90	93
Queue Length 95th (ft)	184	97	53
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	4127	3122
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.51	0.39	0.23
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

Existing School PM Peak
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	617	0	1368	0	0	614
Future Volume (vph)	617	0	1368	0	0	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Fr _t	1.00		1.00			1.00
Fl _t Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Fl _t Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.94	1.00	0.84	1.00	0.92	0.85
Adj. Flow (vph)	656	0	1629	0	0	722
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	656	0	1629	0	0	722
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	19.4		47.6			47.6
Effective Green, g (s)	22.4		49.6			49.6
Actuated g/C Ratio	0.28		0.62			0.62
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	988		4126			3121
v/s Ratio Prot	c0.19		c0.24			0.14
v/s Ratio Perm						
v/c Ratio	0.66		0.39			0.23
Uniform Delay, d1	25.5		7.6			6.7
Progression Factor	1.00		0.76			0.96
Incremental Delay, d2	1.3		0.3			0.2
Delay (s)	26.8		6.1			6.6
Level of Service	C		A			A
Approach Delay (s)	26.8		6.1			6.6
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			10.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.48			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			44.1%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

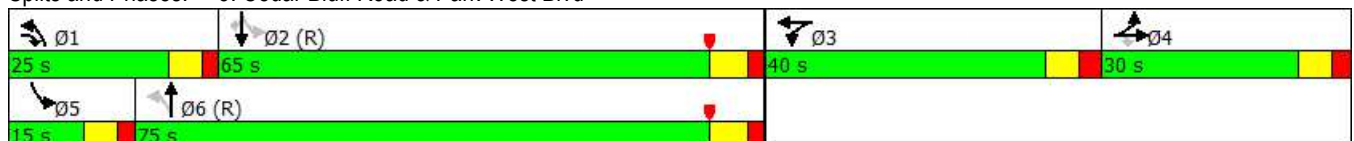
Existing School PM Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	92	7	210	155	142	154	540	19	589	24
Future Volume (vph)	92	7	210	155	142	154	540	19	589	24
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.9	22.9	40.9	25.2	25.2	100.4	92.8	92.3	81.9	81.9
Actuated g/C Ratio	0.14	0.14	0.26	0.16	0.16	0.63	0.58	0.58	0.51	0.51
v/c Ratio	0.50	0.67	0.38	0.65	0.72	0.49	0.28	0.07	0.47	0.04
Control Delay	69.9	79.4	50.8	75.0	65.1	19.3	13.6	13.5	24.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	79.4	50.8	75.0	65.1	19.3	13.6	13.5	24.4	0.1
LOS	E	E	D	E	E	B	B	B	C	A
Approach Delay		66.5			68.0		14.7		23.0	
Approach LOS		E			E		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 35.1
 Intersection Capacity Utilization 51.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service A

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

Existing School PM Peak
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	124	146	146	166	400	188	817	28	866	40
v/c Ratio	0.50	0.67	0.38	0.65	0.72	0.49	0.28	0.07	0.47	0.04
Control Delay	69.9	79.4	50.8	75.0	65.1	19.3	13.6	13.5	24.4	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.9	79.4	50.8	75.0	65.1	19.3	13.6	13.5	24.4	0.1
Queue Length 50th (ft)	122	154	134	182	202	85	158	10	240	0
Queue Length 95th (ft)	148	138	149	241	136	160	175	21	217	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	292	260	448	364	782	441	2898	441	1847	899
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.56	0.33	0.46	0.51	0.43	0.28	0.06	0.47	0.04
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

3: Cedar Bluff Road & Park West Blvd

Existing School PM Peak
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	7	210	155	142	116	154	540	80	19	589	24
Future Volume (vph)	92	7	210	155	142	116	154	540	80	19	589	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.86	0.85	1.00	0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1534	1512	1618	3350		1770	4977		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.23	1.00		0.33	1.00	1.00
Satd. Flow (perm)	1719	1534	1512	1618	3350		421	4977		599	3610	1615
Peak-hour factor, PHF	0.74	0.58	0.75	0.84	0.55	0.94	0.82	0.77	0.69	0.68	0.68	0.60
Adj. Flow (vph)	124	12	280	185	258	123	188	701	116	28	866	40
RTOR Reduction (vph)	0	0	0	0	31	0	0	11	0	0	0	20
Lane Group Flow (vph)	124	146	146	166	369	0	188	806	0	28	866	20
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	19.9	19.9	32.4	22.7	22.7		97.9	87.9		83.4	79.4	79.4
Effective Green, g (s)	22.9	22.9	36.4	25.2	25.2		99.9	90.4		89.4	81.9	81.9
Actuated g/C Ratio	0.14	0.14	0.23	0.16	0.16		0.62	0.57		0.56	0.51	0.51
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	246	219	343	254	527		385	2812		384	1847	826
v/s Ratio Prot	0.07	c0.10	0.04	0.10	c0.11		c0.04	0.16		0.00	0.24	
v/s Ratio Perm			0.06				c0.26			0.04		0.01
v/c Ratio	0.50	0.67	0.43	0.65	0.70		0.49	0.29		0.07	0.47	0.02
Uniform Delay, d1	63.3	64.9	52.9	63.3	63.8		15.8	18.1		15.8	25.1	19.3
Progression Factor	1.01	1.01	1.02	1.00	1.00		1.07	0.72		0.92	0.86	1.00
Incremental Delay, d2	1.2	6.7	0.6	5.3	3.7		0.7	0.2		0.1	0.8	0.1
Delay (s)	65.0	72.2	54.3	68.6	67.6		17.6	13.3		14.6	22.3	19.4
Level of Service	E	E	D	E	E		B	B		B	C	B
Approach Delay (s)		63.8			67.9			14.1			21.9	
Approach LOS		E			E			B			C	

Intersection Summary		
HCM 2000 Control Delay	34.1	HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio	0.56	
Actuated Cycle Length (s)	160.0	Sum of lost time (s) 15.5
Intersection Capacity Utilization	51.3%	ICU Level of Service A
Analysis Period (min)	15	

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

Existing School PM Peak
Parkwest Medical Center

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	72	72	69	0	76	582	15	909
Future Volume (vph)	72	72	69	0	76	582	15	909
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		1		4	1	6		2
Permitted Phases	4	4	4		6		2	
Detector Phase	4	1	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag		Lead			Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	20.9	33.2		20.9	132.6	132.1	120.3	120.3
Actuated g/C Ratio	0.13	0.21		0.13	0.83	0.83	0.75	0.75
v/c Ratio	0.65	0.24		0.29	0.23	0.27	0.05	0.42
Control Delay	83.2	12.8		34.0	3.8	2.5	6.7	8.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	12.8		34.0	3.8	2.5	6.7	8.2
LOS	F	B		C	A	A	A	A
Approach Delay				34.0		2.7		8.2
Approach LOS				C		A		A

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 10.9
 Intersection Capacity Utilization 54.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

Existing School PM Peak
Parkwest Medical Center























Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	107	100	108	100	793	24	1133
v/c Ratio	0.65	0.24	0.29	0.23	0.27	0.05	0.42
Control Delay	83.2	12.8	34.0	3.8	2.5	6.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	12.8	34.0	3.8	2.5	6.7	8.2
Queue Length 50th (ft)	108	10	28	15	62	6	200
Queue Length 95th (ft)	122	32	57	19	67	12	260
Internal Link Dist (ft)			642		919		1139
Turn Bay Length (ft)	90			75		85	
Base Capacity (vph)	272	542	580	555	2920	490	2729
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.18	0.19	0.18	0.27	0.05	0.42

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

Existing School PM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	0	72	69	0	2	76	582	37	15	909	10
Future Volume (vph)	72	0	72	69	0	2	76	582	37	15	909	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5		3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00		1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00		0.85		0.99		1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849		1655		3216		1906	3537		1761	3627	
Flt Permitted	0.65		1.00		0.75		0.21	1.00		0.35	1.00	
Satd. Flow (perm)	1265		1655		2507		425	3537		652	3627	
Peak-hour factor, PHF	0.67	0.92	0.72	0.69	0.92	0.25	0.76	0.79	0.66	0.62	0.82	0.42
Adj. Flow (vph)	107	0	100	100	0	8	100	737	56	24	1109	24
RTOR Reduction (vph)	0	0	72	0	44	0	0	2	0	0	0	0
Lane Group Flow (vph)	107	0	28	0	64	0	100	791	0	24	1133	0
Turn Type	Perm		pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	18.4		25.2		18.4		130.1	130.1		118.3	118.3	
Effective Green, g (s)	20.9		29.2		20.9		132.1	132.1		120.3	120.3	
Actuated g/C Ratio	0.13		0.18		0.13		0.83	0.83		0.75	0.75	
Clearance Time (s)	6.0		5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0		2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	165		302		327		432	2920		490	2727	
v/s Ratio Prot			0.01				0.01	c0.22				c0.31
v/s Ratio Perm	c0.08		0.01		0.03		0.18			0.04		
v/c Ratio	0.65		0.09		0.19		0.23	0.27		0.05	0.42	
Uniform Delay, d1	66.1		54.4		62.0		4.0	3.1		5.1	7.2	
Progression Factor	1.00		1.00		1.00		0.87	0.67		1.00	1.00	
Incremental Delay, d2	8.5		0.1		0.3		0.2	0.2		0.2	0.5	
Delay (s)	74.5		54.5		62.3		3.7	2.3		5.3	7.6	
Level of Service	E		D		E		A	A		A	A	
Approach Delay (s)		64.9			62.3			2.5			7.6	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			13.2				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			54.6%				ICU Level of Service			A		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

Existing School PM Peak
Parkwest Medical Center

	↙	↖	↑	↘	↓	∅4
Lane Group	WBL	WBR	NBT	SBL	SBT	∅4
Lane Configurations	↙	↖	↑↑	↘	↑↑	
Traffic Volume (vph)	72	20	634	94	535	
Future Volume (vph)	72	20	634	94	535	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	9.5	10.5	9.5	10.5	10.0
Total Split (s)	30.0	20.0	65.0	20.0	85.0	30.0
Total Split (%)	26.1%	17.4%	56.5%	17.4%	73.9%	26%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	15.8	30.1	72.9	87.7	86.7	
Actuated g/C Ratio	0.14	0.26	0.63	0.76	0.75	
v/c Ratio	0.67	0.09	0.45	0.37	0.24	
Control Delay	63.1	8.8	7.0	6.6	4.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	63.1	8.8	7.0	6.6	4.9	
LOS	E	A	A	A	A	
Approach Delay			7.0		5.3	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 44.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

Existing School PM Peak
Parkwest Medical Center


























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	129	40	981	157	645
v/c Ratio	0.67	0.09	0.45	0.37	0.24
Control Delay	63.1	8.8	7.0	6.6	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	8.8	7.0	6.6	4.9
Queue Length 50th (ft)	92	0	92	26	64
Queue Length 95th (ft)	87	4	100	35	96
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	294	526	2192	497	2656
Starvation Cap Reductn	0	0	67	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.46	0.32	0.24

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

Existing School PM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (vph)	0	0	0	72	0	20	0	634	141	94	535	0
Future Volume (vph)	0	0	0	72	0	20	0	634	141	94	535	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3437		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.23	1.00	
Satd. Flow (perm)				1410		1583		3437		431	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.56	0.92	0.50	0.92	0.80	0.75	0.60	0.83	0.92
Adj. Flow (vph)	0	0	0	129	0	40	0	792	188	157	645	0
RTOR Reduction (vph)	0	0	0	0	0	32	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	129	0	8	0	967	0	157	645	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				15.8		24.1		72.9		86.7	86.7	
Effective Green, g (s)				15.8		24.1		72.9		86.7	86.7	
Actuated g/C Ratio				0.14		0.21		0.63		0.75	0.75	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				193		331		2178		420	2655	
v/s Ratio Prot						0.00		c0.28		c0.03	0.18	
v/s Ratio Perm				c0.09		0.00				0.25		
v/c Ratio				0.67		0.03		0.44		0.37	0.24	
Uniform Delay, d ₁				47.1		36.1		10.7		5.4	4.3	
Progression Factor				1.00		1.00		0.56		1.00	1.00	
Incremental Delay, d ₂				8.5		0.0		0.6		0.6	0.2	
Delay (s)				55.6		36.1		6.7		5.9	4.5	
Level of Service				E		D		A		A	A	
Approach Delay (s)		0.0			51.0			6.7			4.8	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.7									
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			115.0						18.0			
Intersection Capacity Utilization			44.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Existing School PM Peak
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	76	59	75	19	125	170	542	15	490
Future Volume (vph)	76	59	75	19	125	170	542	15	490
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.6	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	35.8	27.4	45.1	23.9	16.5	67.0	59.1	55.7	48.9
Actuated g/C Ratio	0.31	0.24	0.39	0.21	0.14	0.58	0.51	0.48	0.43
v/c Ratio	0.41	0.17	0.15	0.13	0.70	0.48	0.41	0.06	0.47
Control Delay	31.5	35.8	4.2	26.5	58.7	16.9	20.6	11.8	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	35.8	4.2	26.5	58.7	16.9	20.6	11.8	27.1
LOS	C	D	A	C	E	B	C	B	C
Approach Delay		23.8			53.1		19.8		26.6
Approach LOS		C			D		B		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 26.0
 Intersection Capacity Utilization 59.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd

























Queues
6: Cedar Bluff Road & Dutchtown Rd

Existing School PM Peak
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	136	77	100	40	188	200	749	24	692
v/c Ratio	0.41	0.17	0.15	0.13	0.70	0.48	0.41	0.06	0.47
Control Delay	31.5	35.8	4.2	26.5	58.7	16.9	20.6	11.8	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	35.8	4.2	26.5	58.7	16.9	20.6	11.8	27.1
Queue Length 50th (ft)	75	48	0	21	129	65	187	5	203
Queue Length 95th (ft)	65	71	18	21	166	121	231	15	281
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	349	448	736	328	317	464	1855	382	1514
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.17	0.14	0.12	0.59	0.43	0.40	0.06	0.46
Intersection Summary									

























HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

Existing School PM Peak
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	59	75	19	125	16	170	542	25	15	490	102
Future Volume (vph)	76	59	75	19	125	16	170	542	25	15	490	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1821		1770	3514		1761	3438	
Flt Permitted	0.35	1.00	1.00	0.71	1.00		0.26	1.00		0.35	1.00	
Satd. Flow (perm)	657	1863	1583	1317	1821		491	3514		641	3438	
Peak-hour factor, PHF	0.56	0.77	0.75	0.47	0.78	0.57	0.85	0.76	0.69	0.62	0.84	0.94
Adj. Flow (vph)	136	77	100	40	160	28	200	713	36	24	583	109
RTOR Reduction (vph)	0	0	66	0	6	0	0	3	0	0	13	0
Lane Group Flow (vph)	136	77	34	40	182	0	200	746	0	24	679	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	38.3	27.4	39.1	23.9	19.0		64.2	54.3		50.4	46.5	
Effective Green, g (s)	38.3	27.4	39.1	23.9	19.0		64.2	54.3		50.4	46.5	
Actuated g/C Ratio	0.33	0.24	0.34	0.21	0.17		0.56	0.47		0.44	0.40	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	347	443	620	293	300		404	1659		318	1390	
v/s Ratio Prot	c0.05	0.04	0.01	0.01	c0.10		c0.05	0.21		0.00	0.20	
v/s Ratio Perm	0.09		0.02	0.02			c0.23			0.03		
v/c Ratio	0.39	0.17	0.05	0.14	0.61		0.50	0.45		0.08	0.49	
Uniform Delay, d1	28.3	34.8	25.5	36.9	44.5		14.4	20.3		18.4	25.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.84	1.03	
Incremental Delay, d2	0.7	0.2	0.0	0.2	3.5		1.0	0.9		0.1	1.2	
Delay (s)	29.1	35.0	25.6	37.1	48.0		15.3	21.2		15.6	27.4	
Level of Service	C	C	C	D	D		B	C		B	C	
Approach Delay (s)		29.4			46.1			20.0			27.0	
Approach LOS		C			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			26.3			HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			115.0			Sum of lost time (s)		24.5				
Intersection Capacity Utilization			59.2%			ICU Level of Service		B				
Analysis Period (min)			15									
c Critical Lane Group												












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

Existing School PM Peak
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	22	162	8	17	116	57	5	30	18	62	70	10	
Future Volume (Veh/h)	22	162	8	17	116	57	5	30	18	62	70	10	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.79	0.94	1.00	0.71	0.76	0.84	0.42	0.68	0.56	0.74	0.70	0.62	
Hourly flow rate (vph)	28	172	8	24	153	68	12	44	32	84	100	16	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	221			180			422	501	90	431	471	110	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	221			180			422	501	90	431	471	110	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	98			98			97	90	97	81	79	98	
cM capacity (veh/h)	1345			1393			412	453	950	442	471	922	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	28	115	65	100	144	56	32	84	116				
Volume Left	28	0	0	24	0	12	0	84	0				
Volume Right	0	0	8	0	68	0	32	0	16				
cSH	1345	1700	1700	1393	1700	443	950	442	505				
Volume to Capacity	0.02	0.07	0.04	0.02	0.09	0.13	0.03	0.19	0.23				
Queue Length 95th (ft)	2	0	0	1	0	11	3	17	22				
Control Delay (s)	7.7	0.0	0.0	1.9	0.0	14.3	8.9	15.1	14.2				
Lane LOS	A			A		B	A	C	B				
Approach Delay (s)	1.0			0.8		12.3		14.6					
Approach LOS						B		B					
Intersection Summary													
Average Delay	6.0												
Intersection Capacity Utilization	30.4%			ICU Level of Service					A				
Analysis Period (min)	15												

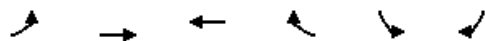
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

Existing School PM Peak
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	81	41	125	103	45	81	
Future Volume (Veh/h)	81	41	125	103	45	81	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.84	0.85	0.92	0.78	0.86	0.75	
Hourly flow rate (vph)	96	48	136	132	52	108	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	360	134			268		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	360	134			268		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	84	95			96		
cM capacity (veh/h)	588	890			1293		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	96	48	91	177	52	54	54
Volume Left	96	0	0	0	52	0	0
Volume Right	0	48	0	132	0	0	0
cSH	588	890	1700	1700	1293	1700	1700
Volume to Capacity	0.16	0.05	0.05	0.10	0.04	0.03	0.03
Queue Length 95th (ft)	15	4	0	0	3	0	0
Control Delay (s)	12.3	9.3	0.0	0.0	7.9	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.3		0.0		2.6		
Approach LOS	B						
Intersection Summary							
Average Delay			3.6				
Intersection Capacity Utilization			24.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

Existing School PM Peak
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	3	365	250	0	77	2
Future Volume (Veh/h)	3	365	250	0	77	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.25	0.76	0.77	0.92	0.45	0.25
Hourly flow rate (vph)	12	480	325	0	171	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	325				589	162
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	325				589	162
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				61	99
cM capacity (veh/h)	1231				435	854
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	172	320	217	108	171	8
Volume Left	12	0	0	0	171	0
Volume Right	0	0	0	0	0	8
cSH	1231	1700	1700	1700	435	854
Volume to Capacity	0.01	0.19	0.13	0.06	0.39	0.01
Queue Length 95th (ft)	1	0	0	0	46	1
Control Delay (s)	0.6	0.0	0.0	0.0	18.5	9.3
Lane LOS	A				C	A
Approach Delay (s)	0.2		0.0		18.1	
Approach LOS					C	
Intersection Summary						
Average Delay			3.4			
Intersection Capacity Utilization			23.1%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

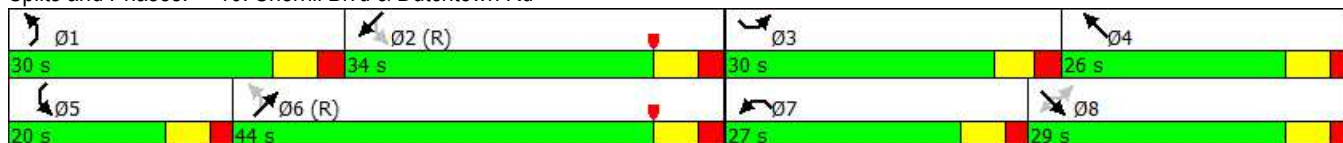
Existing School PM Peak
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	141	192	79	228	119	101	145	35	176
Future Volume (vph)	141	192	79	228	119	101	145	35	176
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.5	14.5	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes				Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	38.6	23.0	23.0	21.0	28.4	55.0	45.9	48.9	40.5
Actuated g/C Ratio	0.32	0.19	0.19	0.18	0.24	0.46	0.38	0.41	0.34
v/c Ratio	0.48	1.20	0.15	0.95	0.38	0.29	0.30	0.15	0.32
Control Delay	27.8	154.6	0.5	75.6	41.7	19.5	23.0	18.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	154.6	0.5	75.6	41.7	19.5	23.0	18.0	19.1
LOS	C	F	A	E	D	B	C	B	B
Approach Delay		96.1			68.0		22.2		19.0
Approach LOS		F			E		C		B

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.20
 Intersection Signal Delay: 57.7
 Intersection Capacity Utilization 51.4%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service A

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

Existing School PM Peak
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	220	427	104	570	165	131	401	67	383
v/c Ratio	0.48	1.20	0.15	0.95	0.38	0.29	0.30	0.15	0.32
Control Delay	27.8	154.6	0.5	75.6	41.7	19.5	23.0	18.0	19.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.8	154.6	0.5	75.6	41.7	19.5	23.0	18.0	19.1
Queue Length 50th (ft)	112	~400	0	227	105	55	96	27	68
Queue Length 95th (ft)	116	205	0	114	159	79	69	30	94
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	587	357	695	600	437	575	1330	534	1213
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	1.20	0.15	0.95	0.38	0.23	0.30	0.13	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

Existing School PM Peak
 Parkwest Medical Center









Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	141	192	79	228	119	8	101	145	79	35	176	65
Future Volume (vph)	141	192	79	228	119	8	101	145	79	35	176	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1836		1770	3371		1770	3313	
Flt Permitted	0.65	1.00	1.00	0.95	1.00		0.43	1.00		0.52	1.00	
Satd. Flow (perm)	1216	1863	2787	3433	1836		809	3371		961	3313	
Peak-hour factor, PHF	0.64	0.45	0.76	0.40	0.80	0.50	0.77	0.53	0.62	0.52	0.80	0.40
Adj. Flow (vph)	220	427	104	570	149	16	131	274	127	67	220	162
RTOR Reduction (vph)	0	0	84	0	3	0	0	41	0	0	95	0
Lane Group Flow (vph)	220	427	20	570	162	0	131	360	0	67	288	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	38.6	23.0	23.0	21.0	28.4		55.2	44.7		47.3	40.5	
Effective Green, g (s)	38.6	23.0	23.0	21.0	28.4		55.2	44.7		47.3	40.5	
Actuated g/C Ratio	0.32	0.19	0.19	0.18	0.24		0.46	0.37		0.39	0.34	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	463	357	534	600	434		456	1255		424	1118	
v/s Ratio Prot	0.06	c0.23		c0.17	c0.09		c0.03	c0.11		0.01	0.09	
v/s Ratio Perm	0.09		0.01				c0.11			0.05		
v/c Ratio	0.48	1.20	0.04	0.95	0.37		0.29	0.29		0.16	0.26	
Uniform Delay, d1	31.5	48.5	39.5	49.0	38.3		19.2	26.4		22.9	28.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	112.4	0.0	24.6	0.5		0.3	0.6		0.2	0.6	
Delay (s)	32.3	160.9	39.5	73.6	38.9		19.5	27.0		23.1	29.4	
Level of Service	C	F	D	E	D		B	C		C	C	
Approach Delay (s)		106.4			65.8			25.2			28.5	
Approach LOS		F			E			C			C	

Intersection Summary

HCM 2000 Control Delay	62.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

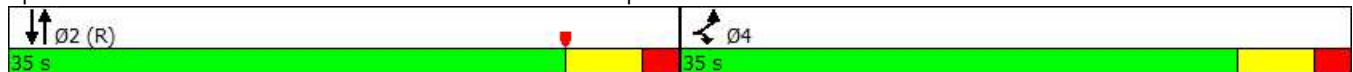
Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	701	250	1029	1232
Future Volume (vph)	701	250	1029	1232
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	23.4	23.4	38.6	38.6
Actuated g/C Ratio	0.33	0.33	0.55	0.55
v/c Ratio	0.68	0.49	0.32	0.48
Control Delay	22.5	19.7	9.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.5	19.7	9.5	9.5
LOS	C	B	A	A
Approach Delay	21.8		9.5	9.5
Approach LOS	C		A	A

Intersection Summary

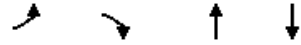
Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 64 (91%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.2
 Intersection Capacity Utilization 53.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	789	245	1118	1339
v/c Ratio	0.68	0.49	0.32	0.48
Control Delay	22.5	19.7	9.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.5	19.7	9.5	9.5
Queue Length 50th (ft)	147	83	69	109
Queue Length 95th (ft)	174	131	109	142
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1538	654	3529	2815
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.37	0.32	0.48

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Background AM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	701	250	0	1029	1232	0
Future Volume (vph)	701	250	0	1029	1232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Flt	0.99	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3464	1455		6408	5111	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3464	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	762	272	0	1118	1339	0
RTOR Reduction (vph)	5	12	0	0	0	0
Lane Group Flow (vph)	784	233	0	1118	1339	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	21.4	21.4		36.6	36.6	
Effective Green, g (s)	23.4	23.4		38.6	38.6	
Actuated g/C Ratio	0.33	0.33		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1157	486		3533	2818	
v/s Ratio Prot	c0.23	0.16		0.17	c0.26	
v/s Ratio Perm						
v/c Ratio	0.68	0.48		0.32	0.48	
Uniform Delay, d1	20.1	18.5		8.5	9.5	
Progression Factor	1.00	1.00		1.00	0.88	
Incremental Delay, d2	1.3	0.3		0.2	0.5	
Delay (s)	21.3	18.7		8.8	8.9	
Level of Service	C	B		A	A	
Approach Delay (s)	20.7			8.8	8.9	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			53.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

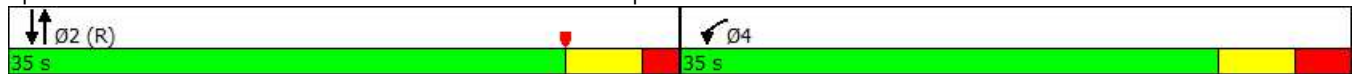
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↘↘↘
Traffic Volume (vph)	793	1464	546
Future Volume (vph)	793	1464	546
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	25.1	36.9	36.9
Actuated g/C Ratio	0.36	0.53	0.53
v/c Ratio	0.68	0.45	0.22
Control Delay	21.5	12.9	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	21.5	12.9	5.4
LOS	C	B	A
Approach Delay	21.5	12.9	5.4
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 27 (39%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.9
 Intersection Capacity Utilization 53.1%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	862	1591	593
v/c Ratio	0.68	0.45	0.22
Control Delay	21.5	12.9	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	21.5	12.9	5.4
Queue Length 50th (ft)	157	120	37
Queue Length 95th (ft)	187	169	47
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1563	3504	2650
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.45	0.22
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Background AM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	793	0	1464	0	0	546
Future Volume (vph)	793	0	1464	0	0	546
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	0	1591	0	0	593
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	862	0	1591	0	0	593
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	22.1		34.9			34.9
Effective Green, g (s)	25.1		36.9			36.9
Actuated g/C Ratio	0.36		0.53			0.53
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1265		3508			2653
v/s Ratio Prot	c0.24		c0.24			0.12
v/s Ratio Perm						
v/c Ratio	0.68		0.45			0.22
Uniform Delay, d1	19.1		10.3			8.9
Progression Factor	1.00		1.13			0.55
Incremental Delay, d2	1.2		0.4			0.2
Delay (s)	20.3		12.0			5.0
Level of Service	C		B			A
Approach Delay (s)	20.3		12.0			5.0
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

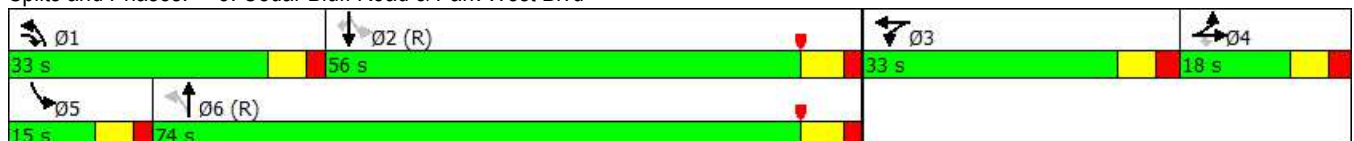
Timings
3: Cedar Bluff Road & Park West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	41	64	195	143	329	293	655	36	575	63
Future Volume (vph)	41	64	195	143	329	293	655	36	575	63
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	18.0	18.0	33.0	33.0	33.0	33.0	74.0	15.0	56.0	56.0
Total Split (%)	12.9%	12.9%	23.6%	23.6%	23.6%	23.6%	52.9%	10.7%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.2	15.2	37.7	27.2	27.2	86.1	76.0	73.5	63.0	63.0
Actuated g/C Ratio	0.11	0.11	0.27	0.19	0.19	0.62	0.54	0.52	0.45	0.45
v/c Ratio	0.24	0.82	0.33	0.44	0.82	0.62	0.34	0.11	0.38	0.08
Control Delay	61.4	94.6	42.9	54.1	59.5	22.2	13.0	8.9	21.8	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	61.4	94.6	42.9	54.1	59.5	22.7	13.0	8.9	21.8	1.0
LOS	E	F	D	D	E	C	B	A	C	A
Approach Delay		68.6			58.4		15.5		19.2	
Approach LOS		E			E		B		B	











Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 32.4
 Intersection Capacity Utilization 65.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	45	146	136	139	571	318	907	39	625	68
v/c Ratio	0.24	0.82	0.33	0.44	0.82	0.62	0.34	0.11	0.38	0.08
Control Delay	61.4	94.6	42.9	54.1	59.5	22.2	13.0	8.9	21.8	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Total Delay	61.4	94.6	42.9	54.1	59.5	22.7	13.0	8.9	21.8	1.0
Queue Length 50th (ft)	38	141	106	121	247	148	155	8	214	0
Queue Length 95th (ft)	m80	#275	162	196	320	278	179	m15	267	11
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	186	177	514	335	734	600	2704	403	1625	821
Starvation Cap Reductn	0	0	0	0	0	73	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.82	0.26	0.41	0.78	0.60	0.34	0.10	0.38	0.08

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	64	195	143	329	181	293	655	179	36	575	63
Future Volume (vph)	41	64	195	143	329	181	293	655	179	36	575	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1640	1512	1618	3334		1770	4921		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.31	1.00		0.30	1.00	1.00
Satd. Flow (perm)	1719	1640	1512	1618	3334		573	4921		555	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	70	212	155	358	197	318	712	195	39	625	68
RTOR Reduction (vph)	0	0	0	0	44	0	0	33	0	0	0	37
Lane Group Flow (vph)	45	146	136	139	527	0	318	874	0	39	625	31
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	12.2	12.2	29.2	24.7	24.7		83.6	72.3		65.9	60.6	60.6
Effective Green, g (s)	15.2	15.2	33.2	27.2	27.2		85.6	74.8		71.9	63.1	63.1
Actuated g/C Ratio	0.11	0.11	0.24	0.19	0.19		0.61	0.53		0.51	0.45	0.45
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	186	178	358	314	647		512	2629		355	1627	727
v/s Ratio Prot	0.03	c0.09	0.05	0.09	c0.16		c0.08	0.18		0.01	0.17	
v/s Ratio Perm			0.04				c0.29			0.05		0.02
v/c Ratio	0.24	0.82	0.38	0.44	0.81		0.62	0.33		0.11	0.38	0.04
Uniform Delay, d1	57.1	61.1	44.8	49.7	54.0		14.7	18.5		16.9	25.5	21.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.32	0.74		0.71	0.79	1.00
Incremental Delay, d2	0.5	24.6	0.5	0.7	7.6		1.8	0.3		0.1	0.6	0.1
Delay (s)	57.8	85.8	45.3	50.4	61.6		21.2	14.0		12.1	20.9	21.6
Level of Service	E	F	D	D	E		C	B		B	C	C
Approach Delay (s)		65.1			59.4			15.9			20.5	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

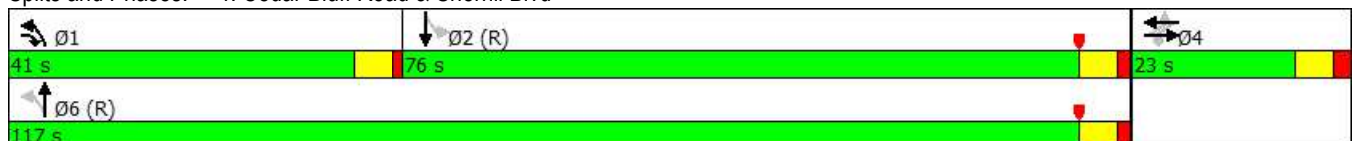
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	48	21	172	17	1	350	660	44	974
Future Volume (vph)	48	21	172	17	1	350	660	44	974
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	23.0	23.0	41.0	23.0	23.0	41.0	117.0	76.0	76.0
Total Split (%)	16.4%	16.4%	29.3%	16.4%	16.4%	29.3%	83.6%	54.3%	54.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.3	13.3	36.6		13.3	123.0	123.2	96.9	96.9
Actuated g/C Ratio	0.10	0.10	0.26		0.10	0.88	0.88	0.69	0.69
v/c Ratio	0.38	0.12	0.39		0.12	0.69	0.30	0.12	0.50
Control Delay	66.8	58.1	25.0		41.2	17.9	2.1	12.1	13.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	58.1	25.0		41.2	17.9	2.1	12.1	13.1
LOS	E	E	C		D	B	A	B	B
Approach Delay		36.2			41.2		6.7		13.1
Approach LOS		D			D		A		B

Intersection Summary

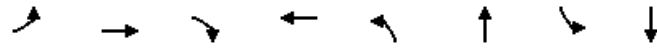
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 13 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.6
 Intersection Capacity Utilization 70.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd
























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	23	187	30	380	928	48	1237
v/c Ratio	0.38	0.12	0.39	0.12	0.69	0.30	0.12	0.50
Control Delay	66.8	58.1	25.0	41.2	17.9	2.1	12.1	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	58.1	25.0	41.2	17.9	2.1	12.1	13.1
Queue Length 50th (ft)	45	20	83	8	133	93	14	266
Queue Length 95th (ft)	88	48	128	24	m236	127	44	448
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	199	271	659	372	724	3050	395	2469
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.08	0.28	0.08	0.52	0.30	0.12	0.50

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	21	172	17	1	10	350	660	194	44	974	164
Future Volume (vph)	48	21	172	17	1	10	350	660	194	44	974	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.94		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3122		1906	3453		1761	3560	
Flt Permitted	0.74	1.00	1.00		0.81		0.17	1.00		0.31	1.00	
Satd. Flow (perm)	1434	1947	1655		2608		341	3453		571	3560	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	23	187	18	1	11	380	717	211	48	1059	178
RTOR Reduction (vph)	0	0	54	0	10	0	0	14	0	0	6	0
Lane Group Flow (vph)	52	23	133	0	20	0	380	914	0	48	1231	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	9.2	9.2	29.8		9.2		119.3	119.3		93.7	93.7	
Effective Green, g (s)	11.7	11.7	33.8		11.7		121.3	121.3		95.7	95.7	
Actuated g/C Ratio	0.08	0.08	0.24		0.08		0.87	0.87		0.68	0.68	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	119	162	399		217		548	2991		390	2433	
v/s Ratio Prot		0.01	0.05				c0.11	0.26			0.35	
v/s Ratio Perm	c0.04		0.03		0.01		c0.49			0.08		
v/c Ratio	0.44	0.14	0.33		0.09		0.69	0.31		0.12	0.51	
Uniform Delay, d1	61.0	59.5	43.8		59.2		14.7	1.7		7.7	10.7	
Progression Factor	1.00	1.00	1.00		1.00		1.21	1.11		1.00	1.00	
Incremental Delay, d2	2.6	0.4	0.4		0.2		3.4	0.3		0.6	0.8	
Delay (s)	63.6	59.9	44.2		59.4		21.1	2.1		8.3	11.5	
Level of Service	E	E	D		E		C	A		A	B	
Approach Delay (s)		49.4			59.4			7.7			11.3	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.6				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			70.9%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↗	↑	↘	↓	Ø4
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↗	↑↓	↘	↗	
Traffic Volume (vph)	165	122	2	798	395	607	
Future Volume (vph)	165	122	2	798	395	607	
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	
Protected Phases		1		2	1	6	4
Permitted Phases	8	8	2		6		
Detector Phase	8	1	2	2	1	6	
Switch Phase							
Minimum Initial (s)	8.0	6.0	20.0	20.0	6.0	20.0	8.0
Minimum Split (s)	22.0	11.5	26.5	26.5	11.5	26.5	22.0
Total Split (s)	30.0	22.0	48.0	48.0	22.0	70.0	30.0
Total Split (%)	30.0%	22.0%	48.0%	48.0%	22.0%	70.0%	30%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.5	6.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes	Yes		
Recall Mode	None	None	C-Min	C-Min	None	C-Min	None
Act Effect Green (s)	17.7	48.2	39.8	39.8	70.8	69.8	
Actuated g/C Ratio	0.18	0.48	0.40	0.40	0.71	0.70	
v/c Ratio	0.72	0.17	0.01	0.90	0.85	0.27	
Control Delay	54.4	8.6	11.5	31.7	44.2	6.5	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	
Total Delay	54.4	8.6	11.5	32.0	44.2	6.5	
LOS	D	A	B	C	D	A	
Approach Delay				31.9		21.3	
Approach LOS				C		C	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 26 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 27.9
 Intersection Capacity Utilization 77.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd



Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	133	2	1254	429	662
v/c Ratio	0.72	0.17	0.01	0.90	0.85	0.27
Control Delay	54.4	8.6	11.5	31.7	44.2	6.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	54.4	8.6	11.5	32.0	44.2	6.5
Queue Length 50th (ft)	108	23	1	366	210	72
Queue Length 95th (ft)	170	57	m1	472	#466	120
Internal Link Dist (ft)				493		1729
Turn Bay Length (ft)	200		100		100	
Base Capacity (vph)	338	796	309	1451	506	2459
Starvation Cap Reductn	0	0	0	20	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.17	0.01	0.88	0.85	0.27

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	165	0	122	2	798	356	395	607	2
Future Volume (vph)	0	0	0	165	0	122	2	798	356	395	607	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5	6.5	6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00	1.00	0.95		1.00	0.95	
Fr _t				1.00		0.85	1.00	0.95		1.00	1.00	
Fl _t Protected				0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583	1770	3375		1761	3520	
Fl _t Permitted				0.76		1.00	0.40	1.00		0.09	1.00	
Satd. Flow (perm)				1410		1583	745	3375		164	3520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	179	0	133	2	867	387	429	660	2
RTOR Reduction (vph)	0	0	0	0	0	39	0	52	0	0	0	0
Lane Group Flow (vph)	0	0	0	179	0	94	2	1202	0	429	662	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				17.7		42.2	39.8	39.8		69.8	69.8	
Effective Green, g (s)				17.7		42.2	39.8	39.8		69.8	69.8	
Actuated g/C Ratio				0.18		0.42	0.40	0.40		0.70	0.70	
Clearance Time (s)				6.0		5.5	6.5	6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				249		668	296	1343		505	2456	
v/s Ratio Prot						0.03		0.36		c0.21	0.19	
v/s Ratio Perm				c0.13		0.02	0.00			c0.39		
v/c Ratio				0.72		0.14	0.01	0.89		0.85	0.27	
Uniform Delay, d ₁				38.8		17.8	18.2	28.1		27.8	5.6	
Progression Factor				1.00		1.00	0.67	0.85		1.00	1.00	
Incremental Delay, d ₂				9.5		0.1	0.0	9.3		12.6	0.3	
Delay (s)				48.3		17.9	12.3	33.2		40.4	5.9	
Level of Service				D		B	B	C		D	A	
Approach Delay (s)		0.0			35.3			33.2			19.4	
Approach LOS		A			D			C			B	
Intersection Summary												
HCM 2000 Control Delay			27.8									C
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			100.0						18.0			
Intersection Capacity Utilization			77.8%									D
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	114	68	66	50	176	291	652	31	592
Future Volume (vph)	114	68	66	50	176	291	652	31	592
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	32.5	12.0	29.5
Total Split (s)	13.0	22.0	20.0	13.0	22.0	20.0	52.0	13.0	45.0
Total Split (%)	13.0%	22.0%	20.0%	13.0%	22.0%	20.0%	52.0%	13.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	27.5	19.5	39.2	22.1	14.8	57.6	49.5	44.4	37.4
Actuated g/C Ratio	0.28	0.20	0.39	0.22	0.15	0.58	0.50	0.44	0.37
v/c Ratio	0.44	0.20	0.11	0.17	0.77	0.84	0.41	0.09	0.66
Control Delay	31.3	36.8	2.2	25.9	59.1	36.6	18.4	9.0	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	36.8	2.2	25.9	59.1	36.6	18.5	9.0	24.7
LOS	C	D	A	C	E	D	B	A	C
Approach Delay		25.1			52.4		24.0		24.1
Approach LOS		C			D		C		C










Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 15 (15%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 27.2
 Intersection Capacity Utilization 76.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	74	72	54	213	316	719	34	865
v/c Ratio	0.44	0.20	0.11	0.17	0.77	0.84	0.41	0.09	0.66
Control Delay	31.3	36.8	2.2	25.9	59.1	36.6	18.4	9.0	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	36.8	2.2	25.9	59.1	36.6	18.5	9.0	24.7
Queue Length 50th (ft)	56	39	0	23	126	111	174	7	262
Queue Length 95th (ft)	107	84	15	54	#227	#242	212	m15	310
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	284	362	695	329	300	387	1816	389	1392
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	94	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.20	0.10	0.16	0.71	0.82	0.42	0.09	0.62

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Background AM Peak w MOB
Parkwest Medical Center






















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	68	66	50	176	20	291	652	9	31	592	204
Future Volume (vph)	114	68	66	50	176	20	291	652	9	31	592	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1834		1770	3532		1761	3386	
Flt Permitted	0.34	1.00	1.00	0.71	1.00		0.16	1.00		0.38	1.00	
Satd. Flow (perm)	640	1863	1583	1320	1834		305	3532		701	3386	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	74	72	54	191	22	316	709	10	34	643	222
RTOR Reduction (vph)	0	0	48	0	4	0	0	1	0	0	36	0
Lane Group Flow (vph)	124	74	24	54	209	0	316	718	0	34	829	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	29.1	19.5	33.2	22.1	16.0		55.9	45.9		40.2	36.2	
Effective Green, g (s)	29.1	19.5	33.2	22.1	16.0		55.9	45.9		40.2	36.2	
Actuated g/C Ratio	0.29	0.20	0.33	0.22	0.16		0.56	0.46		0.40	0.36	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	363	620	319	293		371	1621		324	1225	
v/s Ratio Prot	c0.04	0.04	0.01	0.01	c0.11		c0.12	0.20		0.00	0.24	
v/s Ratio Perm	c0.08		0.01	0.03			c0.36			0.04		
v/c Ratio	0.42	0.20	0.04	0.17	0.71		0.85	0.44		0.10	0.68	
Uniform Delay, d1	27.5	33.7	22.6	31.3	39.8		17.2	18.4		18.2	27.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.78	0.88	
Incremental Delay, d2	1.0	0.3	0.0	0.3	8.0		16.9	0.9		0.1	2.9	
Delay (s)	28.4	34.0	22.6	31.5	47.8		34.1	19.2		14.4	26.5	
Level of Service	C	C	C	C	D		C	B		B	C	
Approach Delay (s)		28.4			44.5			23.8			26.1	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	51	119	15	41	434	199	4	25	4	92	233	31
Future Volume (Veh/h)	51	119	15	41	434	199	4	25	4	92	233	31
Sign Control		Free			Free			Stop			Stop	
Grade		-9%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	129	16	45	472	216	4	27	4	100	253	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									40			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					1142							
pX, platoon unblocked												
vC, conflicting volume	688			145			734	1025	72	858	925	344
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	688			145			734	1025	72	858	925	344
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			97			0	87	100	52	0	95
cM capacity (veh/h)	902			1435			0	212	975	210	243	652
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2				
Volume Total	55	86	59	281	452	35	100	287				
Volume Left	55	0	0	45	0	4	100	0				
Volume Right	0	0	16	0	216	4	0	34				
cSH	902	1700	1700	1435	1700	209	210	263				
Volume to Capacity	0.06	0.05	0.03	0.03	0.27	0.17	0.48	1.09				
Queue Length 95th (ft)	5	0	0	2	0	15	58	300				
Control Delay (s)	9.3	0.0	0.0	1.4	0.0	26.1	36.8	123.9				
Lane LOS	A			A		D	E	F				
Approach Delay (s)	2.5			0.6		26.1	101.4					
Approach LOS						D	F					
Intersection Summary												
Average Delay			30.3									
Intersection Capacity Utilization			47.5%		ICU Level of Service				A			
Analysis Period (min)			15									

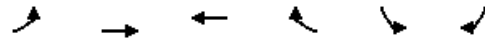
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Background AM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	25	8	188	27	14	329	
Future Volume (Veh/h)	25	8	188	27	14	329	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	27	9	204	29	15	358	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	428	116			233		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	428	116			233		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	95	99			99		
cM capacity (veh/h)	549	914			1332		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	27	9	136	97	15	179	179
Volume Left	27	0	0	0	15	0	0
Volume Right	0	9	0	29	0	0	0
cSH	549	914	1700	1700	1332	1700	1700
Volume to Capacity	0.05	0.01	0.08	0.06	0.01	0.11	0.11
Queue Length 95th (ft)	4	1	0	0	1	0	0
Control Delay (s)	11.9	9.0	0.0	0.0	7.7	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.2		0.0		0.3		
Approach LOS	B						
Intersection Summary							
Average Delay			0.8				
Intersection Capacity Utilization			21.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Background AM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↗	↗
Traffic Volume (veh/h)	2	280	456	18	363	44
Future Volume (Veh/h)	2	280	456	18	363	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	304	496	20	395	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	516				662	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516				662	258
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				0	94
cM capacity (veh/h)	1046				394	741
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	103	203	331	185	395	48
Volume Left	2	0	0	0	395	0
Volume Right	0	0	0	20	0	48
cSH	1046	1700	1700	1700	394	741
Volume to Capacity	0.00	0.12	0.19	0.11	1.00	0.06
Queue Length 95th (ft)	0	0	0	0	306	5
Control Delay (s)	0.2	0.0	0.0	0.0	78.8	10.2
Lane LOS	A				F	B
Approach Delay (s)	0.1		0.0		71.4	
Approach LOS					F	
Intersection Summary						
Average Delay			25.0			
Intersection Capacity Utilization			40.0%		ICU Level of Service	A
Analysis Period (min)			15			

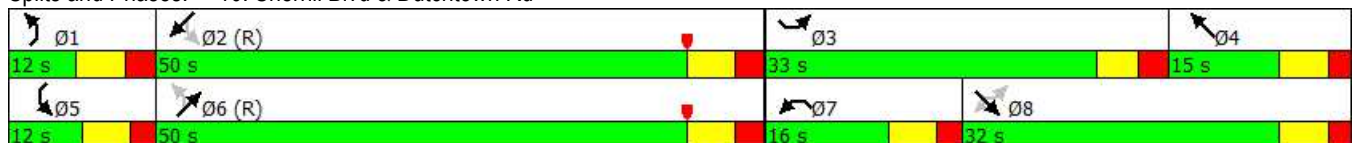
Timings
10: Sherrill Blvd & Dutchtown Rd

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	320	345	286	210	81	109	304	14	357
Future Volume (vph)	320	345	286	210	81	109	304	14	357
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	33.0	32.0	32.0	16.0	15.0	12.0	50.0	12.0	50.0
Total Split (%)	30.0%	29.1%	29.1%	14.5%	13.6%	10.9%	45.5%	10.9%	45.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	40.7	24.8	24.8	9.9	12.9	54.2	52.0	50.9	44.6
Actuated g/C Ratio	0.37	0.23	0.23	0.09	0.12	0.49	0.47	0.46	0.41
v/c Ratio	0.69	0.89	0.36	0.74	0.44	0.31	0.30	0.03	0.39
Control Delay	35.0	65.5	5.1	64.1	51.8	17.1	16.1	13.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	65.5	5.1	64.1	51.8	17.1	16.1	13.8	21.1
LOS	C	E	A	E	D	B	B	B	C
Approach Delay		37.1			60.4		16.3		20.9
Approach LOS		D			E		B		C










Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 85 (77%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 31.4
 Intersection Capacity Utilization 66.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	348	375	311	228	97	118	494	15	556
v/c Ratio	0.69	0.89	0.36	0.74	0.44	0.31	0.30	0.03	0.39
Control Delay	35.0	65.5	5.1	64.1	51.8	17.1	16.1	13.8	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.0	65.5	5.1	64.1	51.8	17.1	16.1	13.8	21.1
Queue Length 50th (ft)	187	254	0	82	61	43	81	5	125
Queue Length 95th (ft)	278	#414	38	#134	#136	75	144	16	173
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	544	440	896	312	218	380	1637	455	1413
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.85	0.35	0.73	0.44	0.31	0.30	0.03	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Background AM Peak w MOB
 Parkwest Medical Center









Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	320	345	286	210	81	8	109	304	151	14	357	155
Future Volume (vph)	320	345	286	210	81	8	109	304	151	14	357	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1837		1770	3363		1770	3379	
Flt Permitted	0.47	1.00	1.00	0.95	1.00		0.35	1.00		0.47	1.00	
Satd. Flow (perm)	883	1863	2787	3433	1837		656	3363		876	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	375	311	228	88	9	118	330	164	15	388	168
RTOR Reduction (vph)	0	0	241	0	4	0	0	52	0	0	43	0
Lane Group Flow (vph)	348	375	70	228	93	0	118	442	0	15	513	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	40.7	24.8	24.8	9.9	12.9		54.1	48.4		47.0	44.6	
Effective Green, g (s)	40.7	24.8	24.8	9.9	12.9		54.1	48.4		47.0	44.6	
Actuated g/C Ratio	0.37	0.23	0.23	0.09	0.12		0.49	0.44		0.43	0.41	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	502	420	628	308	215		380	1479		393	1370	
v/s Ratio Prot	c0.14	c0.20		0.07	0.05		c0.02	0.13		0.00	c0.15	
v/s Ratio Perm	0.12		0.03				c0.14			0.02		
v/c Ratio	0.69	0.89	0.11	0.74	0.43		0.31	0.30		0.04	0.37	
Uniform Delay, d1	27.4	41.3	33.8	48.8	45.2		15.7	19.9		18.2	22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	20.6	0.1	9.2	1.4		0.5	0.5		0.0	0.8	
Delay (s)	31.5	61.9	33.9	58.0	46.6		16.2	20.4		18.2	23.7	
Level of Service	C	E	C	E	D		B	C		B	C	
Approach Delay (s)		43.3			54.6			19.6			23.6	
Approach LOS		D			D			B			C	

Intersection Summary

HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

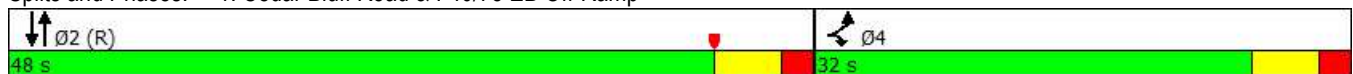
Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	494	458	1257	1139
Future Volume (vph)	494	458	1257	1139
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	23.0	23.0	49.0	49.0
Actuated g/C Ratio	0.29	0.29	0.61	0.61
v/c Ratio	0.70	0.71	0.35	0.40
Control Delay	27.0	29.7	8.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.0	29.7	8.5	9.5
LOS	C	C	A	A
Approach Delay	27.8		8.5	9.5
Approach LOS	C		A	A





Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 14.3
 Intersection Capacity Utilization 47.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	711	324	1366	1238
v/c Ratio	0.70	0.71	0.35	0.40
Control Delay	27.0	29.7	8.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.0	29.7	8.5	9.5
Queue Length 50th (ft)	150	132	87	132
Queue Length 95th (ft)	189	213	128	163
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1220	543	3921	3128
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.60	0.35	0.40
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Background PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	👉👉	👉		👉👉👉	👉👉👉	
Traffic Volume (vph)	494	458	0	1257	1139	0
Future Volume (vph)	494	458	0	1257	1139	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3388	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3388	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	537	498	0	1366	1238	0
RTOR Reduction (vph)	38	38	0	0	0	0
Lane Group Flow (vph)	673	286	0	1366	1238	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	21.0	21.0		47.0	47.0	
Effective Green, g (s)	23.0	23.0		49.0	49.0	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	974	418		3924	3130	
v/s Ratio Prot	c0.20	0.20		0.21	c0.24	
v/s Ratio Perm						
v/c Ratio	0.69	0.68		0.35	0.40	
Uniform Delay, d ₁	25.3	25.3		7.6	7.9	
Progression Factor	1.00	1.00		1.00	1.09	
Incremental Delay, d ₂	1.7	3.7		0.2	0.3	
Delay (s)	27.1	29.0		7.9	9.0	
Level of Service	C	C		A	A	
Approach Delay (s)	27.7			7.9	9.0	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

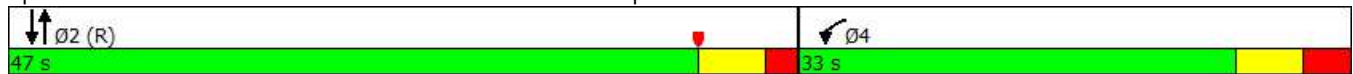
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	775	1261	705
Future Volume (vph)	775	1261	705
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	26.0	46.0	46.0
Actuated g/C Ratio	0.32	0.58	0.58
v/c Ratio	0.73	0.36	0.26
Control Delay	27.8	7.3	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.3	9.0
LOS	C	A	A
Approach Delay	27.8	7.3	9.0
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 13.5
 Intersection Capacity Utilization 47.6%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	842	1371	766
v/c Ratio	0.73	0.36	0.26
Control Delay	27.8	7.3	9.0
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.3	9.0
Queue Length 50th (ft)	185	78	100
Queue Length 95th (ft)	239	90	78
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	3823	2891
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.66	0.36	0.26
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Background PM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	775	0	1261	0	0	705
Future Volume (vph)	775	0	1261	0	0	705
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	842	0	1371	0	0	766
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	842	0	1371	0	0	766
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	23.0		44.0			44.0
Effective Green, g (s)	26.0		46.0			46.0
Actuated g/C Ratio	0.32		0.58			0.58
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1147		3826			2894
v/s Ratio Prot	c0.24		c0.21			0.15
v/s Ratio Perm						
v/c Ratio	0.73		0.36			0.26
Uniform Delay, d1	23.9		9.1			8.5
Progression Factor	1.00		0.73			0.99
Incremental Delay, d2	2.1		0.2			0.2
Delay (s)	26.1		6.9			8.6
Level of Service	C		A			A
Approach Delay (s)	26.1		6.9			8.6
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

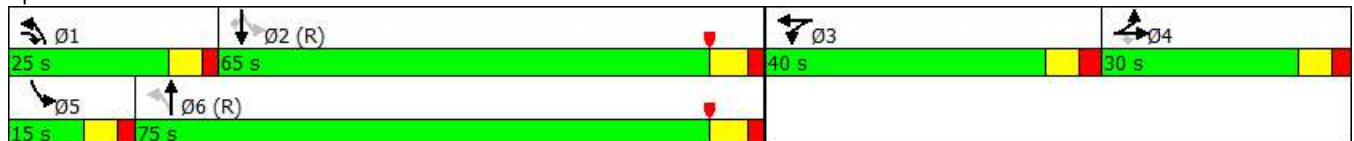
Timings
3: Cedar Bluff Road & Park West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	60	17	278	255	61	146	506	49	855	25
Future Volume (vph)	60	17	278	255	61	146	506	49	855	25
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	23.7	23.7	40.5	24.8	24.8	99.8	89.3	93.8	82.7	82.7
Actuated g/C Ratio	0.15	0.15	0.25	0.16	0.16	0.62	0.56	0.59	0.52	0.52
v/c Ratio	0.25	0.70	0.42	0.70	0.54	0.45	0.22	0.11	0.50	0.03
Control Delay	61.7	80.8	52.2	78.2	36.9	19.0	13.6	13.0	24.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	80.8	52.2	78.2	36.9	19.0	13.6	13.0	24.1	0.0
LOS	E	F	D	E	D	B	B	B	C	A
Approach Delay		65.7			51.1		14.7		22.9	
Approach LOS		E			D		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 32.0
 Intersection Capacity Utilization 61.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2019 Background PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	65	160	160	175	333	159	616	53	929	27
v/c Ratio	0.25	0.70	0.42	0.70	0.54	0.45	0.22	0.11	0.50	0.03
Control Delay	61.7	80.8	52.2	78.2	36.9	19.0	13.6	13.0	24.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	80.8	52.2	78.2	36.9	19.0	13.6	13.0	24.1	0.0
Queue Length 50th (ft)	61	169	148	193	100	70	118	18	266	0
Queue Length 95th (ft)	107	251	208	272	146	161	160	41	322	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	292	262	455	364	834	420	2798	517	1865	906
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.61	0.35	0.48	0.40	0.38	0.22	0.10	0.50	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Background PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	17	278	255	61	152	146	506	61	49	855	25
Future Volume (vph)	60	17	278	255	61	152	146	506	61	49	855	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Flt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1542	1512	1618	3210		1770	5004		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.20	1.00		0.40	1.00	1.00
Satd. Flow (perm)	1719	1542	1512	1618	3210		381	5004		740	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	18	302	277	66	165	159	550	66	53	929	27
RTOR Reduction (vph)	0	0	0	0	123	0	0	8	0	0	0	13
Lane Group Flow (vph)	65	160	160	175	210	0	159	608	0	53	929	14
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	20.7	20.7	32.0	22.3	22.3		96.9	85.6		86.1	80.2	80.2
Effective Green, g (s)	23.7	23.7	36.0	24.8	24.8		99.5	88.1		92.1	82.7	82.7
Actuated g/C Ratio	0.15	0.15	0.22	0.16	0.16		0.62	0.55		0.58	0.52	0.52
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	254	228	340	250	497		352	2755		481	1865	834
v/s Ratio Prot	0.04	c0.10	c0.04	c0.11	0.07		c0.04	0.12		0.01	c0.26	
v/s Ratio Perm			0.07				0.24			0.06		0.01
v/c Ratio	0.26	0.70	0.47	0.70	0.42		0.45	0.22		0.11	0.50	0.02
Uniform Delay, d1	60.3	64.8	53.7	64.1	61.1		16.2	18.4		14.9	25.1	18.8
Progression Factor	1.01	1.00	1.01	1.00	1.00		1.05	0.69		0.89	0.84	1.00
Incremental Delay, d2	0.4	8.7	0.8	7.7	0.4		0.6	0.2		0.1	0.9	0.0
Delay (s)	61.2	73.8	54.9	71.7	61.6		17.6	12.9		13.3	22.0	18.9
Level of Service	E	E	D	E	E		B	B		B	C	B
Approach Delay (s)		63.8			65.1			13.8			21.5	
Approach LOS		E			E			B			C	
Intersection Summary												
HCM 2000 Control Delay			33.6				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			61.0%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

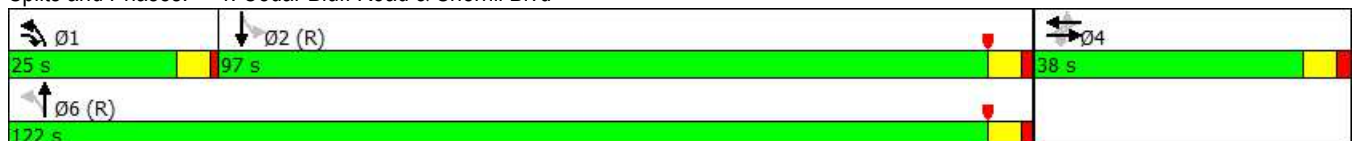
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	153	3	159	83	0	110	717	7	954
Future Volume (vph)	153	3	159	83	0	110	717	7	954
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.0	27.0	40.0		27.0	126.5	126.0	113.5	113.5
Actuated g/C Ratio	0.17	0.17	0.25		0.17	0.79	0.79	0.71	0.71
v/c Ratio	0.74	0.01	0.35		0.21	0.27	0.28	0.02	0.41
Control Delay	81.7	51.0	20.3		27.4	5.1	3.6	9.0	10.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	51.0	20.3		27.4	5.1	3.6	9.0	10.7
LOS	F	D	C		C	A	A	A	B
Approach Delay		50.4			27.4		3.8		10.7
Approach LOS		D			C		A		B

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 14.4
 Intersection Capacity Utilization 62.1%
 Analysis Period (min) 15









Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd























Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Background PM Peak w MOB
Parkwest Medical Center

								
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	166	3	173	95	120	796	8	1048
v/c Ratio	0.74	0.01	0.35	0.21	0.27	0.28	0.02	0.41
Control Delay	81.7	51.0	20.3	27.4	5.1	3.6	9.0	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	51.0	20.3	27.4	5.1	3.6	9.0	10.7
Queue Length 50th (ft)	167	3	57	20	16	57	2	218
Queue Length 95th (ft)	243	13	118	46	26	71	10	315
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	287	419	613	577	558	2806	461	2577
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.01	0.28	0.16	0.22	0.28	0.02	0.41
Intersection Summary								

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Background PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	3	159	83	0	5	110	717	16	7	954	10
Future Volume (vph)	153	3	159	83	0	5	110	717	16	7	954	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3223		1906	3563		1761	3633	
Flt Permitted	0.68	1.00	1.00		0.74		0.23	1.00		0.35	1.00	
Satd. Flow (perm)	1333	1947	1655		2491		454	3563		650	3633	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	3	173	90	0	5	120	779	17	8	1037	11
RTOR Reduction (vph)	0	0	81	0	42	0	0	1	0	0	0	0
Lane Group Flow (vph)	166	3	92	0	53	0	120	795	0	8	1048	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	24.5	24.5	31.9		24.5		124.0	124.0		111.6	111.6	
Effective Green, g (s)	27.0	27.0	35.9		27.0		126.0	126.0		113.6	113.6	
Actuated g/C Ratio	0.17	0.17	0.22		0.17		0.79	0.79		0.71	0.71	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	224	328	371		420		442	2805		461	2579	
v/s Ratio Prot		0.00	0.01				0.02	c0.22			c0.29	
v/s Ratio Perm	c0.12		0.04		0.02		0.20			0.01		
v/c Ratio	0.74	0.01	0.25		0.13		0.27	0.28		0.02	0.41	
Uniform Delay, d1	63.2	55.4	51.0		56.5		5.5	4.7		6.8	9.5	
Progression Factor	1.00	1.00	1.00		1.00		0.83	0.66		1.00	1.00	
Incremental Delay, d2	12.4	0.0	0.3		0.1		0.2	0.3		0.1	0.5	
Delay (s)	75.6	55.4	51.2		56.6		4.7	3.3		6.9	9.9	
Level of Service	E	E	D		E		A	A		A	A	
Approach Delay (s)		63.1			56.6			3.5			9.9	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			16.9				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			62.1%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	76	49	835	55	963	
Future Volume (vph)	76	49	835	55	963	
Turn Type	Perm	Over	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8			6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	14.0	11.5	26.5	11.5	26.5	14.0
Total Split (s)	25.0	20.0	70.0	20.0	90.0	25.0
Total Split (%)	21.7%	17.4%	60.9%	17.4%	78.3%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	6.5	84.6	94.0	94.3	
Actuated g/C Ratio	0.11	0.06	0.74	0.82	0.82	
v/c Ratio	0.55	0.30	0.46	0.16	0.36	
Control Delay	61.8	7.4	6.5	3.9	4.1	
Queue Delay	0.0	0.0	0.1	0.0	0.0	
Total Delay	61.8	7.4	6.5	3.9	4.1	
LOS	E	A	A	A	A	
Approach Delay			6.5		4.1	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 7.4
 Intersection Capacity Utilization 58.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background PM Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	83	53	1156	60	1047
v/c Ratio	0.55	0.30	0.46	0.16	0.36
Control Delay	61.8	7.4	6.5	3.9	4.1
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	61.8	7.4	6.5	3.9	4.1
Queue Length 50th (ft)	59	0	166	8	101
Queue Length 95th (ft)	107	13	191	20	160
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	232	278	2533	477	2888
Starvation Cap Reductn	0	0	289	0	0
Spillback Cap Reductn	0	0	0	0	78
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.19	0.52	0.13	0.37
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	76	0	49	0	835	228	55	963	0
Future Volume (vph)	0	0	0	76	0	49	0	835	228	55	963	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3425		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.20	1.00	
Satd. Flow (perm)				1410		1583		3425		369	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	83	0	53	0	908	248	60	1047	0
RTOR Reduction (vph)	0	0	0	0	0	51	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	83	0	2	0	1142	0	60	1047	0
Turn Type	Perm			Perm		Over	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)				10.7		5.3		81.0		91.8	91.8	
Effective Green, g (s)				10.7		5.3		81.0		91.8	91.8	
Actuated g/C Ratio				0.09		0.05		0.70		0.80	0.80	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				131		72		2412		358	2811	
v/s Ratio Prot						0.00		c0.33		0.01	c0.30	
v/s Ratio Perm				c0.06						0.13		
v/c Ratio				0.63		0.03		0.47		0.17	0.37	
Uniform Delay, d ₁				50.3		52.4		7.5		3.8	3.3	
Progression Factor				1.00		1.00		0.73		1.00	1.00	
Incremental Delay, d ₂				9.6		0.2		0.6		0.2	0.4	
Delay (s)				59.9		52.6		6.1		4.0	3.7	
Level of Service				E		D		A		A	A	
Approach Delay (s)		0.0			57.0			6.1			3.7	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.9									
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			115.0						18.0			
Intersection Capacity Utilization			58.7%									
Analysis Period (min)			15									
c Critical Lane Group												

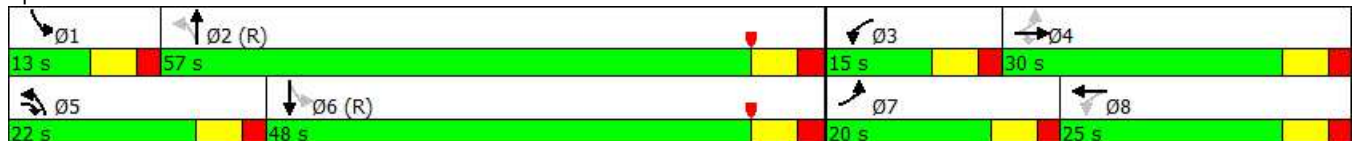
Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	196	92	53	22	147	209	609	21	878
Future Volume (vph)	196	92	53	22	147	209	609	21	878
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	35.7	27.8	47.5	22.8	16.0	67.3	59.3	53.9	47.1
Actuated g/C Ratio	0.31	0.24	0.41	0.20	0.14	0.59	0.52	0.47	0.41
v/c Ratio	0.65	0.22	0.08	0.08	0.75	0.76	0.38	0.06	0.75
Control Delay	40.3	37.6	1.8	27.5	62.7	36.8	19.1	11.1	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	40.3	37.6	1.8	27.5	62.7	36.8	19.1	11.1	35.3
LOS	D	D	A	C	E	D	B	B	D
Approach Delay		33.6			58.8		23.5		34.8
Approach LOS		C			E		C		C










Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 32.6
 Intersection Capacity Utilization 79.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd























									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	213	100	58	24	193	227	697	23	1065
v/c Ratio	0.65	0.22	0.08	0.08	0.75	0.76	0.38	0.06	0.75
Control Delay	40.3	37.6	1.8	27.5	62.7	36.8	19.1	11.1	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	40.3	37.6	1.8	27.5	62.7	36.8	19.1	11.1	35.3
Queue Length 50th (ft)	121	62	0	12	132	92	175	9	402
Queue Length 95th (ft)	184	111	11	31	209	#185	236	18	470
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	332	449	735	318	306	331	1812	404	1426
Starvation Cap Reductn	0	0	0	0	0	0	0	0	93
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.22	0.08	0.08	0.63	0.69	0.38	0.06	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd


























2019 Background PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	92	53	22	147	30	209	609	32	21	878	102
Future Volume (vph)	196	92	53	22	147	30	209	609	32	21	878	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1815		1770	3513		1761	3466	
Flt Permitted	0.33	1.00	1.00	0.69	1.00		0.10	1.00		0.39	1.00	
Satd. Flow (perm)	622	1863	1583	1290	1815		192	3513		717	3466	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	100	58	24	160	33	227	662	35	23	954	111
RTOR Reduction (vph)	0	0	37	0	7	0	0	3	0	0	7	0
Lane Group Flow (vph)	213	100	21	24	186	0	227	694	0	23	1058	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	38.1	27.8	41.5	22.7	18.4		64.4	54.5		48.6	44.7	
Effective Green, g (s)	38.1	27.8	41.5	22.7	18.4		64.4	54.5		48.6	44.7	
Actuated g/C Ratio	0.33	0.24	0.36	0.20	0.16		0.56	0.47		0.42	0.39	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	342	450	653	272	290		295	1664		338	1347	
v/s Ratio Prot	c0.07	0.05	0.00	0.00	0.10		c0.09	0.20		0.00	0.31	
v/s Ratio Perm	c0.13		0.01	0.01			c0.34			0.03		
v/c Ratio	0.62	0.22	0.03	0.09	0.64		0.77	0.42		0.07	0.79	
Uniform Delay, d1	29.9	34.9	23.8	37.5	45.2		24.4	19.8		19.4	30.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.89	1.04	
Incremental Delay, d2	3.5	0.3	0.0	0.1	4.8		11.4	0.8		0.1	4.4	
Delay (s)	33.5	35.2	23.8	37.7	50.0		35.8	20.6		17.3	36.5	
Level of Service	C	D	C	D	D		D	C		B	D	
Approach Delay (s)		32.4			48.7			24.3			36.1	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
 7: Park 40 Blvd & Sherrill Blvd

2019 Background PM Peak w MOB
 Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 	 	
Traffic Volume (veh/h)	33	341	8	20	180	73	19	36	17	158	106	16	
Future Volume (Veh/h)	33	341	8	20	180	73	19	36	17	158	106	16	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	36	371	9	22	196	79	21	39	18	172	115	17	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	275			380			664	766	190	574	732	138	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	275			380			664	766	190	574	732	138	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98			91	88	98	50	65	98	
cM capacity (veh/h)	1285			1175			240	316	820	343	331	886	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	36	247	133	120	177	60	18	172	132				
Volume Left	36	0	0	22	0	21	0	172	0				
Volume Right	0	0	9	0	79	0	18	0	17				
cSH	1285	1700	1700	1175	1700	284	820	343	360				
Volume to Capacity	0.03	0.15	0.08	0.02	0.10	0.21	0.02	0.50	0.37				
Queue Length 95th (ft)	2	0	0	1	0	20	2	67	41				
Control Delay (s)	7.9	0.0	0.0	1.6	0.0	21.0	9.5	25.6	20.7				
Lane LOS	A			A		C	A	D	C				
Approach Delay (s)	0.7			0.7		18.4		23.5					
Approach LOS						C		C					
Intersection Summary													
Average Delay	8.3												
Intersection Capacity Utilization	43.0%			ICU Level of Service					A				
Analysis Period (min)	15												

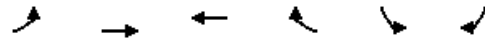
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Background PM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	13	7	249	126	11	139	
Future Volume (Veh/h)	13	7	249	126	11	139	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	14	8	271	137	12	151	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	439	204			408		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	439	204			408		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	541	803			1147		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	14	8	181	227	12	76	76
Volume Left	14	0	0	0	12	0	0
Volume Right	0	8	0	137	0	0	0
cSH	541	803	1700	1700	1147	1700	1700
Volume to Capacity	0.03	0.01	0.11	0.13	0.01	0.04	0.04
Queue Length 95th (ft)	2	1	0	0	1	0	0
Control Delay (s)	11.8	9.5	0.0	0.0	8.2	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.0		0.0		0.6		
Approach LOS	B						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			20.9%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Background PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Volume (veh/h)	0	325	229	0	30	0
Future Volume (Veh/h)	0	325	229	0	30	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	353	249	0	33	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	249				426	124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	249				426	124
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				94	100
cM capacity (veh/h)	1314				557	903
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	118	235	166	83	33	0
Volume Left	0	0	0	0	33	0
Volume Right	0	0	0	0	0	0
cSH	1314	1700	1700	1700	557	1700
Volume to Capacity	0.00	0.14	0.10	0.05	0.06	0.00
Queue Length 95th (ft)	0	0	0	0	5	0
Control Delay (s)	0.0	0.0	0.0	0.0	11.9	0.0
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		11.9	
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			19.0%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

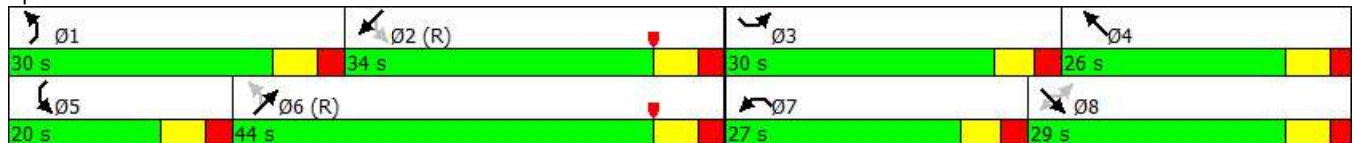
2019 Background PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	321	169	107	401	235	261	596	12	433
Future Volume (vph)	321	169	107	401	235	261	596	12	433
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6	6	2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	44.8	22.6	22.6	19.2	19.7	59.7	54.5	41.9	35.9
Actuated g/C Ratio	0.37	0.19	0.19	0.16	0.16	0.50	0.45	0.35	0.30
v/c Ratio	0.87	0.52	0.17	0.80	0.89	0.63	0.48	0.04	0.50
Control Delay	52.0	49.7	0.5	59.8	78.8	25.6	25.3	18.8	37.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	49.7	0.5	59.8	78.8	25.6	25.3	18.8	37.7
LOS	D	D	A	E	E	C	C	B	D
Approach Delay		42.1			67.1		25.4		37.3
Approach LOS		D			E		C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 41.3
 Intersection Capacity Utilization 79.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd
























Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT	
Lane Group Flow (vph)	349	184	116	436	270	284	759	13	524	
v/c Ratio	0.87	0.52	0.17	0.80	0.89	0.63	0.48	0.04	0.50	
Control Delay	52.0	49.7	0.5	59.8	78.8	25.6	25.3	18.8	37.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	52.0	49.7	0.5	59.8	78.8	25.6	25.3	18.8	37.7	
Queue Length 50th (ft)	193	128	0	167	205	133	195	5	177	
Queue Length 95th (ft)	#342	204	0	223	#357	198	306	17	252	
Internal Link Dist (ft)		1094			6715		2069		1876	
Turn Bay Length (ft)	200		225	175		475		100		
Base Capacity (vph)	425	362	706	600	313	511	1580	401	1048	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.82	0.51	0.16	0.73	0.86	0.56	0.48	0.03	0.50	

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Background PM Peak w MOB
 Parkwest Medical Center

													
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR	
Lane Configurations													
Traffic Volume (vph)	321	169	107	401	235	14	261	596	102	12	433	49	
Future Volume (vph)	321	169	107	401	235	14	261	596	102	12	433	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5		
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95		
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98		
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3462		1770	3486		
Flt Permitted	0.21	1.00	1.00	0.95	1.00		0.29	1.00		0.36	1.00		
Satd. Flow (perm)	391	1863	2787	3433	1847		547	3462		678	3486		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	349	184	116	436	255	15	284	648	111	13	471	53	
RTOR Reduction (vph)	0	0	94	0	2	0	0	10	0	0	6	0	
Lane Group Flow (vph)	349	184	22	436	268	0	284	749	0	13	518	0	
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA		
Protected Phases	3	8		7	4		1	6		5	2		
Permitted Phases	8		8				6	6		2			
Actuated Green, G (s)	44.7	22.6	22.6	19.2	19.7		59.7	50.6		38.5	35.9		
Effective Green, g (s)	44.7	22.6	22.6	19.2	19.7		59.7	50.6		38.5	35.9		
Actuated g/C Ratio	0.37	0.19	0.19	0.16	0.16		0.50	0.42		0.32	0.30		
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)	399	350	524	549	303		448	1459		241	1042		
v/s Ratio Prot	c0.16	0.10		0.13	0.15		c0.09	0.22		0.00	0.15		
v/s Ratio Perm	c0.16		0.01				c0.22			0.02			
v/c Ratio	0.87	0.53	0.04	0.79	0.89		0.63	0.51		0.05	0.50		
Uniform Delay, d1	30.7	43.9	39.8	48.5	49.0		19.5	25.6		27.9	34.6		
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	18.7	1.4	0.0	7.8	25.0		2.9	1.3		0.1	1.7		
Delay (s)	49.5	45.3	39.9	56.3	74.1		22.4	26.9		28.0	36.3		
Level of Service	D	D	D	E	E		C	C		C	D		
Approach Delay (s)		46.6			63.1			25.7			36.1		
Approach LOS		D			E			C			D		

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↑↑↑
Traffic Volume (vph)	387	441	1255	1078
Future Volume (vph)	387	441	1255	1078
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	27.0	27.0	43.0	43.0
Total Split (%)	38.6%	38.6%	61.4%	61.4%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	18.4	18.4	43.6	43.6
Actuated g/C Ratio	0.26	0.26	0.62	0.62
v/c Ratio	0.66	0.66	0.34	0.37
Control Delay	23.6	24.5	7.1	6.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	24.5	7.1	6.9
LOS	C	C	A	A
Approach Delay	23.9		7.1	6.9
Approach LOS	C		A	A

Intersection Summary





Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 40 (57%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 11.4
 Intersection Capacity Utilization 52.7%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	617	283	1364	1172
v/c Ratio	0.66	0.66	0.34	0.37
Control Delay	23.6	24.5	7.1	6.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	24.5	7.1	6.9
Queue Length 50th (ft)	107	89	72	112
Queue Length 95th (ft)	144	159	109	149
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1148	522	3987	3180
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.54	0.34	0.37
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Background Midday Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	387	441	0	1255	1078	0
Future Volume (vph)	387	441	0	1255	1078	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.95	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3361	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3361	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	421	479	0	1364	1172	0
RTOR Reduction (vph)	49	49	0	0	0	0
Lane Group Flow (vph)	568	234	0	1364	1172	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	16.4	16.4		41.6	41.6	
Effective Green, g (s)	18.4	18.4		43.6	43.6	
Actuated g/C Ratio	0.26	0.26		0.62	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	883	382		3991	3183	
v/s Ratio Prot	c0.17	0.16		0.21	c0.23	
v/s Ratio Perm						
v/c Ratio	0.64	0.61		0.34	0.37	
Uniform Delay, d ₁	22.9	22.7		6.3	6.5	
Progression Factor	1.00	1.00		1.00	0.96	
Incremental Delay, d ₂	1.2	2.1		0.2	0.3	
Delay (s)	24.1	24.7		6.6	6.5	
Level of Service	C	C		A	A	
Approach Delay (s)	24.3			6.6	6.5	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			11.2	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			70.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization			52.7%	ICU Level of Service		A
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

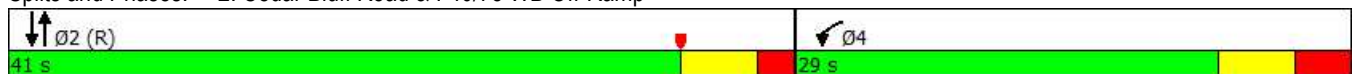
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	779	1642	543
Future Volume (vph)	779	1642	543
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	29.0	41.0	41.0
Total Split (%)	41.4%	58.6%	58.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	23.1	38.9	38.9
Actuated g/C Ratio	0.33	0.56	0.56
v/c Ratio	0.73	0.48	0.21
Control Delay	24.6	7.5	7.6
Queue Delay	0.0	0.0	0.0
Total Delay	24.6	7.5	7.6
LOS	C	A	A
Approach Delay	24.6	7.5	7.6
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 41 (59%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 12.0
 Intersection Capacity Utilization 52.7%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp

















Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	847	1785	590
v/c Ratio	0.73	0.48	0.21
Control Delay	24.6	7.5	7.6
Queue Delay	0.0	0.0	0.0
Total Delay	24.6	7.5	7.6
Queue Length 50th (ft)	157	77	68
Queue Length 95th (ft)	214	89	40
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1260	3702	2800
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.67	0.48	0.21
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Background Midday Peak w MOB
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	779	0	1642	0	0	543
Future Volume (vph)	779	0	1642	0	0	543
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Flt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	847	0	1785	0	0	590
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	847	0	1785	0	0	590
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	20.1		36.9			36.9
Effective Green, g (s)	23.1		38.9			38.9
Actuated g/C Ratio	0.33		0.56			0.56
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1164		3698			2797
v/s Ratio Prot	c0.24		c0.27			0.12
v/s Ratio Perm						
v/c Ratio	0.73		0.48			0.21
Uniform Delay, d1	20.7		9.4			7.8
Progression Factor	1.00		0.72			0.92
Incremental Delay, d2	2.0		0.4			0.2
Delay (s)	22.6		7.2			7.4
Level of Service	C		A			A
Approach Delay (s)	22.6		7.2			7.4
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.57			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			52.7%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

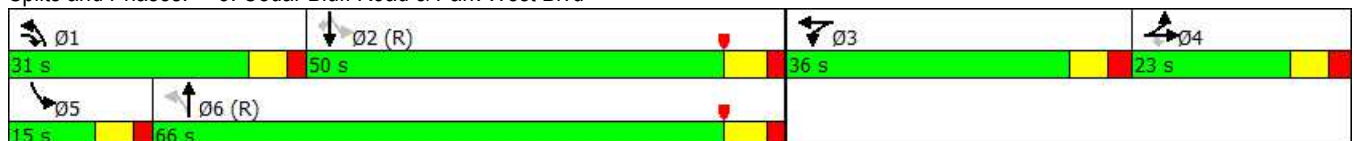
2019 Background Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	77	36	258	115	186	273	733	49	513	42
Future Volume (vph)	77	36	258	115	186	273	733	49	513	42
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	23.0	23.0	31.0	36.0	36.0	31.0	66.0	15.0	50.0	50.0
Total Split (%)	16.4%	16.4%	22.1%	25.7%	25.7%	22.1%	47.1%	10.7%	35.7%	35.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.1	22.1	43.8	18.9	18.9	87.5	77.0	76.2	65.3	65.3
Actuated g/C Ratio	0.16	0.16	0.31	0.14	0.14	0.62	0.55	0.54	0.47	0.47
v/c Ratio	0.31	0.65	0.33	0.51	0.69	0.54	0.32	0.14	0.33	0.05
Control Delay	54.3	67.5	37.2	63.8	47.5	18.6	12.9	13.1	24.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	54.3	67.5	37.2	63.8	47.5	19.4	12.9	13.1	24.4	0.2
LOS	D	E	D	E	D	B	B	B	C	A
Approach Delay		52.9			51.3		14.6		21.8	
Approach LOS		D			D		B		C	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 28.5
 Intersection Capacity Utilization 58.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd

























Queues
3: Cedar Bluff Road & Park West Blvd

2019 Background Midday Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	84	162	157	112	368	297	886	53	558	46
v/c Ratio	0.31	0.65	0.33	0.51	0.69	0.54	0.32	0.14	0.33	0.05
Control Delay	54.3	67.5	37.2	63.8	47.5	18.6	12.9	13.1	24.4	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0
Total Delay	54.3	67.5	37.2	63.8	47.5	19.4	12.9	13.1	24.4	0.2
Queue Length 50th (ft)	68	147	115	105	128	124	158	13	148	0
Queue Length 95th (ft)	117	222	158	169	178	268	204	42	231	1
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	280	257	567	369	833	622	2761	418	1683	844
Starvation Cap Reductn	0	0	0	0	0	124	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.63	0.28	0.30	0.44	0.60	0.32	0.13	0.33	0.05
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	36	258	115	186	141	273	733	82	49	513	42
Future Volume (vph)	77	36	258	115	186	141	273	733	82	49	513	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1576	1512	1618	3295		1770	5009		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.35	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1719	1576	1512	1618	3295		650	5009		567	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	39	280	125	202	153	297	797	89	53	558	46
RTOR Reduction (vph)	0	0	0	0	90	0	0	8	0	0	0	25
Lane Group Flow (vph)	84	162	157	112	278	0	297	878	0	53	558	21
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	19.1	19.1	35.3	16.4	16.4		85.0	73.3		68.5	62.8	62.8
Effective Green, g (s)	22.1	22.1	39.3	18.9	18.9		87.0	75.8		74.5	65.3	65.3
Actuated g/C Ratio	0.16	0.16	0.28	0.13	0.13		0.62	0.54		0.53	0.47	0.47
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	271	248	424	218	444		549	2712		374	1683	753
v/s Ratio Prot	0.05	c0.10	0.05	0.07	c0.08		c0.07	0.18		0.01	0.15	
v/s Ratio Perm			0.06				c0.27			0.07		0.01
v/c Ratio	0.31	0.65	0.37	0.51	0.63		0.54	0.32		0.14	0.33	0.03
Uniform Delay, d1	52.2	55.4	40.4	56.3	57.2		13.2	17.8		15.8	23.6	20.2
Progression Factor	1.00	1.00	1.01	1.00	1.00		1.14	0.67		0.97	0.91	1.00
Incremental Delay, d2	0.5	5.4	0.4	1.5	2.4		0.8	0.3		0.1	0.5	0.1
Delay (s)	52.9	60.9	41.0	57.8	59.6		15.9	12.3		15.4	21.9	20.3
Level of Service	D	E	D	E	E		B	B		B	C	C
Approach Delay (s)		51.5			59.2			13.2			21.3	
Approach LOS		D			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	140	18	268	105	9	276	800	22	885
Future Volume (vph)	140	18	268	105	9	276	800	22	885
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	35.0	35.0	25.0	35.0	35.0	25.0	105.0	80.0	80.0
Total Split (%)	25.0%	25.0%	17.9%	25.0%	25.0%	17.9%	75.0%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	24.6	24.6	41.9		24.6	108.9	108.4	91.6	91.6
Actuated g/C Ratio	0.18	0.18	0.30		0.18	0.78	0.77	0.65	0.65
v/c Ratio	0.73	0.06	0.51		0.33	0.62	0.33	0.06	0.44
Control Delay	73.7	45.3	26.8		45.8	21.0	3.5	12.4	13.6
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	45.3	26.8		45.8	21.0	3.5	12.4	13.6
LOS	E	D	C		D	C	A	B	B
Approach Delay		43.0			45.8		7.8		13.6
Approach LOS		D			D		A		B

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 70 (50%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 66.2%
 Analysis Period (min) 15

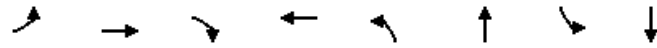
Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Background Midday Peak w MOB
Parkwest Medical Center
























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	152	20	291	148	300	918	24	1030
v/c Ratio	0.73	0.06	0.51	0.33	0.62	0.33	0.06	0.44
Control Delay	73.7	45.3	26.8	45.8	21.0	3.5	12.4	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.7	45.3	26.8	45.8	21.0	3.5	12.4	13.6
Queue Length 50th (ft)	132	15	139	55	61	69	7	219
Queue Length 95th (ft)	203	37	196	85	154	95	26	354
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	267	438	659	575	570	2748	376	2359
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.05	0.44	0.26	0.53	0.33	0.06	0.44

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	18	268	105	9	22	276	800	44	22	885	63
Future Volume (vph)	140	18	268	105	9	22	276	800	44	22	885	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3196		1906	3547		1761	3603	
Flt Permitted	0.61	1.00	1.00		0.76		0.22	1.00		0.31	1.00	
Satd. Flow (perm)	1192	1947	1655		2507		438	3547		576	3603	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	20	291	114	10	24	300	870	48	24	962	68
RTOR Reduction (vph)	0	0	77	0	12	0	0	2	0	0	3	0
Lane Group Flow (vph)	152	20	214	0	136	0	300	916	0	24	1027	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	22.1	22.1	34.0		22.1		106.4	106.4		89.5	89.5	
Effective Green, g (s)	24.6	24.6	38.0		24.6		108.4	108.4		91.5	91.5	
Actuated g/C Ratio	0.18	0.18	0.27		0.18		0.77	0.77		0.65	0.65	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	209	342	449		440		484	2746		376	2354	
v/s Ratio Prot		0.01	0.05				c0.06	0.26			0.29	
v/s Ratio Perm	c0.13		0.08		0.05		c0.42			0.04		
v/c Ratio	0.73	0.06	0.48		0.31		0.62	0.33		0.06	0.44	
Uniform Delay, d1	54.5	48.1	42.7		50.3		7.4	4.8		8.8	11.8	
Progression Factor	1.00	1.00	1.00		1.00		3.26	0.60		1.00	1.00	
Incremental Delay, d2	11.9	0.1	0.6		0.4		2.0	0.3		0.3	0.6	
Delay (s)	66.4	48.1	43.3		50.7		26.2	3.2		9.1	12.3	
Level of Service	E	D	D		D		C	A		A	B	
Approach Delay (s)		51.1			50.7			8.9			12.3	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			19.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			66.2%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	78	37	646	82	848	
Future Volume (vph)	78	37	646	82	848	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	20.0	11.5	26.5	11.5	26.5	20.0
Total Split (s)	25.0	15.0	50.0	15.0	65.0	25.0
Total Split (%)	27.8%	16.7%	55.6%	16.7%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	11.1	21.1	60.5	70.2	70.5	
Actuated g/C Ratio	0.12	0.23	0.67	0.78	0.78	
v/c Ratio	0.49	0.10	0.36	0.18	0.33	
Control Delay	45.7	7.4	6.3	4.2	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.7	7.4	6.3	4.2	4.5	
LOS	D	A	A	A	A	
Approach Delay			6.3		4.4	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 7.1
 Intersection Capacity Utilization 58.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background Midday Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	85	40	841	89	922
v/c Ratio	0.49	0.10	0.36	0.18	0.33
Control Delay	45.7	7.4	6.3	4.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	7.4	6.3	4.2	4.5
Queue Length 50th (ft)	46	0	69	11	78
Queue Length 95th (ft)	88	21	107	27	131
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	297	449	2330	539	2758
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.09	0.36	0.17	0.33
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	78	0	37	0	646	128	82	848	0
Future Volume (vph)	0	0	0	78	0	37	0	646	128	82	848	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.98		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3451		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.28	1.00	
Satd. Flow (perm)				1410		1583		3451		524	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	85	0	40	0	702	139	89	922	0
RTOR Reduction (vph)	0	0	0	0	0	33	0	13	0	0	0	0
Lane Group Flow (vph)	0	0	0	85	0	7	0	828	0	89	922	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				9.5		15.1		56.9		68.0	68.0	
Effective Green, g (s)				9.5		15.1		56.9		68.0	68.0	
Actuated g/C Ratio				0.11		0.17		0.63		0.76	0.76	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				148		265		2181		472	2661	
v/s Ratio Prot						0.00		c0.24		0.01	c0.26	
v/s Ratio Perm				c0.06		0.00				0.13		
v/c Ratio				0.57		0.03		0.38		0.19	0.35	
Uniform Delay, d ₁				38.3		31.3		8.0		3.5	3.6	
Progression Factor				1.00		1.00		0.67		1.00	1.00	
Incremental Delay, d ₂				5.3		0.0		0.5		0.2	0.4	
Delay (s)				43.6		31.3		5.9		3.6	4.0	
Level of Service				D		C		A		A	A	
Approach Delay (s)		0.0			39.7			5.9			4.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.0									A
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			90.0							18.0		
Intersection Capacity Utilization			58.6%									B
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	82	37	55	46	73	141	554	18	837
Future Volume (vph)	82	37	55	46	73	141	554	18	837
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	13.0	17.0	15.0	13.0	17.0	15.0	47.0	13.0	45.0
Total Split (%)	14.4%	18.9%	16.7%	14.4%	18.9%	16.7%	52.2%	14.4%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	18.0	13.1	24.6	14.9	9.5	58.4	55.4	51.4	44.7
Actuated g/C Ratio	0.20	0.15	0.27	0.17	0.11	0.65	0.62	0.57	0.50
v/c Ratio	0.33	0.15	0.12	0.19	0.45	0.45	0.30	0.04	0.57
Control Delay	29.1	35.7	1.1	26.6	42.4	12.2	12.4	5.2	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	35.7	1.1	26.6	42.4	12.2	12.4	5.2	18.3
LOS	C	D	A	C	D	B	B	A	B
Approach Delay		21.6			36.7		12.3		18.0
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 18 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 17.4
 Intersection Capacity Utilization 59.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Background Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	40	60	50	89	153	650	20	987
v/c Ratio	0.33	0.15	0.12	0.19	0.45	0.45	0.30	0.04	0.57
Control Delay	29.1	35.7	1.1	26.6	42.4	12.2	12.4	5.2	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	35.7	1.1	26.6	42.4	12.2	12.4	5.2	18.3
Queue Length 50th (ft)	39	21	0	21	45	35	88	2	239
Queue Length 95th (ft)	77	51	5	50	90	62	167	m5	306
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	276	283	530	263	229	356	2178	514	1771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.14	0.11	0.19	0.39	0.43	0.30	0.04	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.
























HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Background Midday Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	37	55	46	73	9	141	554	44	18	837	71
Future Volume (vph)	82	37	55	46	73	9	141	554	44	18	837	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1831		1770	3500		1761	3480	
Flt Permitted	0.55	1.00	1.00	0.73	1.00		0.17	1.00		0.40	1.00	
Satd. Flow (perm)	1019	1863	1583	1362	1831		322	3500		750	3480	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	40	60	50	79	10	153	602	48	20	910	77
RTOR Reduction (vph)	0	0	47	0	5	0	0	6	0	0	7	0
Lane Group Flow (vph)	89	40	13	50	84	0	153	644	0	20	980	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	18.5	11.5	19.8	13.5	9.0		55.2	46.9		43.8	41.2	
Effective Green, g (s)	18.5	11.5	19.8	13.5	9.0		55.2	46.9		43.8	41.2	
Actuated g/C Ratio	0.21	0.13	0.22	0.15	0.10		0.61	0.52		0.49	0.46	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	238	453	224	183		331	1823		394	1593	
v/s Ratio Prot	c0.03	0.02	0.00	0.01	c0.05		c0.04	0.18		0.00	c0.28	
v/s Ratio Perm	0.04		0.01	0.02			0.24			0.02		
v/c Ratio	0.33	0.17	0.03	0.22	0.46		0.46	0.35		0.05	0.62	
Uniform Delay, d1	29.9	35.0	27.6	33.5	38.2		10.2	12.6		12.0	18.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.61	0.91	
Incremental Delay, d2	0.7	0.3	0.0	0.5	1.8		1.0	0.5		0.1	1.7	
Delay (s)	30.7	35.3	27.6	34.0	40.0		11.2	13.2		7.3	18.4	
Level of Service	C	D	C	C	D		B	B		A	B	
Approach Delay (s)		30.7			37.8			12.8			18.2	
Approach LOS		C			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.6				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			24.5		
Intersection Capacity Utilization			59.8%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Background Midday Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 				
Traffic Volume (veh/h)	29	280	19	32	287	54	8	22	25	124	71	21	
Future Volume (Veh/h)	29	280	19	32	287	54	8	22	25	124	71	21	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	32	304	21	35	312	59	9	24	27	135	77	23	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	371			325			666	820	162	666	800	186	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	371			325			666	820	162	666	800	186	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			97			97	92	97	55	74	97	
cM capacity (veh/h)	1184			1231			258	292	854	300	299	825	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	32	203	122	191	215	33	27	135	100				
Volume Left	32	0	0	35	0	9	0	135	0				
Volume Right	0	0	21	0	59	0	27	0	23				
cSH	1184	1700	1700	1231	1700	282	854	300	350				
Volume to Capacity	0.03	0.12	0.07	0.03	0.13	0.12	0.03	0.45	0.29				
Queue Length 95th (ft)	2	0	0	2	0	10	2	55	29				
Control Delay (s)	8.1	0.0	0.0	1.7	0.0	19.5	9.4	26.5	19.3				
Lane LOS	A			A		C	A	D	C				
Approach Delay (s)	0.7			0.8		14.9		23.4					
Approach LOS						B		C					
Intersection Summary													
Average Delay	6.6												
Intersection Capacity Utilization	42.5%			ICU Level of Service						A			
Analysis Period (min)	15												

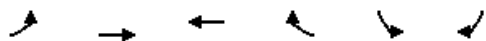
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Background Midday Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	16	8	232	63	10	186	
Future Volume (Veh/h)	16	8	232	63	10	186	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	17	9	252	68	11	202	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	409	160			320		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	409	160			320		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	565	857			1237		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	17	9	168	152	11	101	101
Volume Left	17	0	0	0	11	0	0
Volume Right	0	9	0	68	0	0	0
cSH	565	857	1700	1700	1237	1700	1700
Volume to Capacity	0.03	0.01	0.10	0.09	0.01	0.06	0.06
Queue Length 95th (ft)	2	1	0	0	1	0	0
Control Delay (s)	11.6	9.2	0.0	0.0	7.9	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.8		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			18.4%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Background Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	405	247	0	184	3
Future Volume (Veh/h)	0	405	247	0	184	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	440	268	0	200	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	268			488	134	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	268			488	134	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			61	100	
cM capacity (veh/h)	1293			509	890	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	147	293	179	89	200	3
Volume Left	0	0	0	0	200	0
Volume Right	0	0	0	0	0	3
cSH	1293	1700	1700	1700	509	890
Volume to Capacity	0.00	0.17	0.11	0.05	0.39	0.00
Queue Length 95th (ft)	0	0	0	0	46	0
Control Delay (s)	0.0	0.0	0.0	0.0	16.6	9.1
Lane LOS					C	A
Approach Delay (s)	0.0	0.0		16.5		
Approach LOS					C	
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			28.1%	ICU Level of Service		A
Analysis Period (min)	15					

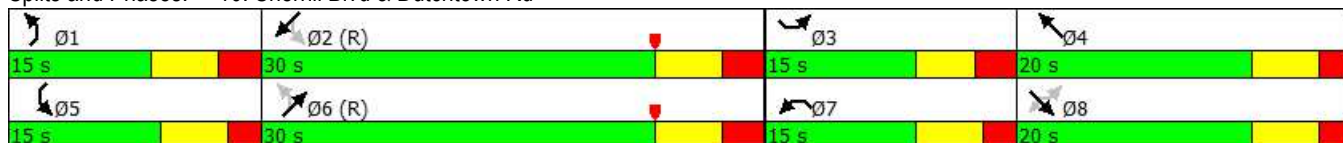
Timings
10: Sherrill Blvd & Dutchtown Rd

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	76	195	157	120	240	136	168	31	67
Future Volume (vph)	76	195	157	120	240	136	168	31	67
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	15.0	20.0	20.0	15.0	20.0	15.0	30.0	15.0	30.0
Total Split (%)	18.8%	25.0%	25.0%	18.8%	25.0%	18.8%	37.5%	18.8%	37.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	20.7	14.1	14.1	8.0	14.3	39.2	34.1	34.2	27.4
Actuated g/C Ratio	0.26	0.18	0.18	0.10	0.18	0.49	0.43	0.43	0.34
v/c Ratio	0.30	0.65	0.25	0.38	0.83	0.26	0.21	0.07	0.15
Control Delay	20.6	40.8	3.0	36.6	54.8	12.8	11.1	11.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	40.8	3.0	36.6	54.8	12.8	11.1	11.5	9.7
LOS	C	D	A	D	D	B	B	B	A
Approach Delay		23.4			49.0		11.6		10.0
Approach LOS		C			D		B		A










Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 65 (81%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 24.7
 Intersection Capacity Utilization 55.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	83	212	171	130	277	148	315	34	180
v/c Ratio	0.30	0.65	0.25	0.38	0.83	0.26	0.21	0.07	0.15
Control Delay	20.6	40.8	3.0	36.6	54.8	12.8	11.1	11.5	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	40.8	3.0	36.6	54.8	12.8	11.1	11.5	9.7
Queue Length 50th (ft)	27	99	0	31	132	40	33	8	13
Queue Length 95th (ft)	57	#183	15	57	#268	73	65	23	36
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	299	335	680	386	339	579	1488	562	1173
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.63	0.25	0.34	0.82	0.26	0.21	0.06	0.15

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
10: Sherrill Blvd & Dutchtown Rd

2019 Background Midday Peak w MOB
Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	76	195	157	120	240	15	136	168	121	31	67	98
Future Volume (vph)	76	195	157	120	240	15	136	168	121	31	67	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3317		1770	3224	
Flt Permitted	0.35	1.00	1.00	0.95	1.00		0.55	1.00		0.56	1.00	
Satd. Flow (perm)	650	1863	2787	3433	1847		1021	3317		1044	3224	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	212	171	130	261	16	148	183	132	34	73	107
RTOR Reduction (vph)	0	0	141	0	2	0	0	82	0	0	72	0
Lane Group Flow (vph)	83	212	30	130	275	0	148	233	0	34	108	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	20.7	14.1	14.1	6.8	14.3		38.4	30.5		30.3	26.2	
Effective Green, g (s)	20.7	14.1	14.1	6.8	14.3		38.4	30.5		30.3	26.2	
Actuated g/C Ratio	0.26	0.18	0.18	0.08	0.18		0.48	0.38		0.38	0.33	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	260	328	491	291	330		564	1264		432	1055	
v/s Ratio Prot	0.03	0.11		c0.04	c0.15		c0.03	0.07		0.00	0.03	
v/s Ratio Perm	0.06		0.01				c0.10			0.03		
v/c Ratio	0.32	0.65	0.06	0.45	0.83		0.26	0.18		0.08	0.10	
Uniform Delay, d1	23.3	30.6	27.4	34.8	31.7		11.9	16.5		15.7	18.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	4.3	0.1	1.1	16.2		0.2	0.3		0.1	0.2	
Delay (s)	24.0	35.0	27.5	35.9	47.9		12.2	16.8		15.8	18.9	
Level of Service	C	C	C	D	D		B	B		B	B	
Approach Delay (s)		30.3			44.1			15.3			18.4	
Approach LOS		C			D			B			B	

Intersection Summary

HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

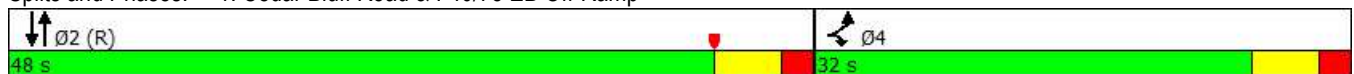
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	479	351	1111	992
Future Volume (vph)	479	351	1111	992
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	21.1	21.1	50.9	50.9
Actuated g/C Ratio	0.26	0.26	0.64	0.64
v/c Ratio	0.67	0.64	0.30	0.33
Control Delay	28.2	24.6	7.3	7.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.2	24.6	7.3	7.6
LOS	C	C	A	A
Approach Delay	27.0		7.3	7.6
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 49.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	620	283	1208	1078
v/c Ratio	0.67	0.64	0.30	0.33
Control Delay	28.2	24.6	7.3	7.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.2	24.6	7.3	7.6
Queue Length 50th (ft)	135	96	69	105
Queue Length 95th (ft)	167	164	110	121
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1217	561	4073	3249
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.50	0.30	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Background School PM Peak MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	479	351	0	1111	992	0
Future Volume (vph)	479	351	0	1111	992	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.98	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3419	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3419	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	521	382	0	1208	1078	0
RTOR Reduction (vph)	23	59	0	0	0	0
Lane Group Flow (vph)	597	224	0	1208	1078	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	19.1	19.1		48.9	48.9	
Effective Green, g (s)	21.1	21.1		50.9	50.9	
Actuated g/C Ratio	0.26	0.26		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	901	383		4077	3251	
v/s Ratio Prot	c0.17	0.15		0.19	c0.21	
v/s Ratio Perm						
v/c Ratio	0.66	0.59		0.30	0.33	
Uniform Delay, d ₁	26.3	25.6		6.5	6.7	
Progression Factor	1.00	1.00		1.00	1.01	
Incremental Delay, d ₂	1.4	1.5		0.2	0.3	
Delay (s)	27.7	27.1		6.7	7.1	
Level of Service	C	C		A	A	
Approach Delay (s)	27.5			6.7	7.1	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

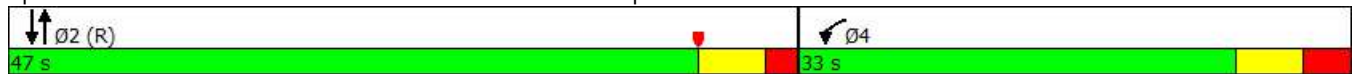
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↘↘↘
Traffic Volume (vph)	680	1590	736
Future Volume (vph)	680	1590	736
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	24.2	47.8	47.8
Actuated g/C Ratio	0.30	0.60	0.60
v/c Ratio	0.69	0.43	0.27
Control Delay	27.9	7.9	8.4
Queue Delay	0.0	0.0	0.0
Total Delay	27.9	7.9	8.4
LOS	C	A	A
Approach Delay	27.9	7.9	8.4
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.6
 Intersection Capacity Utilization 49.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp












Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	739	1728	800
v/c Ratio	0.69	0.43	0.27
Control Delay	27.9	7.9	8.4
Queue Delay	0.0	0.0	0.0
Total Delay	27.9	7.9	8.4
Queue Length 50th (ft)	166	104	110
Queue Length 95th (ft)	205	119	93
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	3976	3007
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.58	0.43	0.27
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Background School PM Peak MOB
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	680	0	1590	0	0	736
Future Volume (vph)	680	0	1590	0	0	736
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	0	1728	0	0	800
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	739	0	1728	0	0	800
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	21.2		45.8			45.8
Effective Green, g (s)	24.2		47.8			47.8
Actuated g/C Ratio	0.30		0.60			0.60
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1067		3976			3007
v/s Ratio Prot	c0.21		c0.26			0.16
v/s Ratio Perm						
v/c Ratio	0.69		0.43			0.27
Uniform Delay, d1	24.6		8.8			7.7
Progression Factor	1.00		0.82			1.01
Incremental Delay, d2	1.6		0.3			0.2
Delay (s)	26.2		7.5			8.0
Level of Service	C		A			A
Approach Delay (s)	26.2		7.5			8.0
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			49.1%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

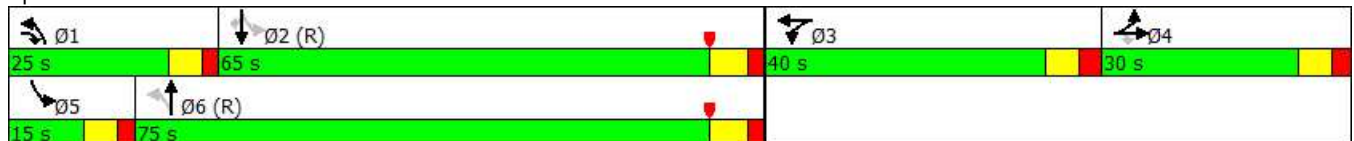
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	101	8	248	171	157	170	668	38	725	26
Future Volume (vph)	101	8	248	171	157	170	668	38	725	26
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.5	22.5	40.2	24.0	24.0	102.0	91.6	94.5	83.8	83.8
Actuated g/C Ratio	0.14	0.14	0.25	0.15	0.15	0.64	0.57	0.59	0.52	0.52
v/c Ratio	0.46	0.66	0.36	0.69	0.62	0.44	0.29	0.10	0.42	0.03
Control Delay	68.1	78.9	50.2	78.4	42.7	15.2	13.7	12.9	22.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	78.9	50.2	78.4	42.7	15.2	13.7	12.9	22.6	0.1
LOS	E	E	D	E	D	B	B	B	C	A
Approach Delay		65.7			53.6		14.0		21.4	
Approach LOS		E			D		B		C	

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 31.2
 Intersection Capacity Utilization 58.3%
 Analysis Period (min) 15











Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	110	141	138	167	378	185	822	41	788	28
v/c Ratio	0.46	0.66	0.36	0.69	0.62	0.44	0.29	0.10	0.42	0.03
Control Delay	68.1	78.9	50.2	78.4	42.7	15.2	13.7	12.9	22.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	78.9	50.2	78.4	42.7	15.2	13.7	12.9	22.6	0.1
Queue Length 50th (ft)	107	149	127	184	128	83	158	14	224	0
Queue Length 95th (ft)	166	222	176	262	177	173	207	34	276	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	291	259	444	364	842	478	2868	439	1889	916
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.54	0.31	0.46	0.45	0.39	0.29	0.09	0.42	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	8	248	171	157	173	170	668	88	38	725	26
Future Volume (vph)	101	8	248	171	157	173	170	668	88	38	725	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.86	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1529	1512	1618	3250		1770	4996		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.26	1.00		0.32	1.00	1.00
Satd. Flow (perm)	1719	1529	1512	1618	3250		486	4996		582	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	9	270	186	171	188	185	726	96	41	788	28
RTOR Reduction (vph)	0	0	0	0	122	0	0	8	0	0	0	13
Lane Group Flow (vph)	110	141	138	167	256	0	185	814	0	41	788	15
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	19.5	19.5	31.7	21.5	21.5		99.5	87.9		86.9	81.3	81.3
Effective Green, g (s)	22.5	22.5	35.7	24.0	24.0		101.5	90.4		92.9	83.8	83.8
Actuated g/C Ratio	0.14	0.14	0.22	0.15	0.15		0.63	0.57		0.58	0.52	0.52
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	241	215	337	242	487		422	2822		400	1890	845
v/s Ratio Prot	0.06	c0.09	0.04	c0.10	0.08		c0.04	0.16		0.01	0.22	
v/s Ratio Perm			0.05				c0.24			0.05		0.01
v/c Ratio	0.46	0.66	0.41	0.69	0.52		0.44	0.29		0.10	0.42	0.02
Uniform Delay, d1	63.1	65.1	53.1	64.5	62.7		14.2	18.1		14.4	23.2	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	0.70		0.90	0.85	1.00
Incremental Delay, d2	1.0	6.3	0.6	7.6	0.8		0.5	0.2		0.1	0.6	0.0
Delay (s)	64.1	71.4	53.7	72.0	63.5		13.1	12.9		13.1	20.4	18.3
Level of Service	E	E	D	E	E		B	B		B	C	B
Approach Delay (s)		63.1			66.1			12.9			20.0	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			32.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			15.5			
Intersection Capacity Utilization			58.3%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	88	172	69	0	202	642	15	1002
Future Volume (vph)	88	172	69	0	202	642	15	1002
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		1		4	1	6		2
Permitted Phases	4	4	4		6		2	
Detector Phase	4	1	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag		Lead			Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.0	33.1		19.0	134.5	134.0	120.4	120.4
Actuated g/C Ratio	0.12	0.21		0.12	0.84	0.84	0.75	0.75
v/c Ratio	0.59	0.45		0.22	0.47	0.25	0.03	0.41
Control Delay	80.6	29.7		25.9	10.5	2.1	6.7	8.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	29.7		25.9	10.5	2.1	6.7	8.2
LOS	F	C		C	B	A	A	A
Approach Delay				25.9		4.0		8.1
Approach LOS				C		A		A

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.6
 Intersection Capacity Utilization 61.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center























Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	187	77	220	738	16	1111
v/c Ratio	0.59	0.45	0.22	0.47	0.25	0.03	0.41
Control Delay	80.6	29.7	25.9	10.5	2.1	6.7	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.6	29.7	25.9	10.5	2.1	6.7	8.2
Queue Length 50th (ft)	97	86	13	37	51	4	194
Queue Length 95th (ft)	155	155	38	77	59	14	295
Internal Link Dist (ft)			642		919		1139
Turn Bay Length (ft)	90			75		85	
Base Capacity (vph)	295	527	580	569	2970	518	2730
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.35	0.13	0.39	0.25	0.03	0.41

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	0	172	69	0	2	202	642	37	15	1002	20
Future Volume (vph)	88	0	172	69	0	2	202	642	37	15	1002	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%			1%	
Total Lost time (s)	3.5		3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00		1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00		0.85		1.00		1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849		1655		3232		1906	3546		1761	3628	
Flt Permitted	0.70		1.00		0.74		0.22	1.00		0.37	1.00	
Satd. Flow (perm)	1371		1655		2509		438	3546		688	3628	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	0	187	75	0	2	220	698	40	16	1089	22
RTOR Reduction (vph)	0	0	75	0	45	0	0	2	0	0	0	0
Lane Group Flow (vph)	96	0	112	0	32	0	220	736	0	16	1111	0
Turn Type	Perm		pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	16.5		25.0		16.5		132.0	132.0		118.5	118.5	
Effective Green, g (s)	19.0		29.0		19.0		134.0	134.0		120.5	120.5	
Actuated g/C Ratio	0.12		0.18		0.12		0.84	0.84		0.75	0.75	
Clearance Time (s)	6.0		5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0		2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	162		299		297		463	2969		518	2732	
v/s Ratio Prot			0.02				c0.03	0.21				0.31
v/s Ratio Perm	c0.07		0.04		0.01		c0.37			0.02		
v/c Ratio	0.59		0.37		0.11		0.48	0.25		0.03	0.41	
Uniform Delay, d1	66.8		57.5		62.9		4.3	2.7		5.0	7.0	
Progression Factor	1.00		1.00		1.00		2.68	0.65		1.00	1.00	
Incremental Delay, d2	5.7		0.6		0.2		0.5	0.2		0.1	0.5	
Delay (s)	72.5		58.1		63.1		11.9	1.9		5.1	7.5	
Level of Service	E		E		E		B	A		A	A	
Approach Delay (s)		63.0			63.1			4.2			7.4	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			14.4				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			61.1%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↑↑	
Traffic Volume (vph)	79	22	721	104	613	
Future Volume (vph)	79	22	721	104	613	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	9.5	10.5	9.5	10.5	10.0
Total Split (s)	30.0	20.0	65.0	20.0	85.0	30.0
Total Split (%)	26.1%	17.4%	56.5%	17.4%	73.9%	26%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	22.9	80.1	93.8	94.1	
Actuated g/C Ratio	0.11	0.20	0.70	0.82	0.82	
v/c Ratio	0.57	0.07	0.40	0.24	0.23	
Control Delay	62.5	7.6	5.7	4.3	3.6	
Queue Delay	0.0	0.0	0.1	0.0	0.0	
Total Delay	62.5	7.6	5.7	4.3	3.6	
LOS	E	A	A	A	A	
Approach Delay			5.7		3.7	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 7.5
 Intersection Capacity Utilization 48.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background School PM Peak MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	86	24	952	113	666
v/c Ratio	0.57	0.07	0.40	0.24	0.23
Control Delay	62.5	7.6	5.7	4.3	3.6
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	62.5	7.6	5.7	4.3	3.6
Queue Length 50th (ft)	62	0	84	15	56
Queue Length 95th (ft)	110	16	113	34	93
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	294	440	2409	548	2880
Starvation Cap Reductn	0	0	253	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.05	0.44	0.21	0.23
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Background School PM Peak MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	79	0	22	0	721	155	104	613	0
Future Volume (vph)	0	0	0	79	0	22	0	721	155	104	613	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3446		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.25	1.00	
Satd. Flow (perm)				1410		1583		3446		472	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	86	0	24	0	784	168	113	666	0
RTOR Reduction (vph)	0	0	0	0	0	20	0	10	0	0	0	0
Lane Group Flow (vph)	0	0	0	86	0	4	0	942	0	113	666	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				10.9		18.1		78.9		91.6	91.6	
Effective Green, g (s)				10.9		18.1		78.9		91.6	91.6	
Actuated g/C Ratio				0.09		0.16		0.69		0.80	0.80	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				133		249		2364		456	2805	
v/s Ratio Prot						0.00		c0.27		0.02	c0.19	
v/s Ratio Perm				c0.06		0.00				0.18		
v/c Ratio				0.65		0.02		0.40		0.25	0.24	
Uniform Delay, d ₁				50.2		40.9		7.8		3.5	2.9	
Progression Factor				1.00		1.00		0.63		1.00	1.00	
Incremental Delay, d ₂				10.3		0.0		0.5		0.3	0.2	
Delay (s)				60.5		40.9		5.4		3.7	3.1	
Level of Service				E		D		A		A	A	
Approach Delay (s)		0.0			56.2			5.4			3.2	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.5									A
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			115.0							18.0		
Intersection Capacity Utilization			48.3%									A
Analysis Period (min)			15									
c Critical Lane Group												

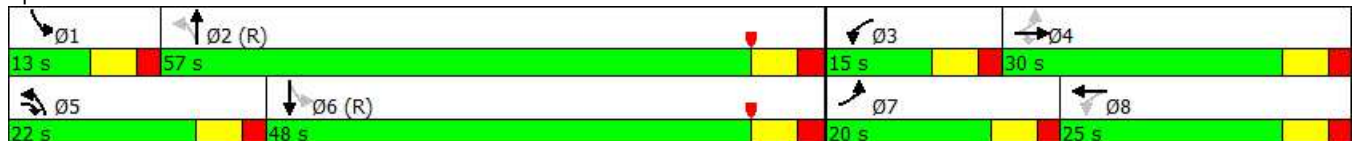
Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	97	95	83	21	138	187	606	17	549
Future Volume (vph)	97	95	83	21	138	187	606	17	549
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.6	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	32.6	25.0	42.7	22.3	15.6	70.1	64.5	58.6	51.9
Actuated g/C Ratio	0.28	0.22	0.37	0.19	0.14	0.61	0.56	0.51	0.45
v/c Ratio	0.35	0.25	0.14	0.08	0.68	0.48	0.35	0.04	0.47
Control Delay	32.4	39.0	4.7	27.7	58.8	15.3	16.6	10.7	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	39.0	4.7	27.7	58.8	15.3	16.6	10.7	25.1
LOS	C	D	A	C	E	B	B	B	C
Approach Delay		26.3			55.1		16.3		24.8
Approach LOS		C			E		B		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 24.2
 Intersection Capacity Utilization 63.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Background School PM Peak MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	103	90	23	170	203	689	18	735
v/c Ratio	0.35	0.25	0.14	0.08	0.68	0.48	0.35	0.04	0.47
Control Delay	32.4	39.0	4.7	27.7	58.8	15.3	16.6	10.7	25.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	39.0	4.7	27.7	58.8	15.3	16.6	10.7	25.1
Queue Length 50th (ft)	59	67	0	12	118	62	122	5	202
Queue Length 95th (ft)	92	109	29	29	182	122	247	20	312
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	332	420	702	312	313	471	1994	436	1583
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.25	0.13	0.07	0.54	0.43	0.35	0.04	0.46
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

























2019 Background School PM Peak MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	95	83	21	138	18	187	606	28	17	549	127
Future Volume (vph)	97	95	83	21	138	18	187	606	28	17	549	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1830		1770	3516		1761	3422	
Flt Permitted	0.38	1.00	1.00	0.69	1.00		0.26	1.00		0.39	1.00	
Satd. Flow (perm)	700	1863	1583	1286	1830		476	3516		722	3422	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	103	90	23	150	20	203	659	30	18	597	138
RTOR Reduction (vph)	0	0	61	0	4	0	0	2	0	0	15	0
Lane Group Flow (vph)	105	103	29	23	166	0	203	687	0	18	720	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	35.3	25.0	36.7	22.3	18.0		67.2	58.5		52.2	49.5	
Effective Green, g (s)	35.3	25.0	36.7	22.3	18.0		67.2	58.5		52.2	49.5	
Actuated g/C Ratio	0.31	0.22	0.32	0.19	0.16		0.58	0.51		0.45	0.43	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	320	405	587	267	286		409	1788		352	1472	
v/s Ratio Prot	c0.03	0.06	0.00	0.00	c0.09		c0.05	0.20		0.00	0.21	
v/s Ratio Perm	0.07		0.01	0.01			c0.24			0.02		
v/c Ratio	0.33	0.25	0.05	0.09	0.58		0.50	0.38		0.05	0.49	
Uniform Delay, d1	29.8	37.3	27.1	37.9	45.0		13.1	17.2		17.3	23.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.87	1.03	
Incremental Delay, d2	0.6	0.3	0.0	0.1	2.8		1.0	0.6		0.1	1.1	
Delay (s)	30.5	37.6	27.1	38.0	47.8		14.0	17.9		15.0	25.5	
Level of Service	C	D	C	D	D		B	B		B	C	
Approach Delay (s)		31.9			46.7			17.0			25.3	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	33	204	9	19	237	81	6	33	20	144	94	19	
Future Volume (Veh/h)	33	204	9	19	237	81	6	33	20	144	94	19	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	36	222	10	21	258	88	7	36	22	157	102	21	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	346			232			542	687	116	567	648	173	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	346			232			542	687	116	567	648	173	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98			98	90	98	56	72	98	
cM capacity (veh/h)	1210			1333			314	352	914	353	370	840	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	36	148	84	150	217	43	22	157	123				
Volume Left	36	0	0	21	0	7	0	157	0				
Volume Right	0	0	10	0	88	0	22	0	21				
cSH	1210	1700	1700	1333	1700	345	914	353	409				
Volume to Capacity	0.03	0.09	0.05	0.02	0.13	0.12	0.02	0.44	0.30				
Queue Length 95th (ft)	2	0	0	1	0	11	2	55	31				
Control Delay (s)	8.1	0.0	0.0	1.2	0.0	16.9	9.0	23.1	17.5				
Lane LOS	A			A		C	A	C	C				
Approach Delay (s)	1.1			0.5		14.2		20.7					
Approach LOS						B		C					
Intersection Summary													
Average Delay	7.3												
Intersection Capacity Utilization	40.3%			ICU Level of Service						A			
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
8: Sherrill Blvd & Park West Blvd

2019 Background School PM Peak MOB
Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	13	7	207	49	8	159	
Future Volume (Veh/h)	13	7	207	49	8	159	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	14	8	225	53	9	173	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	356	139			278		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	356	139			278		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	98	99			99		
cM capacity (veh/h)	611	884			1282		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	14	8	150	128	9	86	86
Volume Left	14	0	0	0	9	0	0
Volume Right	0	8	0	53	0	0	0
cSH	611	884	1700	1700	1282	1700	1700
Volume to Capacity	0.02	0.01	0.09	0.08	0.01	0.05	0.05
Queue Length 95th (ft)	2	1	0	0	1	0	0
Control Delay (s)	11.0	9.1	0.0	0.0	7.8	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.3		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			17.3%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Background School PM Peak MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	3	402	276	0	102	2
Future Volume (Veh/h)	3	402	276	0	102	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	437	300	0	111	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	300			524	150	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300			524	150	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			77	100	
cM capacity (veh/h)	1258			481	870	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	149	291	200	100	111	2
Volume Left	3	0	0	0	111	0
Volume Right	0	0	0	0	0	2
cSH	1258	1700	1700	1700	481	870
Volume to Capacity	0.00	0.17	0.12	0.06	0.23	0.00
Queue Length 95th (ft)	0	0	0	0	22	0
Control Delay (s)	0.2	0.0	0.0	0.0	14.7	9.1
Lane LOS	A				B	A
Approach Delay (s)	0.1	0.0			14.6	
Approach LOS					B	
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			25.5%	ICU Level of Service	A	
Analysis Period (min)	15					

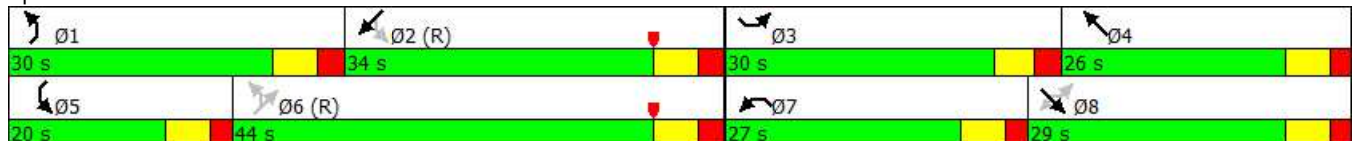
Timings
10: Sherrill Blvd & Dutchtown Rd

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	159	226	87	271	140	111	165	39	199
Future Volume (vph)	159	226	87	271	140	111	165	39	199
Turn Type	pm+pt	NA	Perm	Prot	NA	custom	NA	pm+pt	NA
Protected Phases	3	8		7	4	1		5	2
Permitted Phases	8		8			6	6	2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.5	14.5	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	34.1	20.2	20.2	15.6	21.9	63.5	55.1	56.9	49.5
Actuated g/C Ratio	0.28	0.17	0.17	0.13	0.18	0.53	0.46	0.47	0.41
v/c Ratio	0.44	0.78	0.15	0.66	0.48	0.21	0.18	0.08	0.21
Control Delay	30.9	65.1	0.5	56.9	47.4	15.9	14.0	15.5	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	65.1	0.5	56.9	47.4	15.9	14.0	15.5	21.7
LOS	C	E	A	E	D	B	B	B	C
Approach Delay		41.6			53.5		14.5		20.9
Approach LOS		D			D		B		C

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 34.2
 Intersection Capacity Utilization 54.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Background School PM Peak MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	173	246	95	295	162	121	291	42	298
v/c Ratio	0.44	0.78	0.15	0.66	0.48	0.21	0.18	0.08	0.21
Control Delay	30.9	65.1	0.5	56.9	47.4	15.9	14.0	15.5	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.9	65.1	0.5	56.9	47.4	15.9	14.0	15.5	21.7
Queue Length 50th (ft)	95	183	0	113	111	44	42	15	65
Queue Length 95th (ft)	137	266	0	155	174	88	82	37	114
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	514	363	704	600	353	687	1590	650	1425
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.68	0.13	0.49	0.46	0.18	0.18	0.06	0.21
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
10: Sherrill Blvd & Dutchtown Rd

2019 Background School PM Peak MOB
Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	159	226	87	271	140	9	111	165	103	39	199	75
Future Volume (vph)	159	226	87	271	140	9	111	165	103	39	199	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1845		1770	3335		1770	3393	
Flt Permitted	0.59	1.00	1.00	0.95	1.00		0.52	1.00		0.57	1.00	
Satd. Flow (perm)	1105	1863	2787	3433	1845		970	3335		1069	3393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	246	95	295	152	10	121	179	112	42	216	82
RTOR Reduction (vph)	0	0	79	0	2	0	0	62	0	0	25	0
Lane Group Flow (vph)	173	246	16	295	160	0	121	229	0	42	273	0
Turn Type	pm+pt	NA	Perm	Prot	NA		custom	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1			5	2	
Permitted Phases	8		8				6	6		2		
Actuated Green, G (s)	34.0	20.2	20.2	15.6	22.0		63.6	53.9		55.3	49.5	
Effective Green, g (s)	34.0	20.2	20.2	15.6	22.0		63.6	53.9		55.3	49.5	
Actuated g/C Ratio	0.28	0.17	0.17	0.13	0.18		0.53	0.45		0.46	0.41	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	389	313	469	446	338		578	1497		526	1399	
v/s Ratio Prot	0.05	c0.13		c0.09	0.09		c0.02			0.00	0.08	
v/s Ratio Perm	0.07		0.01				c0.09	0.07		0.03		
v/c Ratio	0.44	0.79	0.03	0.66	0.47		0.21	0.15		0.08	0.19	
Uniform Delay, d1	34.2	47.8	41.7	49.7	43.8		14.3	19.6		17.9	22.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	12.2	0.0	3.7	1.1		0.2	0.2		0.1	0.3	
Delay (s)	35.0	60.0	41.8	53.4	44.9		14.5	19.8		17.9	22.8	
Level of Service	C	E	D	D	D		B	B		B	C	
Approach Delay (s)		48.2			50.3			18.2			22.2	
Approach LOS		D			D			B			C	









Intersection Summary

HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

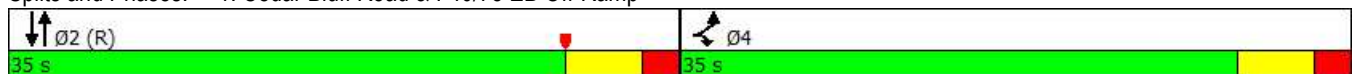
2019 Projected AM Peak w MOB
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	709	250	1035	1235
Future Volume (vph)	709	250	1035	1235
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	23.6	23.6	38.4	38.4
Actuated g/C Ratio	0.34	0.34	0.55	0.55
v/c Ratio	0.68	0.49	0.32	0.48
Control Delay	22.4	19.6	9.7	9.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.4	19.6	9.7	9.6
LOS	C	B	A	A
Approach Delay	21.8		9.7	9.6
Approach LOS	C		A	A

Intersection Summary





Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 64 (91%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.2
 Intersection Capacity Utilization 53.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected AM Peak w MOB
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	798	245	1125	1342
v/c Ratio	0.68	0.49	0.32	0.48
Control Delay	22.4	19.6	9.7	9.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	22.4	19.6	9.7	9.6
Queue Length 50th (ft)	148	83	70	109
Queue Length 95th (ft)	176	130	111	142
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1537	653	3511	2800
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.38	0.32	0.48
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected AM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	709	250	0	1035	1235	0
Future Volume (vph)	709	250	0	1035	1235	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.99	0.85		1.00	1.00	
Fl _t Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3464	1455		6408	5111	
Fl _t Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3464	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	771	272	0	1125	1342	0
RTOR Reduction (vph)	4	11	0	0	0	0
Lane Group Flow (vph)	794	234	0	1125	1342	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	21.6	21.6		36.4	36.4	
Effective Green, g (s)	23.6	23.6		38.4	38.4	
Actuated g/C Ratio	0.34	0.34		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1167	490		3515	2803	
v/s Ratio Prot	c0.23	0.16		0.18	c0.26	
v/s Ratio Perm						
v/c Ratio	0.68	0.48		0.32	0.48	
Uniform Delay, d ₁	20.0	18.3		8.7	9.7	
Progression Factor	1.00	1.00		1.00	0.87	
Incremental Delay, d ₂	1.3	0.3		0.2	0.5	
Delay (s)	21.3	18.6		8.9	9.0	
Level of Service	C	B		A	A	
Approach Delay (s)	20.6			8.9	9.0	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			53.4%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected AM Peak w MOB
Parkwest Medical Center

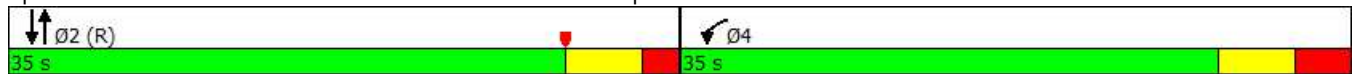
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	793	1478	551
Future Volume (vph)	793	1478	551
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	25.1	36.9	36.9
Actuated g/C Ratio	0.36	0.53	0.53
v/c Ratio	0.68	0.46	0.23
Control Delay	21.5	12.8	5.0
Queue Delay	0.0	0.0	0.0
Total Delay	21.5	12.8	5.0
LOS	C	B	A
Approach Delay	21.5	12.8	5.0
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 27 (39%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 53.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected AM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	862	1607	599
v/c Ratio	0.68	0.46	0.23
Control Delay	21.5	12.8	5.0
Queue Delay	0.0	0.0	0.0
Total Delay	21.5	12.8	5.0
Queue Length 50th (ft)	157	121	37
Queue Length 95th (ft)	187	170	m47
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1563	3504	2650
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.55	0.46	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected AM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↰↰		↑↑↑			↑↑↑
Traffic Volume (vph)	793	0	1478	0	0	551
Future Volume (vph)	793	0	1478	0	0	551
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	862	0	1607	0	0	599
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	862	0	1607	0	0	599
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	22.1		34.9			34.9
Effective Green, g (s)	25.1		36.9			36.9
Actuated g/C Ratio	0.36		0.53			0.53
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1265		3508			2653
v/s Ratio Prot	c0.24		c0.24			0.12
v/s Ratio Perm						
v/c Ratio	0.68		0.46			0.23
Uniform Delay, d1	19.1		10.3			8.9
Progression Factor	1.00		1.12			0.51
Incremental Delay, d2	1.2		0.4			0.2
Delay (s)	20.3		12.0			4.7
Level of Service	C		B			A
Approach Delay (s)	20.3		12.0			4.7
Approach LOS	C		B			A

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

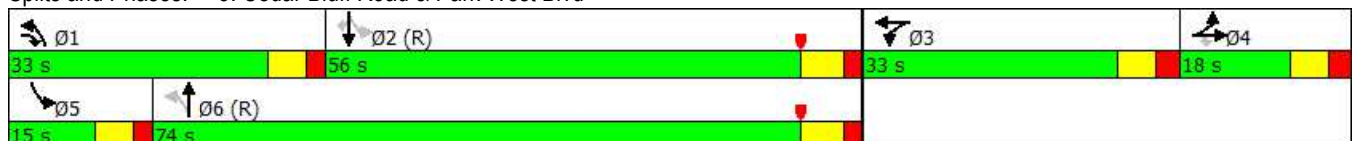
2019 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	42	65	203	143	341	307	655	36	575	65
Future Volume (vph)	42	65	203	143	341	307	655	36	575	65
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	18.0	18.0	33.0	33.0	33.0	33.0	74.0	15.0	56.0	56.0
Total Split (%)	12.9%	12.9%	23.6%	23.6%	23.6%	23.6%	52.9%	10.7%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.2	15.2	38.6	27.5	27.5	85.8	75.7	72.4	61.9	61.9
Actuated g/C Ratio	0.11	0.11	0.28	0.20	0.20	0.61	0.54	0.52	0.44	0.44
v/c Ratio	0.25	0.85	0.34	0.44	0.84	0.65	0.34	0.11	0.39	0.09
Control Delay	61.6	98.3	42.3	53.8	60.7	24.6	13.1	9.1	22.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	61.6	98.3	42.3	53.8	60.7	25.2	13.1	9.1	22.5	1.1
LOS	E	F	D	D	E	C	B	A	C	A
Approach Delay		69.9			59.4		16.3		19.7	
Approach LOS		E			E		B		B	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 33.4
 Intersection Capacity Utilization 66.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	46	151	141	139	584	334	907	39	625	71
v/c Ratio	0.25	0.85	0.34	0.44	0.84	0.65	0.34	0.11	0.39	0.09
Control Delay	61.6	98.3	42.3	53.8	60.7	24.6	13.1	9.1	22.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0
Total Delay	61.6	98.3	42.3	53.8	60.7	25.2	13.1	9.1	22.5	1.1
Queue Length 50th (ft)	39	145	109	121	256	171	155	8	215	1
Queue Length 95th (ft)	m82	#288	166	196	331	297	179	m17	274	12
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	187	178	515	335	732	596	2693	399	1596	809
Starvation Cap Reductn	0	0	0	0	0	72	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.85	0.27	0.41	0.80	0.64	0.34	0.10	0.39	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

























Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

3: Cedar Bluff Road & Park West Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	65	203	143	341	181	307	655	179	36	575	65
Future Volume (vph)	42	65	203	143	341	181	307	655	179	36	575	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1637	1512	1618	3338		1770	4921		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.30	1.00		0.30	1.00	1.00
Satd. Flow (perm)	1719	1637	1512	1618	3338		567	4921		555	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	71	221	155	371	197	334	712	195	39	625	71
RTOR Reduction (vph)	0	0	0	0	42	0	0	33	0	0	0	40
Lane Group Flow (vph)	46	151	141	139	542	0	334	874	0	39	625	31
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	12.2	12.2	30.0	25.0	25.0		83.3	72.0		64.8	59.5	59.5
Effective Green, g (s)	15.2	15.2	34.0	27.5	27.5		85.3	74.5		70.8	62.0	62.0
Actuated g/C Ratio	0.11	0.11	0.24	0.20	0.20		0.61	0.53		0.51	0.44	0.44
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	186	177	367	317	655		515	2618		351	1598	715
v/s Ratio Prot	0.03	c0.09	0.05	0.09	c0.16		c0.09	0.18		0.01	0.17	
v/s Ratio Perm			0.04				c0.30			0.05		0.02
v/c Ratio	0.25	0.85	0.38	0.44	0.83		0.65	0.33		0.11	0.39	0.04
Uniform Delay, d1	57.2	61.3	44.3	49.5	54.0		15.1	18.6		17.5	26.3	22.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.43	0.74		0.72	0.80	1.00
Incremental Delay, d2	0.5	30.4	0.5	0.7	8.3		2.3	0.3		0.1	0.6	0.1
Delay (s)	57.9	91.7	44.8	50.2	62.3		23.8	14.1		12.8	21.6	22.3
Level of Service	E	F	D	D	E		C	B		B	C	C
Approach Delay (s)		67.5			60.0			16.7			21.2	
Approach LOS		E			E			B			C	

Intersection Summary

HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	49	21	172	17	1	350	661	44	976
Future Volume (vph)	49	21	172	17	1	350	661	44	976
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	23.0	23.0	41.0	23.0	23.0	41.0	117.0	76.0	76.0
Total Split (%)	16.4%	16.4%	29.3%	16.4%	16.4%	29.3%	83.6%	54.3%	54.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.4	13.4	36.8		13.4	122.9	123.1	96.7	96.7
Actuated g/C Ratio	0.10	0.10	0.26		0.10	0.88	0.88	0.69	0.69
v/c Ratio	0.39	0.12	0.38		0.12	0.69	0.30	0.12	0.50
Control Delay	66.9	58.0	24.8		41.1	18.0	2.1	12.2	13.3
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	58.0	24.8		41.1	18.0	2.1	12.2	13.3
LOS	E	E	C		D	B	A	B	B
Approach Delay		36.2			41.1		6.7		13.2
Approach LOS		D			D		A		B

Intersection Summary

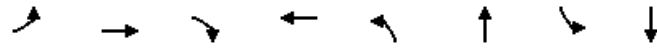
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 13 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.7
 Intersection Capacity Utilization 71.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	53	23	187	30	380	929	48	1243
v/c Ratio	0.39	0.12	0.38	0.12	0.69	0.30	0.12	0.50
Control Delay	66.9	58.0	24.8	41.1	18.0	2.1	12.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.9	58.0	24.8	41.1	18.0	2.1	12.2	13.3
Queue Length 50th (ft)	46	20	83	8	133	92	14	270
Queue Length 95th (ft)	90	47	127	24	m235	127	44	453
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	199	271	660	372	721	3048	394	2464
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.08	0.28	0.08	0.53	0.30	0.12	0.50

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	21	172	17	1	10	350	661	194	44	976	167
Future Volume (vph)	49	21	172	17	1	10	350	661	194	44	976	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.94		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3122		1906	3453		1761	3559	
Flt Permitted	0.74	1.00	1.00		0.81		0.17	1.00		0.31	1.00	
Satd. Flow (perm)	1434	1947	1655		2609		337	3453		570	3559	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	53	23	187	18	1	11	380	718	211	48	1061	182
RTOR Reduction (vph)	0	0	54	0	10	0	0	14	0	0	7	0
Lane Group Flow (vph)	53	23	133	0	20	0	380	915	0	48	1236	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	9.3	9.3	30.0		9.3		119.2	119.2		93.5	93.5	
Effective Green, g (s)	11.8	11.8	34.0		11.8		121.2	121.2		95.5	95.5	
Actuated g/C Ratio	0.08	0.08	0.24		0.08		0.87	0.87		0.68	0.68	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	120	164	401		219		546	2989		388	2427	
v/s Ratio Prot		0.01	0.05				c0.11	0.27			0.35	
v/s Ratio Perm	c0.04		0.03		0.01		c0.49			0.08		
v/c Ratio	0.44	0.14	0.33		0.09		0.70	0.31		0.12	0.51	
Uniform Delay, d1	61.0	59.4	43.7		59.2		15.2	1.7		7.7	10.8	
Progression Factor	1.00	1.00	1.00		1.00		1.17	1.10		1.00	1.00	
Incremental Delay, d2	2.6	0.4	0.4		0.2		3.4	0.3		0.7	0.8	
Delay (s)	63.6	59.8	44.0		59.3		21.3	2.1		8.4	11.6	
Level of Service	E	E	D		E		C	A		A	B	
Approach Delay (s)		49.3			59.3			7.7			11.5	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.7				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			71.1%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

	↙	↖	↗	↑	↘	↓	Ø4
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↗	↑↓	↘	↗↘	
Traffic Volume (vph)	165	122	2	800	395	612	
Future Volume (vph)	165	122	2	800	395	612	
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	
Protected Phases		1		2	1	6	4
Permitted Phases	8	8	2		6		
Detector Phase	8	1	2	2	1	6	
Switch Phase							
Minimum Initial (s)	8.0	6.0	20.0	20.0	6.0	20.0	8.0
Minimum Split (s)	22.0	11.5	26.5	26.5	11.5	26.5	22.0
Total Split (s)	30.0	22.0	48.0	48.0	22.0	70.0	30.0
Total Split (%)	30.0%	22.0%	48.0%	48.0%	22.0%	70.0%	30%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes	Yes		
Recall Mode	None	None	C-Min	C-Min	None	C-Min	None
Act Effect Green (s)	17.7	48.1	39.9	39.9	70.8	69.8	
Actuated g/C Ratio	0.18	0.48	0.40	0.40	0.71	0.70	
v/c Ratio	0.72	0.17	0.01	0.90	0.85	0.27	
Control Delay	54.4	8.7	11.5	31.8	44.3	6.5	
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0	
Total Delay	54.4	8.7	11.5	32.1	44.3	6.5	
LOS	D	A	B	C	D	A	
Approach Delay				32.1		21.3	
Approach LOS				C		C	

Intersection Summary







Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 26 (26%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 28.0
 Intersection Capacity Utilization 77.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

						
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	133	2	1257	429	667
v/c Ratio	0.72	0.17	0.01	0.90	0.85	0.27
Control Delay	54.4	8.7	11.5	31.8	44.3	6.5
Queue Delay	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay	54.4	8.7	11.5	32.1	44.3	6.5
Queue Length 50th (ft)	108	23	1	369	210	73
Queue Length 95th (ft)	170	57	m1	472	#466	121
Internal Link Dist (ft)				493		1729
Turn Bay Length (ft)	200		100		100	
Base Capacity (vph)	338	796	307	1451	506	2459
Starvation Cap Reductn	0	0	0	20	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.17	0.01	0.88	0.85	0.27

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	165	0	122	2	800	356	395	612	2	
Future Volume (vph)	0	0	0	165	0	122	2	800	356	395	612	2	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			0%			1%		
Total Lost time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Lane Util. Factor				1.00		1.00	1.00	0.95		1.00	0.95		
Fr _t				1.00		0.85	1.00	0.95		1.00	1.00		
Fl _t Protected				0.95		1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)				1770		1583	1770	3376		1761	3520		
Fl _t Permitted				0.76		1.00	0.40	1.00		0.09	1.00		
Satd. Flow (perm)				1410		1583	742	3376		164	3520		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	179	0	133	2	870	387	429	665	2	
RTOR Reduction (vph)	0	0	0	0	0	38	0	52	0	0	0	0	
Lane Group Flow (vph)	0	0	0	179	0	95	2	1205	0	429	667	0	
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA		
Protected Phases		4				1		2		1	6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)				17.7		42.2	39.8	39.8		69.8	69.8		
Effective Green, g (s)				17.7		42.2	39.8	39.8		69.8	69.8		
Actuated g/C Ratio				0.18		0.42	0.40	0.40		0.70	0.70		
Clearance Time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Vehicle Extension (s)				3.0		3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)				249		668	295	1343		505	2456		
v/s Ratio Prot						0.03		0.36		c0.21	0.19		
v/s Ratio Perm				c0.13		0.03	0.00			c0.39			
v/c Ratio				0.72		0.14	0.01	0.90		0.85	0.27		
Uniform Delay, d ₁				38.8		17.8	18.2	28.2		27.8	5.6		
Progression Factor				1.00		1.00	0.67	0.85		1.00	1.00		
Incremental Delay, d ₂				9.5		0.1	0.0	9.4		12.6	0.3		
Delay (s)				48.3		17.9	12.3	33.4		40.4	5.9		
Level of Service				D		B	B	C		D	A		
Approach Delay (s)		0.0			35.3			33.3			19.4		
Approach LOS		A			D			C			B		
Intersection Summary													
HCM 2000 Control Delay			27.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.85										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			77.9%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

Timings
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	114	68	66	50	176	291	654	31	597
Future Volume (vph)	114	68	66	50	176	291	654	31	597
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	32.5	12.0	29.5
Total Split (s)	13.0	22.0	20.0	13.0	22.0	20.0	52.0	13.0	45.0
Total Split (%)	13.0%	22.0%	20.0%	13.0%	22.0%	20.0%	52.0%	13.0%	45.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	27.4	19.4	39.2	22.1	14.8	57.7	49.6	44.4	37.5
Actuated g/C Ratio	0.27	0.19	0.39	0.22	0.15	0.58	0.50	0.44	0.38
v/c Ratio	0.44	0.20	0.11	0.17	0.77	0.84	0.41	0.09	0.67
Control Delay	31.5	36.8	2.2	26.0	59.1	37.0	18.4	8.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	36.8	2.2	26.0	59.1	37.0	18.4	8.9	24.8
LOS	C	D	A	C	E	D	B	A	C
Approach Delay		25.2			52.4		24.1		24.3
Approach LOS		C			D		C		C

Intersection Summary










Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 15 (15%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 27.3
 Intersection Capacity Utilization 76.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	74	72	54	213	316	721	34	871
v/c Ratio	0.44	0.20	0.11	0.17	0.77	0.84	0.41	0.09	0.67
Control Delay	31.5	36.8	2.2	26.0	59.1	37.0	18.4	8.9	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	36.8	2.2	26.0	59.1	37.0	18.4	8.9	24.8
Queue Length 50th (ft)	56	39	0	23	126	111	174	7	265
Queue Length 95th (ft)	107	84	15	55	#227	#243	211	m15	312
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	283	362	694	328	300	387	1816	389	1391
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	96	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.20	0.10	0.16	0.71	0.82	0.42	0.09	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	68	66	50	176	20	291	654	9	31	597	204
Future Volume (vph)	114	68	66	50	176	20	291	654	9	31	597	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1834		1770	3532		1761	3387	
Flt Permitted	0.35	1.00	1.00	0.71	1.00		0.16	1.00		0.38	1.00	
Satd. Flow (perm)	643	1863	1583	1320	1834		302	3532		700	3387	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	74	72	54	191	22	316	711	10	34	649	222
RTOR Reduction (vph)	0	0	48	0	4	0	0	1	0	0	35	0
Lane Group Flow (vph)	124	74	24	54	209	0	316	720	0	34	836	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	28.9	19.4	33.1	22.1	16.0		56.0	46.0		40.3	36.3	
Effective Green, g (s)	28.9	19.4	33.1	22.1	16.0		56.0	46.0		40.3	36.3	
Actuated g/C Ratio	0.29	0.19	0.33	0.22	0.16		0.56	0.46		0.40	0.36	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	292	361	618	319	293		370	1624		324	1229	
v/s Ratio Prot	c0.04	0.04	0.01	0.01	c0.11		c0.12	0.20		0.00	0.25	
v/s Ratio Perm	c0.08		0.01	0.03			c0.36			0.04		
v/c Ratio	0.42	0.20	0.04	0.17	0.71		0.85	0.44		0.10	0.68	
Uniform Delay, d1	27.6	33.8	22.7	31.3	39.8		17.5	18.3		18.2	26.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.78	0.88	
Incremental Delay, d2	1.0	0.3	0.0	0.3	8.0		17.2	0.9		0.1	3.0	
Delay (s)	28.6	34.1	22.7	31.5	47.8		34.7	19.2		14.4	26.6	
Level of Service	C	C	C	C	D		C	B		B	C	
Approach Delay (s)		28.5			44.5			23.9			26.2	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	51	120	15	41	437	199	4	25	4	92	233	31
Future Volume (Veh/h)	51	120	15	41	437	199	4	25	4	92	233	31
Sign Control		Free			Free			Stop			Stop	
Grade		-9%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	55	130	16	45	475	216	4	27	4	100	253	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									40			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					1142							
pX, platoon unblocked												
vC, conflicting volume	691			146			736	1029	73	862	929	346
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	691			146			736	1029	73	862	929	346
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			97			0	87	100	52	0	95
cM capacity (veh/h)	900			1434			0	211	974	209	242	651
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2				
Volume Total	55	87	59	282	454	35	100	287				
Volume Left	55	0	0	45	0	4	100	0				
Volume Right	0	0	16	0	216	4	0	34				
cSH	900	1700	1700	1434	1700	208	209	261				
Volume to Capacity	0.06	0.05	0.03	0.03	0.27	0.17	0.48	1.10				
Queue Length 95th (ft)	5	0	0	2	0	15	59	302				
Control Delay (s)	9.3	0.0	0.0	1.4	0.0	26.2	37.2	126.1				
Lane LOS	A			A		D	E	F				
Approach Delay (s)	2.5			0.6		26.2	103.1					
Approach LOS						D	F					
Intersection Summary												
Average Delay			30.7									
Intersection Capacity Utilization			47.6%		ICU Level of Service			A				
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Projected AM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	26	9	189	30	16	330	
Future Volume (Veh/h)	26	9	189	30	16	330	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	28	10	205	33	17	359	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	435	119			238		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	435	119			238		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	95	99			99		
cM capacity (veh/h)	542	910			1326		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	28	10	137	101	17	180	180
Volume Left	28	0	0	0	17	0	0
Volume Right	0	10	0	33	0	0	0
cSH	542	910	1700	1700	1326	1700	1700
Volume to Capacity	0.05	0.01	0.08	0.06	0.01	0.11	0.11
Queue Length 95th (ft)	4	1	0	0	1	0	0
Control Delay (s)	12.0	9.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.2		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.9				
Intersection Capacity Utilization			22.8%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Projected AM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	2	291	484	18	363	44
Future Volume (Veh/h)	2	291	484	18	363	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	316	526	20	395	48
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	546			698	273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	546			698	273	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			0	93	
cM capacity (veh/h)	1019			374	725	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	107	211	351	195	395	48
Volume Left	2	0	0	0	395	0
Volume Right	0	0	0	20	0	48
cSH	1019	1700	1700	1700	374	725
Volume to Capacity	0.00	0.12	0.21	0.11	1.06	0.07
Queue Length 95th (ft)	0	0	0	0	339	5
Control Delay (s)	0.2	0.0	0.0	0.0	96.2	10.3
Lane LOS	A				F	B
Approach Delay (s)	0.1	0.0			86.9	
Approach LOS					F	
Intersection Summary						
Average Delay			29.5			
Intersection Capacity Utilization			40.7%	ICU Level of Service	A	
Analysis Period (min)	15					

Timings
10: Sherrill Blvd & Dutchtown Rd

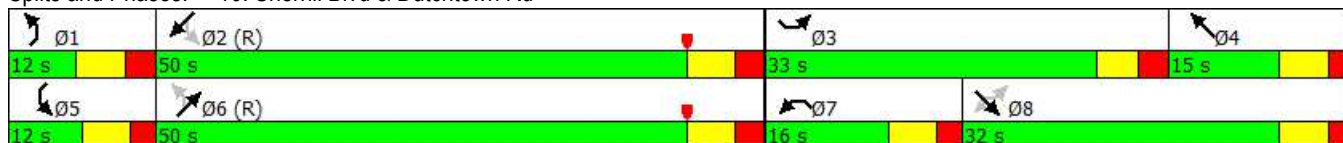
2019 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	320	349	286	212	82	109	304	14	357
Future Volume (vph)	320	349	286	212	82	109	304	14	357
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	33.0	32.0	32.0	16.0	15.0	12.0	50.0	12.0	50.0
Total Split (%)	30.0%	29.1%	29.1%	14.5%	13.6%	10.9%	45.5%	10.9%	45.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	40.8	24.9	24.9	9.9	13.0	54.1	51.9	50.8	44.5
Actuated g/C Ratio	0.37	0.23	0.23	0.09	0.12	0.49	0.47	0.46	0.40
v/c Ratio	0.69	0.90	0.36	0.75	0.45	0.31	0.31	0.03	0.39
Control Delay	34.9	66.3	5.1	64.4	51.8	17.1	15.9	13.8	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	66.3	5.1	64.4	51.8	17.1	15.9	13.8	21.2
LOS	C	E	A	E	D	B	B	B	C
Approach Delay		37.4			60.7		16.2		21.0
Approach LOS		D			E		B		C

Intersection Summary










Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 85 (77%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 31.6
 Intersection Capacity Utilization 66.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Projected AM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	348	379	311	230	98	118	500	15	556
v/c Ratio	0.69	0.90	0.36	0.75	0.45	0.31	0.31	0.03	0.39
Control Delay	34.9	66.3	5.1	64.4	51.8	17.1	15.9	13.8	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	66.3	5.1	64.4	51.8	17.1	15.9	13.8	21.2
Queue Length 50th (ft)	187	258	0	82	62	43	81	5	125
Queue Length 95th (ft)	278	#421	38	#136	#138	75	144	16	173
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	545	440	896	312	220	379	1636	451	1410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.86	0.35	0.74	0.45	0.31	0.31	0.03	0.39

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Projected AM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	320	349	286	212	82	8	109	304	156	14	357	155
Future Volume (vph)	320	349	286	212	82	8	109	304	156	14	357	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1837		1770	3359		1770	3379	
Flt Permitted	0.47	1.00	1.00	0.95	1.00		0.35	1.00		0.47	1.00	
Satd. Flow (perm)	884	1863	2787	3433	1837		655	3359		868	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	379	311	230	89	9	118	330	170	15	388	168
RTOR Reduction (vph)	0	0	241	0	4	0	0	56	0	0	43	0
Lane Group Flow (vph)	348	379	70	230	94	0	118	444	0	15	513	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	40.8	24.9	24.9	9.9	13.0		54.0	48.3		46.9	44.5	
Effective Green, g (s)	40.8	24.9	24.9	9.9	13.0		54.0	48.3		46.9	44.5	
Actuated g/C Ratio	0.37	0.23	0.23	0.09	0.12		0.49	0.44		0.43	0.40	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	503	421	630	308	217		379	1474		389	1366	
v/s Ratio Prot	c0.14	c0.20		0.07	0.05		c0.02	0.13		0.00	c0.15	
v/s Ratio Perm	0.12		0.03				c0.14			0.02		
v/c Ratio	0.69	0.90	0.11	0.75	0.44		0.31	0.30		0.04	0.38	
Uniform Delay, d1	27.3	41.3	33.8	48.8	45.1		15.8	19.9		18.3	23.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	21.8	0.1	9.5	1.4		0.5	0.5		0.0	0.8	
Delay (s)	31.4	63.2	33.9	58.3	46.5		16.3	20.5		18.3	23.8	
Level of Service	C	E	C	E	D		B	C		B	C	
Approach Delay (s)		43.7			54.8			19.7			23.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

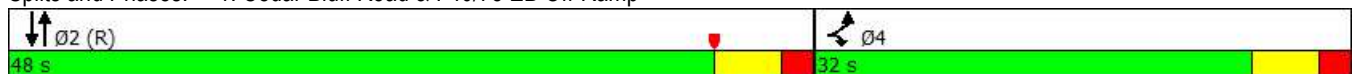
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	499	458	1261	1145
Future Volume (vph)	499	458	1261	1145
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effect Green (s)	23.1	23.1	48.9	48.9
Actuated g/C Ratio	0.29	0.29	0.61	0.61
v/c Ratio	0.70	0.72	0.35	0.40
Control Delay	26.9	30.3	8.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.9	30.3	8.5	9.5
LOS	C	C	A	A
Approach Delay	28.0		8.5	9.5
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 14.4
 Intersection Capacity Utilization 47.8%
 Analysis Period (min) 15





Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected PM Peak w MOB
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	711	329	1371	1245
v/c Ratio	0.70	0.72	0.35	0.40
Control Delay	26.9	30.3	8.5	9.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	26.9	30.3	8.5	9.5
Queue Length 50th (ft)	151	136	88	132
Queue Length 95th (ft)	190	217	129	163
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1219	543	3915	3122
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.58	0.61	0.35	0.40
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected PM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	499	458	0	1261	1145	0
Future Volume (vph)	499	458	0	1261	1145	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3391	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3391	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	498	0	1371	1245	0
RTOR Reduction (vph)	37	37	0	0	0	0
Lane Group Flow (vph)	674	292	0	1371	1245	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	21.1	21.1		46.9	46.9	
Effective Green, g (s)	23.1	23.1		48.9	48.9	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	979	420		3916	3124	
v/s Ratio Prot	0.20	c0.20		0.21	c0.24	
v/s Ratio Perm						
v/c Ratio	0.69	0.70		0.35	0.40	
Uniform Delay, d ₁	25.3	25.3		7.7	8.0	
Progression Factor	1.00	1.00		1.00	1.07	
Incremental Delay, d ₂	1.6	4.0		0.2	0.3	
Delay (s)	26.9	29.3		7.9	8.9	
Level of Service	C	C		A	A	
Approach Delay (s)	27.7			7.9	8.9	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			13.9	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.49			
Actuated Cycle Length (s)			80.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization			47.8%	ICU Level of Service	A	
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected PM Peak w MOB
Parkwest Medical Center

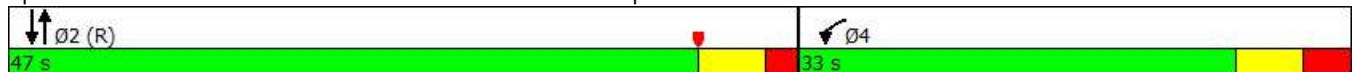
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	775	1269	719
Future Volume (vph)	775	1269	719
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	26.0	46.0	46.0
Actuated g/C Ratio	0.32	0.58	0.58
v/c Ratio	0.73	0.36	0.27
Control Delay	27.8	7.3	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.3	8.6
LOS	C	A	A
Approach Delay	27.8	7.3	8.6
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 13.4
 Intersection Capacity Utilization 47.8%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp












Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	842	1379	782
v/c Ratio	0.73	0.36	0.27
Control Delay	27.8	7.3	8.6
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.3	8.6
Queue Length 50th (ft)	185	79	101
Queue Length 95th (ft)	239	90	74
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	3823	2891
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.66	0.36	0.27
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected PM Peak w MOB
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	775	0	1269	0	0	719
Future Volume (vph)	775	0	1269	0	0	719
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	842	0	1379	0	0	782
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	842	0	1379	0	0	782
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	23.0		44.0			44.0
Effective Green, g (s)	26.0		46.0			46.0
Actuated g/C Ratio	0.32		0.58			0.58
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1147		3826			2894
v/s Ratio Prot	c0.24		c0.21			0.16
v/s Ratio Perm						
v/c Ratio	0.73		0.36			0.27
Uniform Delay, d1	23.9		9.1			8.6
Progression Factor	1.00		0.73			0.94
Incremental Delay, d2	2.1		0.2			0.2
Delay (s)	26.1		6.9			8.3
Level of Service	C		A			A
Approach Delay (s)	26.1		6.9			8.3
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			12.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.50			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

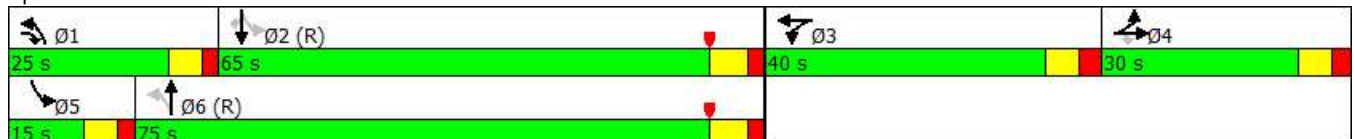
2019 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	62	21	300	255	65	154	506	49	855	26
Future Volume (vph)	62	21	300	255	65	154	506	49	855	26
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	24.9	24.9	42.2	25.0	25.0	98.5	87.9	92.0	80.8	80.8
Actuated g/C Ratio	0.16	0.16	0.26	0.16	0.16	0.62	0.55	0.58	0.50	0.50
v/c Ratio	0.25	0.73	0.43	0.70	0.54	0.48	0.22	0.11	0.51	0.03
Control Delay	60.8	82.0	51.4	78.1	37.9	21.4	14.2	13.4	25.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	82.0	51.4	78.1	37.9	21.4	14.2	13.4	25.1	0.1
LOS	E	F	D	E	D	C	B	B	C	A
Approach Delay		65.9			51.8		15.8		23.8	
Approach LOS		E			D		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 33.2
 Intersection Capacity Utilization 62.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2019 Projected PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	67	176	173	177	336	167	616	53	929	28
v/c Ratio	0.25	0.73	0.43	0.70	0.54	0.48	0.22	0.11	0.51	0.03
Control Delay	60.8	82.0	51.4	78.1	37.9	21.4	14.2	13.4	25.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	82.0	51.4	78.1	37.9	21.4	14.2	13.4	25.1	0.1
Queue Length 50th (ft)	62	186	158	195	103	78	120	19	268	0
Queue Length 95th (ft)	110	274	222	275	150	175	160	41	322	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	295	266	466	364	831	413	2755	510	1823	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.66	0.37	0.49	0.40	0.40	0.22	0.10	0.51	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Projected PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	21	300	255	65	152	154	506	61	49	855	26
Future Volume (vph)	62	21	300	255	65	152	154	506	61	49	855	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1547	1512	1618	3214		1770	5004		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.99		0.20	1.00		0.40	1.00	1.00
Satd. Flow (perm)	1719	1547	1512	1618	3214		372	5004		742	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	23	326	277	71	165	167	550	66	53	929	28
RTOR Reduction (vph)	0	0	0	0	119	0	0	8	0	0	0	14
Lane Group Flow (vph)	67	176	173	177	217	0	167	608	0	53	929	14
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	21.9	21.9	33.7	22.5	22.5		95.9	84.1		84.3	78.3	78.3
Effective Green, g (s)	24.9	24.9	37.7	25.0	25.0		98.1	86.6		90.3	80.8	80.8
Actuated g/C Ratio	0.16	0.16	0.24	0.16	0.16		0.61	0.54		0.56	0.50	0.50
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	267	240	356	252	502		348	2708		475	1823	815
v/s Ratio Prot	0.04	c0.11	c0.04	c0.11	0.07		c0.04	0.12		0.01	c0.26	
v/s Ratio Perm			0.07				0.25			0.06		0.01
v/c Ratio	0.25	0.73	0.49	0.70	0.43		0.48	0.22		0.11	0.51	0.02
Uniform Delay, d1	59.4	64.4	52.8	64.0	61.1		17.1	19.2		15.7	26.4	19.8
Progression Factor	1.01	1.00	1.01	1.00	1.00		1.14	0.70		0.89	0.83	1.00
Incremental Delay, d2	0.4	10.4	0.8	8.0	0.4		0.7	0.2		0.1	1.0	0.0
Delay (s)	60.1	75.0	53.9	71.9	61.5		20.2	13.6		14.0	23.0	19.8
Level of Service	E	E	D	E	E		C	B		B	C	B
Approach Delay (s)		63.8			65.1			15.0			22.4	
Approach LOS		E			E			B			C	

Intersection Summary		
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.58	C
Actuated Cycle Length (s)	160.0	Sum of lost time (s)
Intersection Capacity Utilization	62.2%	15.5
Analysis Period (min)	15	ICU Level of Service
		B

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

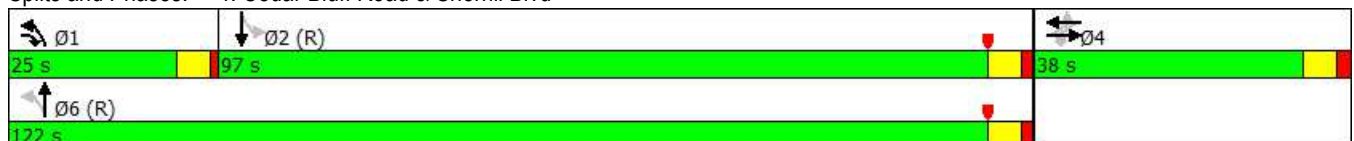
2019 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	156	3	159	83	0	110	719	7	955
Future Volume (vph)	156	3	159	83	0	110	719	7	955
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.4	27.4	40.3		27.4	126.1	125.6	113.2	113.2
Actuated g/C Ratio	0.17	0.17	0.25		0.17	0.79	0.78	0.71	0.71
v/c Ratio	0.75	0.01	0.35		0.20	0.27	0.29	0.02	0.41
Control Delay	82.1	51.0	20.2		27.3	5.2	3.6	9.1	10.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	51.0	20.2		27.3	5.2	3.6	9.1	10.9
LOS	F	D	C		C	A	A	A	B
Approach Delay		50.9			27.3		3.8		10.9
Approach LOS		D			C		A		B

Intersection Summary









Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 62.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected PM Peak w MOB
Parkwest Medical Center

								
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	170	3	173	95	120	799	8	1050
v/c Ratio	0.75	0.01	0.35	0.20	0.27	0.29	0.02	0.41
Control Delay	82.1	51.0	20.2	27.3	5.2	3.6	9.1	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	51.0	20.2	27.3	5.2	3.6	9.1	10.9
Queue Length 50th (ft)	171	3	57	20	16	58	2	222
Queue Length 95th (ft)	249	13	118	46	27	73	10	315
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	287	419	616	577	556	2799	459	2568
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.01	0.28	0.16	0.22	0.29	0.02	0.41
Intersection Summary								

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	3	159	83	0	5	110	719	16	7	955	11
Future Volume (vph)	156	3	159	83	0	5	110	719	16	7	955	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3223		1906	3563		1761	3633	
Flt Permitted	0.69	1.00	1.00		0.74		0.23	1.00		0.35	1.00	
Satd. Flow (perm)	1333	1947	1655		2490		452	3563		648	3633	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	3	173	90	0	5	120	782	17	8	1038	12
RTOR Reduction (vph)	0	0	80	0	42	0	0	1	0	0	0	0
Lane Group Flow (vph)	170	3	93	0	53	0	120	798	0	8	1050	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	24.9	24.9	32.4		24.9		123.6	123.6		111.1	111.1	
Effective Green, g (s)	27.4	27.4	36.4		27.4		125.6	125.6		113.1	113.1	
Actuated g/C Ratio	0.17	0.17	0.23		0.17		0.78	0.78		0.71	0.71	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	228	333	376		426		441	2796		458	2568	
v/s Ratio Prot		0.00	0.01				0.02	c0.22			c0.29	
v/s Ratio Perm	c0.13		0.04		0.02		0.20			0.01		
v/c Ratio	0.75	0.01	0.25		0.12		0.27	0.29		0.02	0.41	
Uniform Delay, d1	63.0	55.0	50.6		56.1		5.6	4.8		7.0	9.7	
Progression Factor	1.00	1.00	1.00		1.00		0.82	0.65		1.00	1.00	
Incremental Delay, d2	12.4	0.0	0.3		0.1		0.2	0.3		0.1	0.5	
Delay (s)	75.4	55.0	50.8		56.3		4.8	3.4		7.0	10.2	
Level of Service	E	E	D		E		A	A		A	B	
Approach Delay (s)		63.0			56.3			3.6			10.1	
Approach LOS		E			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			17.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			62.4%				ICU Level of Service				B	
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	76	49	841	55	966	
Future Volume (vph)	76	49	841	55	966	
Turn Type	Perm	Over	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8			6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	14.0	11.5	26.5	11.5	26.5	14.0
Total Split (s)	25.0	20.0	70.0	20.0	90.0	25.0
Total Split (%)	21.7%	17.4%	60.9%	17.4%	78.3%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	6.5	84.6	94.0	94.3	
Actuated g/C Ratio	0.11	0.06	0.74	0.82	0.82	
v/c Ratio	0.55	0.30	0.46	0.16	0.36	
Control Delay	61.8	7.4	6.5	4.0	4.1	
Queue Delay	0.0	0.0	0.1	0.0	0.0	
Total Delay	61.8	7.4	6.6	4.0	4.1	
LOS	E	A	A	A	A	
Approach Delay			6.6		4.1	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay: 7.4
 Intersection Capacity Utilization 58.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected PM Peak w MOB
Parkwest Medical Center
























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	83	53	1162	60	1050
v/c Ratio	0.55	0.30	0.46	0.16	0.36
Control Delay	61.8	7.4	6.5	4.0	4.1
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	61.8	7.4	6.6	4.0	4.1
Queue Length 50th (ft)	59	0	167	8	102
Queue Length 95th (ft)	107	13	191	20	160
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	232	278	2533	474	2888
Starvation Cap Reductn	0	0	280	0	0
Spillback Cap Reductn	0	0	0	0	83
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	0.19	0.52	0.13	0.37

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	76	0	49	0	841	228	55	966	0
Future Volume (vph)	0	0	0	76	0	49	0	841	228	55	966	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3426		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.20	1.00	
Satd. Flow (perm)				1410		1583		3426		366	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	83	0	53	0	914	248	60	1050	0
RTOR Reduction (vph)	0	0	0	0	0	51	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	83	0	2	0	1148	0	60	1050	0
Turn Type	Perm			Perm		Over	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)				10.7		5.3		81.0		91.8	91.8	
Effective Green, g (s)				10.7		5.3		81.0		91.8	91.8	
Actuated g/C Ratio				0.09		0.05		0.70		0.80	0.80	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				131		72		2413		356	2811	
v/s Ratio Prot						0.00		c0.34		0.01	c0.30	
v/s Ratio Perm				c0.06						0.13		
v/c Ratio				0.63		0.03		0.48		0.17	0.37	
Uniform Delay, d ₁				50.3		52.4		7.6		3.8	3.3	
Progression Factor				1.00		1.00		0.73		1.00	1.00	
Incremental Delay, d ₂				9.6		0.2		0.6		0.2	0.4	
Delay (s)				59.9		52.6		6.1		4.0	3.7	
Level of Service				E		D		A		A	A	
Approach Delay (s)		0.0			57.0			6.1			3.7	
Approach LOS		A			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.9									
HCM 2000 Level of Service										A		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			115.0							18.0		
Sum of lost time (s)												
Intersection Capacity Utilization			58.7%							B		
ICU Level of Service												
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

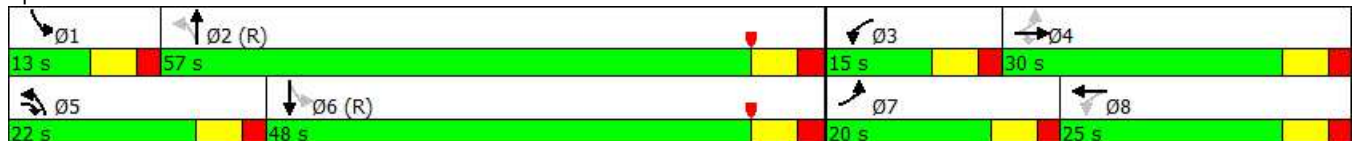
2019 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	196	92	53	22	147	209	614	21	881
Future Volume (vph)	196	92	53	22	147	209	614	21	881
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	35.7	27.8	47.5	22.8	16.0	67.3	59.3	53.9	47.1
Actuated g/C Ratio	0.31	0.24	0.41	0.20	0.14	0.59	0.52	0.47	0.41
v/c Ratio	0.65	0.22	0.08	0.08	0.75	0.76	0.39	0.06	0.75
Control Delay	40.3	37.6	1.8	27.5	62.7	37.2	19.2	11.2	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	40.3	37.6	1.8	27.5	62.7	37.2	19.2	11.2	35.3
LOS	D	D	A	C	E	D	B	B	D
Approach Delay		33.6			58.8		23.6		34.8
Approach LOS		C			E		C		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 32.6
 Intersection Capacity Utilization 80.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected PM Peak w MOB
Parkwest Medical Center























									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	213	100	58	24	193	227	702	23	1069
v/c Ratio	0.65	0.22	0.08	0.08	0.75	0.76	0.39	0.06	0.75
Control Delay	40.3	37.6	1.8	27.5	62.7	37.2	19.2	11.2	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	40.3	37.6	1.8	27.5	62.7	37.2	19.2	11.2	35.3
Queue Length 50th (ft)	121	62	0	12	132	93	176	9	405
Queue Length 95th (ft)	184	111	11	31	209	#187	238	17	472
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	332	449	735	318	306	330	1814	402	1426
Starvation Cap Reductn	0	0	0	0	0	0	0	0	95
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.22	0.08	0.08	0.63	0.69	0.39	0.06	0.80

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected PM Peak w MOB
Parkwest Medical Center






















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	92	53	22	147	30	209	614	32	21	881	102
Future Volume (vph)	196	92	53	22	147	30	209	614	32	21	881	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1815		1770	3513		1761	3467	
Flt Permitted	0.33	1.00	1.00	0.69	1.00		0.10	1.00		0.38	1.00	
Satd. Flow (perm)	622	1863	1583	1290	1815		189	3513		713	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	213	100	58	24	160	33	227	667	35	23	958	111
RTOR Reduction (vph)	0	0	37	0	7	0	0	3	0	0	7	0
Lane Group Flow (vph)	213	100	21	24	186	0	227	699	0	23	1062	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	38.1	27.8	41.5	22.7	18.4		64.4	54.5		48.6	44.7	
Effective Green, g (s)	38.1	27.8	41.5	22.7	18.4		64.4	54.5		48.6	44.7	
Actuated g/C Ratio	0.33	0.24	0.36	0.20	0.16		0.56	0.47		0.42	0.39	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	342	450	653	272	290		294	1664		336	1347	
v/s Ratio Prot	c0.07	0.05	0.00	0.00	0.10		c0.09	0.20		0.00	0.31	
v/s Ratio Perm	c0.13		0.01	0.01			c0.34			0.03		
v/c Ratio	0.62	0.22	0.03	0.09	0.64		0.77	0.42		0.07	0.79	
Uniform Delay, d1	29.9	34.9	23.8	37.5	45.2		24.7	19.9		19.4	31.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.89	1.04	
Incremental Delay, d2	3.5	0.3	0.0	0.1	4.8		11.9	0.8		0.1	4.5	
Delay (s)	33.5	35.2	23.8	37.7	50.0		36.6	20.6		17.3	36.6	
Level of Service	C	D	C	D	D		D	C		B	D	
Approach Delay (s)		32.4			48.7			24.5			36.2	
Approach LOS		C			D			C			D	

Intersection Summary

HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
 7: Park 40 Blvd & Sherrill Blvd

2019 Projected PM Peak w MOB
 Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Traffic Volume (veh/h)	33	344	8	20	182	73	19	36	17	158	106	16	
Future Volume (Veh/h)	33	344	8	20	182	73	19	36	17	158	106	16	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	36	374	9	22	198	79	21	39	18	172	115	17	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	277			383			668	772	192	578	736	138	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	277			383			668	772	192	578	736	138	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98			91	88	98	50	65	98	
cM capacity (veh/h)	1283			1172			237	314	818	341	329	884	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	36	249	134	121	178	60	18	172	132				
Volume Left	36	0	0	22	0	21	0	172	0				
Volume Right	0	0	9	0	79	0	18	0	17				
cSH	1283	1700	1700	1172	1700	282	818	341	358				
Volume to Capacity	0.03	0.15	0.08	0.02	0.10	0.21	0.02	0.50	0.37				
Queue Length 95th (ft)	2	0	0	1	0	20	2	68	41				
Control Delay (s)	7.9	0.0	0.0	1.6	0.0	21.2	9.5	25.9	20.8				
Lane LOS	A			A		C	A	D	C				
Approach Delay (s)	0.7			0.7		18.5		23.7					
Approach LOS						C		C					
Intersection Summary													
Average Delay	8.3												
Intersection Capacity Utilization	43.1%			ICU Level of Service					A				
Analysis Period (min)	15												

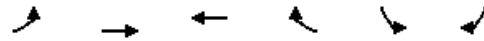
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Projected PM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	16	9	250	127	12	140	
Future Volume (Veh/h)	16	9	250	127	12	140	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	17	10	272	138	13	152	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	443	205			410		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	443	205			410		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	537	802			1145		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	17	10	181	229	13	76	76
Volume Left	17	0	0	0	13	0	0
Volume Right	0	10	0	138	0	0	0
cSH	537	802	1700	1700	1145	1700	1700
Volume to Capacity	0.03	0.01	0.11	0.13	0.01	0.04	0.04
Queue Length 95th (ft)	2	1	0	0	1	0	0
Control Delay (s)	11.9	9.5	0.0	0.0	8.2	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.0		0.0		0.6		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			21.0%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Projected PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	353	243	0	30	0
Future Volume (Veh/h)	0	353	243	0	30	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	384	264	0	33	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	264			456	132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	264			456	132	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			94	100	
cM capacity (veh/h)	1297			533	893	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	128	256	176	88	33	0
Volume Left	0	0	0	0	33	0
Volume Right	0	0	0	0	0	0
cSH	1297	1700	1700	1700	533	1700
Volume to Capacity	0.00	0.15	0.10	0.05	0.06	0.00
Queue Length 95th (ft)	0	0	0	0	5	0
Control Delay (s)	0.0	0.0	0.0	0.0	12.2	0.0
Lane LOS					B	A
Approach Delay (s)	0.0	0.0		12.2		
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			19.8%	ICU Level of Service	A	
Analysis Period (min)	15					

Timings
10: Sherrill Blvd & Dutchtown Rd

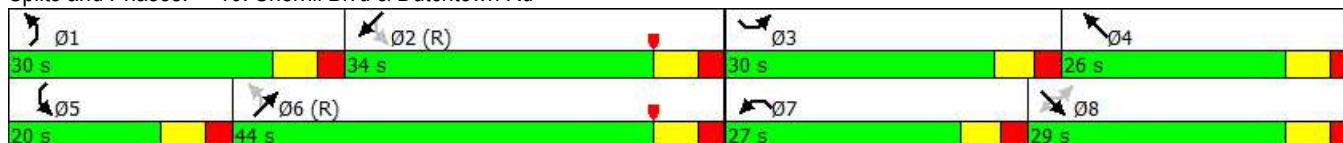
2019 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	321	171	107	407	238	261	596	12	433
Future Volume (vph)	321	171	107	407	238	261	596	12	433
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	44.8	22.6	22.6	19.3	19.8	59.6	54.3	41.8	35.7
Actuated g/C Ratio	0.37	0.19	0.19	0.16	0.16	0.50	0.45	0.35	0.30
v/c Ratio	0.88	0.53	0.17	0.80	0.90	0.64	0.48	0.04	0.50
Control Delay	53.0	49.9	0.5	60.1	79.6	25.8	25.4	18.8	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	49.9	0.5	60.1	79.6	25.8	25.4	18.8	37.8
LOS	D	D	A	E	E	C	C	B	D
Approach Delay		42.8			67.6		25.5		37.3
Approach LOS		D			E		C		D

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 41.7
 Intersection Capacity Utilization 80.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	349	186	116	442	274	284	762	13	524
v/c Ratio	0.88	0.53	0.17	0.80	0.90	0.64	0.48	0.04	0.50
Control Delay	53.0	49.9	0.5	60.1	79.6	25.8	25.4	18.8	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.0	49.9	0.5	60.1	79.6	25.8	25.4	18.8	37.8
Queue Length 50th (ft)	194	130	0	170	208	133	196	5	177
Queue Length 95th (ft)	#346	207	0	226	#365	198	308	17	252
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	424	361	706	600	314	510	1576	400	1044
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.52	0.16	0.74	0.87	0.56	0.48	0.03	0.50

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Projected PM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	321	171	107	407	238	14	261	596	105	12	433	49
Future Volume (vph)	321	171	107	407	238	14	261	596	105	12	433	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3460		1770	3486	
Flt Permitted	0.20	1.00	1.00	0.95	1.00		0.29	1.00		0.36	1.00	
Satd. Flow (perm)	380	1863	2787	3433	1847		546	3460		676	3486	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	186	116	442	259	15	284	648	114	13	471	53
RTOR Reduction (vph)	0	0	94	0	2	0	0	10	0	0	6	0
Lane Group Flow (vph)	349	186	22	442	272	0	284	752	0	13	518	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	44.7	22.6	22.6	19.3	19.8		59.6	50.5		38.4	35.8	
Effective Green, g (s)	44.7	22.6	22.6	19.3	19.8		59.6	50.5		38.4	35.8	
Actuated g/C Ratio	0.37	0.19	0.19	0.16	0.17		0.50	0.42		0.32	0.30	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	397	350	524	552	304		447	1456		240	1039	
v/s Ratio Prot	c0.16	0.10		0.13	0.15		c0.09	0.22		0.00	0.15	
v/s Ratio Perm	c0.17		0.01				c0.22			0.02		
v/c Ratio	0.88	0.53	0.04	0.80	0.90		0.64	0.52		0.05	0.50	
Uniform Delay, d1	30.8	43.9	39.8	48.5	49.1		19.6	25.7		27.9	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	19.3	1.6	0.0	8.2	26.7		2.9	1.3		0.1	1.7	
Delay (s)	50.0	45.5	39.9	56.7	75.8		22.5	27.0		28.0	36.4	
Level of Service	D	D	D	E	E		C	C		C	D	
Approach Delay (s)		46.9			64.0			25.8			36.2	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↖	↑↑↑	↑↑↑
Traffic Volume (vph)	396	441	1264	1081
Future Volume (vph)	396	441	1264	1081
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	27.0	27.0	43.0	43.0
Total Split (%)	38.6%	38.6%	61.4%	61.4%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	18.6	18.6	43.4	43.4
Actuated g/C Ratio	0.27	0.27	0.62	0.62
v/c Ratio	0.66	0.66	0.35	0.37
Control Delay	23.6	24.8	7.2	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	24.8	7.2	7.0
LOS	C	C	A	A
Approach Delay	24.0		7.2	7.0
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 40 (57%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 11.5
 Intersection Capacity Utilization 52.9%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp







Queues

2019 Projected Midday Peak w MOB











1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	622	287	1374	1175
v/c Ratio	0.66	0.66	0.35	0.37
Control Delay	23.6	24.8	7.2	7.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	24.8	7.2	7.0
Queue Length 50th (ft)	108	92	73	112
Queue Length 95th (ft)	145	162	110	149
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1149	521	3976	3171
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.55	0.35	0.37
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected Midday Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	396	441	0	1264	1081	0
Future Volume (vph)	396	441	0	1264	1081	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.95	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3365	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3365	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	430	479	0	1374	1175	0
RTOR Reduction (vph)	48	48	0	0	0	0
Lane Group Flow (vph)	574	239	0	1374	1175	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	16.6	16.6		41.4	41.4	
Effective Green, g (s)	18.6	18.6		43.4	43.4	
Actuated g/C Ratio	0.27	0.27		0.62	0.62	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	894	386		3972	3168	
v/s Ratio Prot	c0.17	0.16		0.21	c0.23	
v/s Ratio Perm						
v/c Ratio	0.64	0.62		0.35	0.37	
Uniform Delay, d ₁	22.8	22.6		6.4	6.6	
Progression Factor	1.00	1.00		1.00	0.96	
Incremental Delay, d ₂	1.2	2.1		0.2	0.3	
Delay (s)	23.9	24.7		6.7	6.6	
Level of Service	C	C		A	A	
Approach Delay (s)	24.2			6.7	6.6	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			11.2	HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio			0.45			
Actuated Cycle Length (s)			70.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization			52.9%	ICU Level of Service	A	
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected Midday Peak w MOB
Parkwest Medical Center

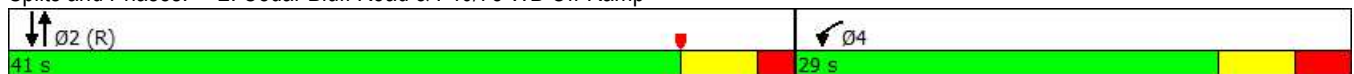
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	779	1658	549
Future Volume (vph)	779	1658	549
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	29.0	41.0	41.0
Total Split (%)	41.4%	58.6%	58.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	23.1	38.9	38.9
Actuated g/C Ratio	0.33	0.56	0.56
v/c Ratio	0.73	0.49	0.21
Control Delay	24.6	7.6	6.9
Queue Delay	0.0	0.0	0.0
Total Delay	24.6	7.6	6.9
LOS	C	A	A
Approach Delay	24.6	7.6	6.9
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 41 (59%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 11.9
 Intersection Capacity Utilization 52.9%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp












Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected Midday Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	847	1802	597
v/c Ratio	0.73	0.49	0.21
Control Delay	24.6	7.6	6.9
Queue Delay	0.0	0.0	0.0
Total Delay	24.6	7.6	6.9
Queue Length 50th (ft)	157	79	69
Queue Length 95th (ft)	214	91	40
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1260	3702	2800
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.67	0.49	0.21
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected Midday Peak w MOB
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	779	0	1658	0	0	549
Future Volume (vph)	779	0	1658	0	0	549
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	847	0	1802	0	0	597
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	847	0	1802	0	0	597
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	20.1		36.9			36.9
Effective Green, g (s)	23.1		38.9			38.9
Actuated g/C Ratio	0.33		0.56			0.56
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1164		3698			2797
v/s Ratio Prot	c0.24		c0.27			0.12
v/s Ratio Perm						
v/c Ratio	0.73		0.49			0.21
Uniform Delay, d1	20.7		9.5			7.8
Progression Factor	1.00		0.72			0.83
Incremental Delay, d2	2.0		0.4			0.2
Delay (s)	22.6		7.3			6.7
Level of Service	C		A			A
Approach Delay (s)	22.6		7.3			6.7
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.2		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			52.9%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

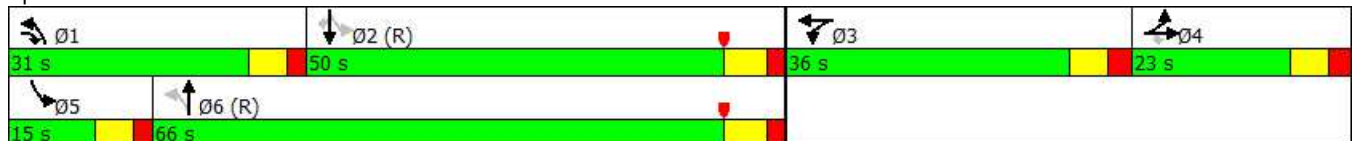
2019 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	78	38	268	115	197	290	733	49	513	44
Future Volume (vph)	78	38	268	115	197	290	733	49	513	44
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	23.0	23.0	31.0	36.0	36.0	31.0	66.0	15.0	50.0	50.0
Total Split (%)	16.4%	16.4%	22.1%	25.7%	25.7%	22.1%	47.1%	10.7%	35.7%	35.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.5	22.5	45.2	19.9	19.9	86.1	75.5	73.8	62.8	62.8
Actuated g/C Ratio	0.16	0.16	0.32	0.14	0.14	0.62	0.54	0.53	0.45	0.45
v/c Ratio	0.31	0.67	0.33	0.49	0.69	0.58	0.33	0.14	0.34	0.06
Control Delay	54.0	68.1	36.3	61.8	49.7	21.5	13.6	13.7	25.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0
Total Delay	54.0	68.1	36.3	61.8	49.7	22.5	13.6	13.7	25.9	0.2
LOS	D	E	D	E	D	C	B	B	C	A
Approach Delay		52.8			52.4		15.9		23.0	
Approach LOS		D			D		B		C	

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 29.6
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd













Queues

2019 Projected Midday Peak w MOB























3: Cedar Bluff Road & Park West Blvd

Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	85	169	163	112	380	315	886	53	558	48
v/c Ratio	0.31	0.67	0.33	0.49	0.69	0.58	0.33	0.14	0.34	0.06
Control Delay	54.0	68.1	36.3	61.8	49.7	21.5	13.6	13.7	25.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0
Total Delay	54.0	68.1	36.3	61.8	49.7	22.5	13.6	13.7	25.9	0.2
Queue Length 50th (ft)	69	153	117	104	139	161	162	14	151	0
Queue Length 95th (ft)	120	232	164	168	191	294	204	42	233	1
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	284	260	572	369	825	610	2710	408	1620	819
Starvation Cap Reductn	0	0	0	0	0	115	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.65	0.28	0.30	0.46	0.64	0.33	0.13	0.34	0.06
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	38	268	115	197	141	290	733	82	49	513	44
Future Volume (vph)	78	38	268	115	197	141	290	733	82	49	513	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1576	1512	1618	3302		1770	5009		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.34	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1719	1576	1512	1618	3302		638	5009		567	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	41	291	125	214	153	315	797	89	53	558	48
RTOR Reduction (vph)	0	0	0	0	78	0	0	8	0	0	0	26
Lane Group Flow (vph)	85	169	163	112	302	0	315	878	0	53	558	22
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	19.5	19.5	36.8	17.4	17.4		83.6	71.8		66.1	60.3	60.3
Effective Green, g (s)	22.5	22.5	40.8	19.9	19.9		85.6	74.3		72.1	62.8	62.8
Actuated g/C Ratio	0.16	0.16	0.29	0.14	0.14		0.61	0.53		0.51	0.45	0.45
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	276	253	440	229	469		546	2658		366	1619	724
v/s Ratio Prot	0.05	c0.11	0.05	0.07	c0.09		c0.08	0.18		0.01	0.15	
v/s Ratio Perm			0.06				c0.27			0.07		0.01
v/c Ratio	0.31	0.67	0.37	0.49	0.64		0.58	0.33		0.14	0.34	0.03
Uniform Delay, d1	51.9	55.2	39.4	55.4	56.7		14.2	18.7		17.0	25.2	21.6
Progression Factor	1.00	1.00	1.01	1.00	1.00		1.25	0.68		0.96	0.91	1.00
Incremental Delay, d2	0.5	5.9	0.4	1.2	2.7		1.1	0.3		0.1	0.5	0.1
Delay (s)	52.5	61.1	40.0	56.6	59.4		18.8	13.1		16.5	23.5	21.6
Level of Service	D	E	D	E	E		B	B		B	C	C
Approach Delay (s)		51.1			58.7			14.6			22.8	
Approach LOS		D			E			B			C	

Intersection Summary

HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	141	18	268	105	9	276	801	22	887
Future Volume (vph)	141	18	268	105	9	276	801	22	887
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	35.0	35.0	25.0	35.0	35.0	25.0	105.0	80.0	80.0
Total Split (%)	25.0%	25.0%	17.9%	25.0%	25.0%	17.9%	75.0%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	24.7	24.7	42.1		24.7	108.8	108.3	91.4	91.4
Actuated g/C Ratio	0.18	0.18	0.30		0.18	0.78	0.77	0.65	0.65
v/c Ratio	0.73	0.06	0.51		0.33	0.62	0.33	0.06	0.44
Control Delay	73.9	45.3	26.8		45.7	21.6	3.6	12.5	13.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	73.9	45.3	26.8		45.7	21.6	3.6	12.5	13.7
LOS	E	D	C		D	C	A	B	B
Approach Delay		43.1			45.7		8.0		13.7
Approach LOS		D			D		A		B

Intersection Summary









Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 70 (50%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 17.7
 Intersection Capacity Utilization 66.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd
























Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

								
Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	20	291	148	300	919	24	1037
v/c Ratio	0.73	0.06	0.51	0.33	0.62	0.33	0.06	0.44
Control Delay	73.9	45.3	26.8	45.7	21.6	3.6	12.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.9	45.3	26.8	45.7	21.6	3.6	12.5	13.7
Queue Length 50th (ft)	133	15	140	55	64	72	7	222
Queue Length 95th (ft)	203	37	196	85	156	97	26	358
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	267	438	660	575	567	2746	376	2353
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.05	0.44	0.26	0.53	0.33	0.06	0.44
Intersection Summary								

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	18	268	105	9	22	276	801	44	22	887	67
Future Volume (vph)	141	18	268	105	9	22	276	801	44	22	887	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3196		1906	3547		1761	3600	
Flt Permitted	0.61	1.00	1.00		0.76		0.22	1.00		0.31	1.00	
Satd. Flow (perm)	1192	1947	1655		2507		433	3547		576	3600	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	153	20	291	114	10	24	300	871	48	24	964	73
RTOR Reduction (vph)	0	0	76	0	12	0	0	2	0	0	3	0
Lane Group Flow (vph)	153	20	215	0	136	0	300	917	0	24	1034	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	22.2	22.2	34.1		22.2		106.3	106.3		89.4	89.4	
Effective Green, g (s)	24.7	24.7	38.1		24.7		108.3	108.3		91.4	91.4	
Actuated g/C Ratio	0.18	0.18	0.27		0.18		0.77	0.77		0.65	0.65	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	210	343	450		442		481	2743		376	2350	
v/s Ratio Prot		0.01	0.05				c0.06	0.26			0.29	
v/s Ratio Perm	c0.13		0.08		0.05		c0.42			0.04		
v/c Ratio	0.73	0.06	0.48		0.31		0.62	0.33		0.06	0.44	
Uniform Delay, d1	54.5	48.0	42.6		50.2		7.6	4.8		8.8	11.8	
Progression Factor	1.00	1.00	1.00		1.00		3.34	0.62		1.00	1.00	
Incremental Delay, d2	11.9	0.1	0.6		0.4		2.1	0.3		0.3	0.6	
Delay (s)	66.4	48.0	43.2		50.6		27.5	3.3		9.1	12.4	
Level of Service	E	D	D		D		C	A		A	B	
Approach Delay (s)		51.1			50.6			9.3			12.4	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			19.2				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			66.4%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

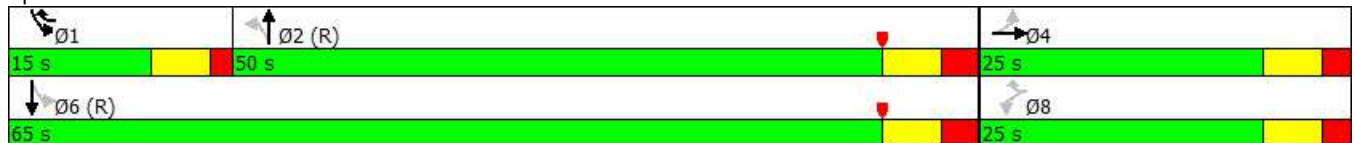
Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	78	37	648	82	853	
Future Volume (vph)	78	37	648	82	853	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	20.0	11.5	26.5	11.5	26.5	20.0
Total Split (s)	25.0	15.0	50.0	15.0	65.0	25.0
Total Split (%)	27.8%	16.7%	55.6%	16.7%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	11.1	21.1	60.5	70.2	70.5	
Actuated g/C Ratio	0.12	0.23	0.67	0.78	0.78	
v/c Ratio	0.49	0.10	0.36	0.18	0.34	
Control Delay	45.7	7.4	6.3	4.2	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.7	7.4	6.3	4.2	4.5	
LOS	D	A	A	A	A	
Approach Delay			6.3		4.4	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 28 (31%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 7.0
 Intersection Capacity Utilization 58.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	85	40	843	89	927
v/c Ratio	0.49	0.10	0.36	0.18	0.34
Control Delay	45.7	7.4	6.3	4.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.7	7.4	6.3	4.2	4.5
Queue Length 50th (ft)	46	0	69	11	78
Queue Length 95th (ft)	88	21	105	27	131
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	297	449	2330	538	2758
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.09	0.36	0.17	0.34
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	78	0	37	0	648	128	82	853	0
Future Volume (vph)	0	0	0	78	0	37	0	648	128	82	853	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.98		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3452		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.28	1.00	
Satd. Flow (perm)				1410		1583		3452		523	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	85	0	40	0	704	139	89	927	0
RTOR Reduction (vph)	0	0	0	0	0	33	0	13	0	0	0	0
Lane Group Flow (vph)	0	0	0	85	0	7	0	830	0	89	927	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				9.5		15.1		56.9		68.0	68.0	
Effective Green, g (s)				9.5		15.1		56.9		68.0	68.0	
Actuated g/C Ratio				0.11		0.17		0.63		0.76	0.76	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				148		265		2182		472	2661	
v/s Ratio Prot						0.00		c0.24		0.01	c0.26	
v/s Ratio Perm				c0.06		0.00				0.13		
v/c Ratio				0.57		0.03		0.38		0.19	0.35	
Uniform Delay, d ₁				38.3		31.3		8.0		3.5	3.6	
Progression Factor				1.00		1.00		0.67		1.00	1.00	
Incremental Delay, d ₂				5.3		0.0		0.5		0.2	0.4	
Delay (s)				43.6		31.3		5.8		3.7	4.0	
Level of Service				D		C		A		A	A	
Approach Delay (s)		0.0			39.7			5.8			4.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.0									A
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			90.0							18.0		
Intersection Capacity Utilization			58.7%									B
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	82	37	55	46	73	141	557	18	843
Future Volume (vph)	82	37	55	46	73	141	557	18	843
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	13.0	17.0	15.0	13.0	17.0	15.0	47.0	13.0	45.0
Total Split (%)	14.4%	18.9%	16.7%	14.4%	18.9%	16.7%	52.2%	14.4%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	18.0	13.1	24.6	14.9	9.5	58.3	55.4	51.5	44.8
Actuated g/C Ratio	0.20	0.15	0.27	0.17	0.11	0.65	0.62	0.57	0.50
v/c Ratio	0.33	0.15	0.12	0.19	0.45	0.45	0.30	0.04	0.57
Control Delay	29.1	35.7	1.1	26.7	42.4	12.3	12.4	5.3	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	35.7	1.1	26.7	42.4	12.3	12.4	5.3	18.2
LOS	C	D	A	C	D	B	B	A	B
Approach Delay		21.6			36.8		12.3		18.0
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 18 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 17.4
 Intersection Capacity Utilization 60.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center























									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	89	40	60	50	89	153	653	20	993
v/c Ratio	0.33	0.15	0.12	0.19	0.45	0.45	0.30	0.04	0.57
Control Delay	29.1	35.7	1.1	26.7	42.4	12.3	12.4	5.3	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.1	35.7	1.1	26.7	42.4	12.3	12.4	5.3	18.2
Queue Length 50th (ft)	39	21	0	21	45	35	88	3	241
Queue Length 95th (ft)	77	51	5	50	90	62	167	m4	308
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	275	283	529	262	229	353	2179	514	1771
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.14	0.11	0.19	0.39	0.43	0.30	0.04	0.56

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

























HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	37	55	46	73	9	141	557	44	18	843	71
Future Volume (vph)	82	37	55	46	73	9	141	557	44	18	843	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1831		1770	3500		1761	3481	
Flt Permitted	0.55	1.00	1.00	0.73	1.00		0.17	1.00		0.40	1.00	
Satd. Flow (perm)	1019	1863	1583	1362	1831		318	3500		748	3481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	40	60	50	79	10	153	605	48	20	916	77
RTOR Reduction (vph)	0	0	47	0	5	0	0	6	0	0	7	0
Lane Group Flow (vph)	89	40	13	50	84	0	153	647	0	20	986	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	18.5	11.5	19.8	13.5	9.0		55.2	46.9		43.8	41.2	
Effective Green, g (s)	18.5	11.5	19.8	13.5	9.0		55.2	46.9		43.8	41.2	
Actuated g/C Ratio	0.21	0.13	0.22	0.15	0.10		0.61	0.52		0.49	0.46	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	238	453	224	183		328	1823		393	1593	
v/s Ratio Prot	c0.03	0.02	0.00	0.01	c0.05		c0.04	0.18		0.00	c0.28	
v/s Ratio Perm	0.04		0.01	0.02			0.24			0.02		
v/c Ratio	0.33	0.17	0.03	0.22	0.46		0.47	0.36		0.05	0.62	
Uniform Delay, d1	29.9	35.0	27.6	33.5	38.2		10.2	12.7		12.0	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.62	0.91	
Incremental Delay, d2	0.7	0.3	0.0	0.5	1.8		1.1	0.5		0.1	1.7	
Delay (s)	30.7	35.3	27.6	34.0	40.0		11.3	13.2		7.5	18.5	
Level of Service	C	D	C	C	D		B	B		A	B	
Approach Delay (s)		30.7			37.8			12.8			18.2	
Approach LOS		C			D			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.6				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			24.5		
Intersection Capacity Utilization			60.0%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	29	281	19	32	290	54	8	22	25	124	71	21	
Future Volume (Veh/h)	29	281	19	32	290	54	8	22	25	124	71	21	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	32	305	21	35	315	59	9	24	27	135	77	23	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	374			326			668	824	163	670	804	187	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	374			326			668	824	163	670	804	187	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			97			96	92	97	55	74	97	
cM capacity (veh/h)	1181			1230			257	290	853	298	297	823	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	32	203	123	192	216	33	27	135	100				
Volume Left	32	0	0	35	0	9	0	135	0				
Volume Right	0	0	21	0	59	0	27	0	23				
cSH	1181	1700	1700	1230	1700	280	853	298	349				
Volume to Capacity	0.03	0.12	0.07	0.03	0.13	0.12	0.03	0.45	0.29				
Queue Length 95th (ft)	2	0	0	2	0	10	2	56	29				
Control Delay (s)	8.1	0.0	0.0	1.7	0.0	19.6	9.4	26.7	19.4				
Lane LOS	A			A		C	A	D	C				
Approach Delay (s)	0.7			0.8		15.0		23.6					
Approach LOS						B		C					
Intersection Summary													
Average Delay	6.6												
Intersection Capacity Utilization	42.6%			ICU Level of Service					A				
Analysis Period (min)	15												

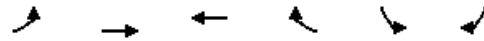
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2019 Projected Midday Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	17	9	232	65	13	188	
Future Volume (Veh/h)	17	9	232	65	13	188	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	18	10	252	71	14	204	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	418	162			323		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	418	162			323		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	557	855			1234		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	18	10	168	155	14	102	102
Volume Left	18	0	0	0	14	0	0
Volume Right	0	10	0	71	0	0	0
cSH	557	855	1700	1700	1234	1700	1700
Volume to Capacity	0.03	0.01	0.10	0.09	0.01	0.06	0.06
Queue Length 95th (ft)	3	1	0	0	1	0	0
Control Delay (s)	11.7	9.3	0.0	0.0	8.0	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.8		0.0		0.5		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			20.8%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Projected Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	418	276	0	184	3
Future Volume (Veh/h)	0	418	276	0	184	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	454	300	0	200	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	300				527	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300				527	150
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				58	100
cM capacity (veh/h)	1258				481	870
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	151	303	200	100	200	3
Volume Left	0	0	0	0	200	0
Volume Right	0	0	0	0	0	3
cSH	1258	1700	1700	1700	481	870
Volume to Capacity	0.00	0.18	0.12	0.06	0.42	0.00
Queue Length 95th (ft)	0	0	0	0	51	0
Control Delay (s)	0.0	0.0	0.0	0.0	17.7	9.2
Lane LOS					C	A
Approach Delay (s)	0.0	0.0		17.6		
Approach LOS					C	
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			28.4%		ICU Level of Service A	
Analysis Period (min)	15					

Timings
10: Sherrill Blvd & Dutchtown Rd

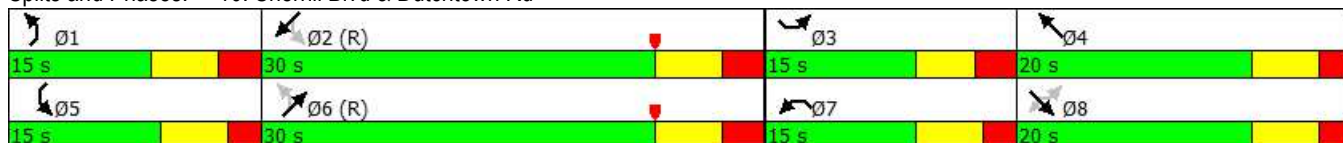
2019 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	76	199	157	123	242	136	168	31	67
Future Volume (vph)	76	199	157	123	242	136	168	31	67
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	15.0	20.0	20.0	15.0	20.0	15.0	30.0	15.0	30.0
Total Split (%)	18.8%	25.0%	25.0%	18.8%	25.0%	18.8%	37.5%	18.8%	37.5%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	21.2	13.4	13.4	8.0	16.1	37.4	32.3	32.4	25.5
Actuated g/C Ratio	0.26	0.17	0.17	0.10	0.20	0.47	0.40	0.40	0.32
v/c Ratio	0.27	0.69	0.26	0.39	0.75	0.27	0.23	0.07	0.16
Control Delay	20.0	43.7	3.1	36.8	45.7	13.1	11.1	11.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	43.7	3.1	36.8	45.7	13.1	11.1	11.6	9.7
LOS	B	D	A	D	D	B	B	B	A
Approach Delay		24.8			42.8		11.7		10.0
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 65 (81%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 23.6
 Intersection Capacity Utilization 55.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Projected Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	83	216	171	134	279	148	320	34	180
v/c Ratio	0.27	0.69	0.26	0.39	0.75	0.27	0.23	0.07	0.16
Control Delay	20.0	43.7	3.1	36.8	45.7	13.1	11.1	11.6	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	43.7	3.1	36.8	45.7	13.1	11.1	11.6	9.7
Queue Length 50th (ft)	27	101	0	32	133	40	33	8	13
Queue Length 95th (ft)	57	#187	15	59	#270	73	65	23	36
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	329	335	680	386	373	551	1419	537	1102
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.64	0.25	0.35	0.75	0.27	0.23	0.06	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Projected Midday Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	76	199	157	123	242	15	136	168	126	31	67	98
Future Volume (vph)	76	199	157	123	242	15	136	168	126	31	67	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3312		1770	3224	
Flt Permitted	0.42	1.00	1.00	0.95	1.00		0.54	1.00		0.56	1.00	
Satd. Flow (perm)	774	1863	2787	3433	1847		1007	3312		1039	3224	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	216	171	134	263	16	148	183	137	34	73	107
RTOR Reduction (vph)	0	0	140	0	2	0	0	88	0	0	74	0
Lane Group Flow (vph)	83	216	31	134	277	0	148	232	0	34	106	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	21.3	14.7	14.7	8.0	16.1		36.7	28.7		28.4	24.3	
Effective Green, g (s)	21.3	14.7	14.7	8.0	16.1		36.7	28.7		28.4	24.3	
Actuated g/C Ratio	0.27	0.18	0.18	0.10	0.20		0.46	0.36		0.35	0.30	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	288	342	512	343	371		538	1188		406	979	
v/s Ratio Prot	0.02	0.12		c0.04	c0.15		c0.03	0.07		0.00	0.03	
v/s Ratio Perm	0.05		0.01				c0.10			0.03		
v/c Ratio	0.29	0.63	0.06	0.39	0.75		0.28	0.20		0.08	0.11	
Uniform Delay, d1	22.7	30.1	27.0	33.7	30.0		12.9	17.7		17.0	20.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	3.8	0.1	0.7	7.9		0.3	0.4		0.1	0.2	
Delay (s)	23.3	33.9	27.0	34.5	37.9		13.2	18.1		17.1	20.3	
Level of Service	C	C	C	C	D		B	B		B	C	
Approach Delay (s)		29.5			36.8			16.5			19.8	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

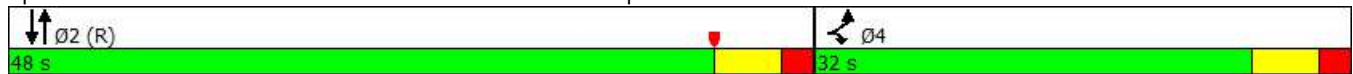
	↖	↗	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	482	351	1115	997
Future Volume (vph)	482	351	1115	997
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	48.0	48.0
Total Split (%)	40.0%	40.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	21.2	21.2	50.8	50.8
Actuated g/C Ratio	0.26	0.26	0.64	0.64
v/c Ratio	0.67	0.64	0.30	0.33
Control Delay	28.2	24.7	7.3	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.2	24.7	7.3	7.5
LOS	C	C	A	A
Approach Delay	27.1		7.3	7.5
Approach LOS	C		A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 49.2%
 Analysis Period (min) 15

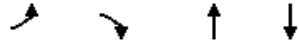
Intersection LOS: B
ICU Level of Service A

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	623	283	1212	1084
v/c Ratio	0.67	0.64	0.30	0.33
Control Delay	28.2	24.7	7.3	7.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.2	24.7	7.3	7.5
Queue Length 50th (ft)	136	97	70	105
Queue Length 95th (ft)	167	165	111	121
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1217	560	4070	3246
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.51	0.30	0.33

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2019 Projected School PM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	482	351	0	1115	997	0
Future Volume (vph)	482	351	0	1115	997	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.98	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3419	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3419	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	524	382	0	1212	1084	0
RTOR Reduction (vph)	23	58	0	0	0	0
Lane Group Flow (vph)	600	225	0	1212	1084	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	19.2	19.2		48.8	48.8	
Effective Green, g (s)	21.2	21.2		50.8	50.8	
Actuated g/C Ratio	0.26	0.26		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	906	385		4069	3245	
v/s Ratio Prot	c0.18	0.15		0.19	c0.21	
v/s Ratio Perm						
v/c Ratio	0.66	0.58		0.30	0.33	
Uniform Delay, d ₁	26.2	25.6		6.6	6.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	1.4	1.5		0.2	0.3	
Delay (s)	27.6	27.0		6.8	7.0	
Level of Service	C	C		A	A	
Approach Delay (s)	27.4			6.8	7.0	
Approach LOS	C			A	A	
Intersection Summary						
HCM 2000 Control Delay			12.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.43			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			49.2%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

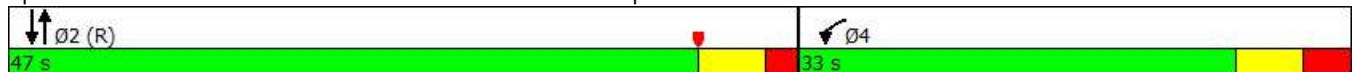
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	680	1597	747
Future Volume (vph)	680	1597	747
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	47.0	47.0
Total Split (%)	41.3%	58.8%	58.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	24.2	47.8	47.8
Actuated g/C Ratio	0.30	0.60	0.60
v/c Ratio	0.69	0.44	0.27
Control Delay	27.9	7.9	8.1
Queue Delay	0.0	0.0	0.0
Total Delay	27.9	7.9	8.1
LOS	C	A	A
Approach Delay	27.9	7.9	8.1
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 49.2%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected School PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	739	1736	812
v/c Ratio	0.69	0.44	0.27
Control Delay	27.9	7.9	8.1
Queue Delay	0.0	0.0	0.0
Total Delay	27.9	7.9	8.1
Queue Length 50th (ft)	166	105	109
Queue Length 95th (ft)	205	120	86
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1279	3976	3007
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.58	0.44	0.27
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2019 Projected School PM Peak w MOB
Parkwest Medical Center

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙↖		↑↑↑			↗↘
Traffic Volume (vph)	680	0	1597	0	0	747
Future Volume (vph)	680	0	1597	0	0	747
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	739	0	1736	0	0	812
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	739	0	1736	0	0	812
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	21.2		45.8			45.8
Effective Green, g (s)	24.2		47.8			47.8
Actuated g/C Ratio	0.30		0.60			0.60
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1067		3976			3007
v/s Ratio Prot	c0.21		c0.26			0.16
v/s Ratio Perm						
v/c Ratio	0.69		0.44			0.27
Uniform Delay, d1	24.6		8.8			7.7
Progression Factor	1.00		0.81			0.97
Incremental Delay, d2	1.6		0.3			0.2
Delay (s)	26.2		7.5			7.7
Level of Service	C		A			A
Approach Delay (s)	26.2		7.5			7.7
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			11.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			49.2%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

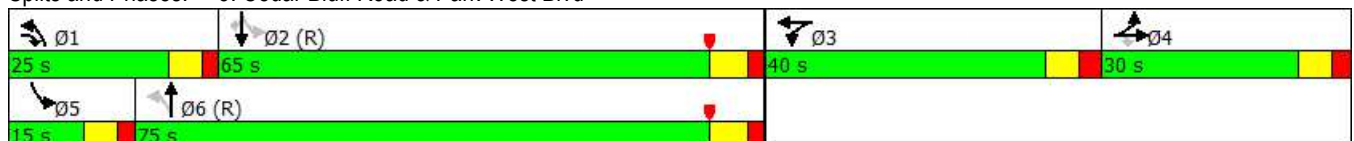
2019 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	11	267	171	161	177	668	38	725	27
Future Volume (vph)	103	11	267	171	161	177	668	38	725	27
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	41.4	24.0	24.0	101.2	90.8	93.4	82.6	82.6
Actuated g/C Ratio	0.15	0.15	0.26	0.15	0.15	0.63	0.57	0.58	0.52	0.52
v/c Ratio	0.45	0.68	0.39	0.69	0.63	0.45	0.29	0.10	0.42	0.03
Control Delay	67.1	79.5	50.0	78.4	43.1	16.5	14.1	13.1	23.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	79.5	50.0	78.4	43.1	16.5	14.1	13.1	23.2	0.1
LOS	E	E	D	E	D	B	B	B	C	A
Approach Delay		65.4			53.8		14.5		22.0	
Approach LOS		E			D		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 31.8
 Intersection Capacity Utilization 59.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	112	151	151	167	382	192	822	41	788	29
v/c Ratio	0.45	0.68	0.39	0.69	0.63	0.45	0.29	0.10	0.42	0.03
Control Delay	67.1	79.5	50.0	78.4	43.1	16.5	14.1	13.1	23.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	79.5	50.0	78.4	43.1	16.5	14.1	13.1	23.2	0.1
Queue Length 50th (ft)	109	160	137	184	130	88	160	14	225	0
Queue Length 95th (ft)	169	234	189	262	180	184	207	34	277	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	292	260	451	364	843	473	2843	434	1863	906
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.58	0.33	0.46	0.45	0.41	0.29	0.09	0.42	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	11	267	171	161	173	177	668	88	38	725	27
Future Volume (vph)	103	11	267	171	161	173	177	668	88	38	725	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.86	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1533	1512	1618	3253		1770	4996		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.26	1.00		0.32	1.00	1.00
Satd. Flow (perm)	1719	1533	1512	1618	3253		481	4996		583	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	12	290	186	175	188	192	726	96	41	788	29
RTOR Reduction (vph)	0	0	0	0	122	0	0	8	0	0	0	14
Lane Group Flow (vph)	112	151	151	167	260	0	192	814	0	41	788	15
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	20.3	20.3	32.9	21.5	21.5		98.7	87.1		85.7	80.1	80.1
Effective Green, g (s)	23.3	23.3	36.9	24.0	24.0		100.7	89.6		91.7	82.6	82.6
Actuated g/C Ratio	0.15	0.15	0.23	0.15	0.15		0.63	0.56		0.57	0.52	0.52
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	250	223	348	242	487		420	2797		396	1863	833
v/s Ratio Prot	0.07	c0.10	0.04	c0.10	0.08		c0.04	0.16		0.01	0.22	
v/s Ratio Perm			0.06				c0.25			0.05		0.01
v/c Ratio	0.45	0.68	0.43	0.69	0.53		0.46	0.29		0.10	0.42	0.02
Uniform Delay, d1	62.5	64.8	52.6	64.5	62.8		14.7	18.5		15.0	24.0	18.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.94	0.71		0.90	0.85	1.00
Incremental Delay, d2	0.9	7.2	0.6	7.6	0.9		0.5	0.2		0.1	0.7	0.0
Delay (s)	63.4	72.0	53.3	72.0	63.7		14.3	13.3		13.5	21.0	18.9
Level of Service	E	E	D	E	E		B	B		B	C	B
Approach Delay (s)		62.8			66.2			13.5			20.6	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

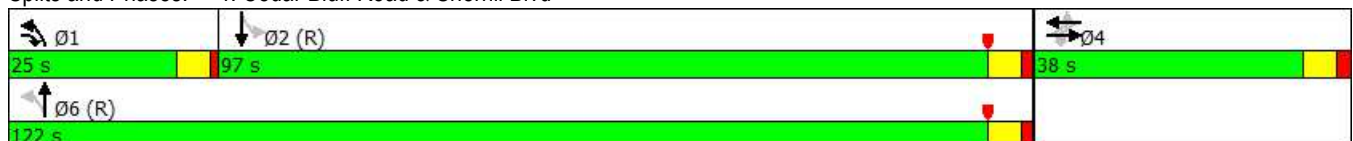
2019 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	90	172	69	0	202	643	15	1003
Future Volume (vph)	90	172	69	0	202	643	15	1003
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		1		4	1	6		2
Permitted Phases	4	4	4		6		2	
Detector Phase	4	1	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	38.0	25.0	38.0	38.0	25.0	122.0	97.0	97.0
Total Split (%)	23.8%	15.6%	23.8%	23.8%	15.6%	76.3%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag		Lead			Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	19.3	33.3		19.3	134.2	133.7	120.2	120.2
Actuated g/C Ratio	0.12	0.21		0.12	0.84	0.84	0.75	0.75
v/c Ratio	0.59	0.45		0.22	0.48	0.25	0.03	0.41
Control Delay	80.5	29.6		25.8	10.7	2.1	6.8	8.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	29.6		25.8	10.7	2.1	6.8	8.3
LOS	F	C		C	B	A	A	A
Approach Delay				25.8		4.1		8.2
Approach LOS				C		A		A

Intersection Summary








Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 97 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 11.7
 Intersection Capacity Utilization 61.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd

























Queues
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

							
Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	187	77	220	739	16	1113
v/c Ratio	0.59	0.45	0.22	0.48	0.25	0.03	0.41
Control Delay	80.5	29.6	25.8	10.7	2.1	6.8	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.5	29.6	25.8	10.7	2.1	6.8	8.3
Queue Length 50th (ft)	99	86	13	38	51	4	196
Queue Length 95th (ft)	159	154	38	78	60	14	297
Internal Link Dist (ft)			642		919		1139
Turn Bay Length (ft)	90			75		85	
Base Capacity (vph)	295	529	580	567	2965	516	2725
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.35	0.13	0.39	0.25	0.03	0.41
Intersection Summary							

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	0	172	69	0	2	202	643	37	15	1003	21
Future Volume (vph)	90	0	172	69	0	2	202	643	37	15	1003	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%			1%	
Total Lost time (s)	3.5		3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00		1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00		0.85		1.00		1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849		1655		3232		1906	3546		1761	3628	
Flt Permitted	0.70		1.00		0.74		0.22	1.00		0.37	1.00	
Satd. Flow (perm)	1371		1655		2508		436	3546		688	3628	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	0	187	75	0	2	220	699	40	16	1090	23
RTOR Reduction (vph)	0	0	75	0	45	0	0	2	0	0	0	0
Lane Group Flow (vph)	98	0	112	0	32	0	220	737	0	16	1113	0
Turn Type	Perm		pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	16.8		25.3		16.8		131.7	131.7		118.2	118.2	
Effective Green, g (s)	19.3		29.3		19.3		133.7	133.7		120.2	120.2	
Actuated g/C Ratio	0.12		0.18		0.12		0.84	0.84		0.75	0.75	
Clearance Time (s)	6.0		5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0		2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	165		303		302		460	2963		516	2725	
v/s Ratio Prot			0.02				c0.03	0.21				0.31
v/s Ratio Perm	c0.07		0.04		0.01		c0.37			0.02		
v/c Ratio	0.59		0.37		0.11		0.48	0.25		0.03	0.41	
Uniform Delay, d1	66.6		57.3		62.7		4.4	2.7		5.1	7.1	
Progression Factor	1.00		1.00		1.00		2.68	0.65		1.00	1.00	
Incremental Delay, d2	5.6		0.6		0.2		0.5	0.2		0.1	0.5	
Delay (s)	72.3		57.8		62.8		12.2	2.0		5.2	7.6	
Level of Service	E		E		E		B	A		A	A	
Approach Delay (s)		62.8			62.8			4.3			7.6	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			14.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			61.2%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↑↑	
Traffic Volume (vph)	79	22	725	104	616	
Future Volume (vph)	79	22	725	104	616	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	9.5	10.5	9.5	10.5	10.0
Total Split (s)	30.0	20.0	65.0	20.0	85.0	30.0
Total Split (%)	26.1%	17.4%	56.5%	17.4%	73.9%	26%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	22.9	80.1	93.8	94.1	
Actuated g/C Ratio	0.11	0.20	0.70	0.82	0.82	
v/c Ratio	0.57	0.07	0.40	0.24	0.23	
Control Delay	62.5	7.6	5.7	4.3	3.6	
Queue Delay	0.0	0.0	0.1	0.0	0.0	
Total Delay	62.5	7.6	5.7	4.3	3.6	
LOS	E	A	A	A	A	
Approach Delay			5.7		3.7	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 34 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.57
 Intersection Signal Delay: 7.5
 Intersection Capacity Utilization 48.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd


























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	86	24	956	113	670
v/c Ratio	0.57	0.07	0.40	0.24	0.23
Control Delay	62.5	7.6	5.7	4.3	3.6
Queue Delay	0.0	0.0	0.1	0.0	0.0
Total Delay	62.5	7.6	5.7	4.3	3.6
Queue Length 50th (ft)	62	0	84	15	56
Queue Length 95th (ft)	110	16	113	34	94
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	294	440	2409	545	2880
Starvation Cap Reductn	0	0	246	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.29	0.05	0.44	0.21	0.23
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations								 			 		
Traffic Volume (vph)	0	0	0	79	0	22	0	725	155	104	616	0	
Future Volume (vph)	0	0	0	79	0	22	0	725	155	104	616	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			0%			1%		
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5		
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95		
Fr _t				1.00		0.85		0.97		1.00	1.00		
Fl _t Protected				0.95		1.00		1.00		0.95	1.00		
Satd. Flow (prot)				1770		1583		3446		1761	3522		
Fl _t Permitted				0.76		1.00		1.00		0.25	1.00		
Satd. Flow (perm)				1410		1583		3446		469	3522		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	86	0	24	0	788	168	113	670	0	
RTOR Reduction (vph)	0	0	0	0	0	20	0	10	0	0	0	0	
Lane Group Flow (vph)	0	0	0	86	0	4	0	946	0	113	670	0	
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA		
Protected Phases		4				1		2		1	6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)				10.9		18.1		78.9		91.6	91.6		
Effective Green, g (s)				10.9		18.1		78.9		91.6	91.6		
Actuated g/C Ratio				0.09		0.16		0.69		0.80	0.80		
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5		
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0		
Lane Grp Cap (vph)				133		249		2364		454	2805		
v/s Ratio Prot						0.00		c0.27		0.02	c0.19		
v/s Ratio Perm				c0.06		0.00				0.18			
v/c Ratio				0.65		0.02		0.40		0.25	0.24		
Uniform Delay, d ₁				50.2		40.9		7.8		3.5	2.9		
Progression Factor				1.00		1.00		0.63		1.00	1.00		
Incremental Delay, d ₂				10.3		0.0		0.5		0.3	0.2		
Delay (s)				60.5		40.9		5.4		3.8	3.1		
Level of Service				E		D		A		A	A		
Approach Delay (s)		0.0			56.2			5.4			3.2		
Approach LOS		A			E			A			A		
Intersection Summary													
HCM 2000 Control Delay			7.5									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.42										
Actuated Cycle Length (s)			115.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			48.5%									ICU Level of Service	A
Analysis Period (min)			15										
c Critical Lane Group													

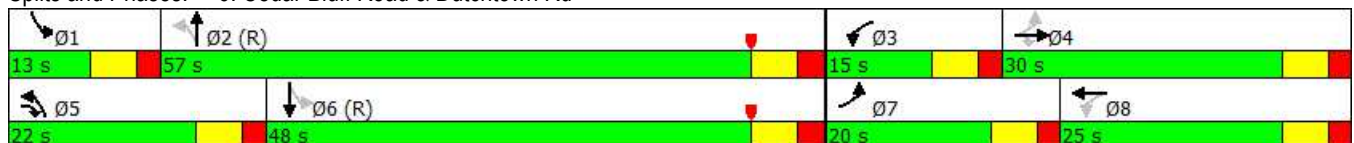
Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	97	65	83	21	138	187	610	17	552
Future Volume (vph)	97	65	83	21	138	187	610	17	552
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.6	12.0	26.5
Total Split (s)	20.0	30.0	22.0	15.0	25.0	22.0	57.0	13.0	48.0
Total Split (%)	17.4%	26.1%	19.1%	13.0%	21.7%	19.1%	49.6%	11.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	32.8	25.2	42.9	22.3	15.6	69.9	64.4	58.5	51.7
Actuated g/C Ratio	0.29	0.22	0.37	0.19	0.14	0.61	0.56	0.51	0.45
v/c Ratio	0.34	0.17	0.14	0.08	0.68	0.49	0.35	0.04	0.48
Control Delay	32.2	37.5	4.6	27.5	58.8	15.5	16.8	10.9	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	37.5	4.6	27.5	58.8	15.5	16.8	10.9	25.3
LOS	C	D	A	C	E	B	B	B	C
Approach Delay		24.3			55.1		16.5		25.0
Approach LOS		C			E		B		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 24.0
 Intersection Capacity Utilization 63.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	71	90	23	170	203	693	18	738
v/c Ratio	0.34	0.17	0.14	0.08	0.68	0.49	0.35	0.04	0.48
Control Delay	32.2	37.5	4.6	27.5	58.8	15.5	16.8	10.9	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.2	37.5	4.6	27.5	58.8	15.5	16.8	10.9	25.3
Queue Length 50th (ft)	59	45	0	12	118	62	123	5	204
Queue Length 95th (ft)	92	80	29	29	182	123	250	20	314
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	334	421	704	317	313	468	1993	433	1580
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.17	0.13	0.07	0.54	0.43	0.35	0.04	0.47
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

























Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	65	83	21	138	18	187	610	28	17	552	127
Future Volume (vph)	97	65	83	21	138	18	187	610	28	17	552	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1830		1770	3516		1761	3423	
Flt Permitted	0.38	1.00	1.00	0.71	1.00		0.25	1.00		0.39	1.00	
Satd. Flow (perm)	700	1863	1583	1324	1830		472	3516		719	3423	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	105	71	90	23	150	20	203	663	30	18	600	138
RTOR Reduction (vph)	0	0	61	0	4	0	0	2	0	0	15	0
Lane Group Flow (vph)	105	71	29	23	166	0	203	691	0	18	723	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	35.5	25.2	36.9	22.3	18.0		67.0	58.3		52.0	49.3	
Effective Green, g (s)	35.5	25.2	36.9	22.3	18.0		67.0	58.3		52.0	49.3	
Actuated g/C Ratio	0.31	0.22	0.32	0.19	0.16		0.58	0.51		0.45	0.43	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	323	408	590	273	286		407	1782		349	1467	
v/s Ratio Prot	c0.03	0.04	0.00	0.00	c0.09		c0.05	0.20		0.00	0.21	
v/s Ratio Perm	0.07		0.01	0.01			c0.24			0.02		
v/c Ratio	0.33	0.17	0.05	0.08	0.58		0.50	0.39		0.05	0.49	
Uniform Delay, d1	29.7	36.5	26.9	37.9	45.0		13.2	17.4		17.4	23.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.87	1.03	
Incremental Delay, d2	0.6	0.2	0.0	0.1	2.8		1.0	0.6		0.1	1.2	
Delay (s)	30.3	36.7	27.0	38.0	47.8		14.2	18.0		15.2	25.7	
Level of Service	C	D	C	D	D		B	B		B	C	
Approach Delay (s)		30.9			46.7			17.2			25.5	
Approach LOS		C			D			B			C	

Intersection Summary

HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	33	206	9	19	238	81	6	33	20	144	94	19	
Future Volume (Veh/h)	33	206	9	19	238	81	6	33	20	144	94	19	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	36	224	10	21	259	88	7	36	22	157	102	21	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	347			234			544	690	117	569	651	174	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	347			234			544	690	117	569	651	174	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			98			98	90	98	55	72	97	
cM capacity (veh/h)	1209			1331			313	350	913	352	369	840	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	36	149	85	150	218	43	22	157	123				
Volume Left	36	0	0	21	0	7	0	157	0				
Volume Right	0	0	10	0	88	0	22	0	21				
cSH	1209	1700	1700	1331	1700	343	913	352	408				
Volume to Capacity	0.03	0.09	0.05	0.02	0.13	0.13	0.02	0.45	0.30				
Queue Length 95th (ft)	2	0	0	1	0	11	2	55	31				
Control Delay (s)	8.1	0.0	0.0	1.2	0.0	17.0	9.0	23.2	17.6				
Lane LOS	A			A		C	A	C	C				
Approach Delay (s)	1.1			0.5		14.3		20.8					
Approach LOS						B		C					
Intersection Summary													
Average Delay	7.3												
Intersection Capacity Utilization	40.3%			ICU Level of Service						A			
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
8: Sherrill Blvd & Park West Blvd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	16	8	208	50	9	160	
Future Volume (Veh/h)	16	8	208	50	9	160	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	17	9	226	54	10	174	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	360	140			280		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	360	140			280		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	607	882			1280		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	17	9	151	129	10	87	87
Volume Left	17	0	0	0	10	0	0
Volume Right	0	9	0	54	0	0	0
cSH	607	882	1700	1700	1280	1700	1700
Volume to Capacity	0.03	0.01	0.09	0.08	0.01	0.05	0.05
Queue Length 95th (ft)	2	1	0	0	1	0	0
Control Delay (s)	11.1	9.1	0.0	0.0	7.8	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	10.4		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			17.5%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2019 Projected School PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Volume (veh/h)	3	426	288	0	102	2
Future Volume (Veh/h)	3	426	288	0	102	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	463	313	0	111	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	313			550	156	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	313			550	156	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			76	100	
cM capacity (veh/h)	1244			464	861	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	157	309	209	104	111	2
Volume Left	3	0	0	0	111	0
Volume Right	0	0	0	0	0	2
cSH	1244	1700	1700	1700	464	861
Volume to Capacity	0.00	0.18	0.12	0.06	0.24	0.00
Queue Length 95th (ft)	0	0	0	0	23	0
Control Delay (s)	0.2	0.0	0.0	0.0	15.2	9.2
Lane LOS	A				C	A
Approach Delay (s)	0.1	0.0			15.1	
Approach LOS					C	
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			26.2%	ICU Level of Service	A	
Analysis Period (min)	15					

Timings
10: Sherrill Blvd & Dutchtown Rd

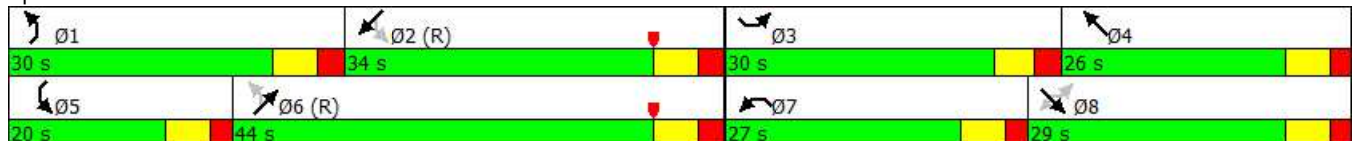
2019 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	159	228	87	277	142	111	165	39	199
Future Volume (vph)	159	228	87	277	142	111	165	39	199
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.5	14.5	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	30.0	29.0	29.0	27.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	25.0%	24.2%	24.2%	22.5%	21.7%	25.0%	36.7%	16.7%	28.3%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	34.1	20.3	20.3	15.8	22.3	63.2	54.8	56.7	49.2
Actuated g/C Ratio	0.28	0.17	0.17	0.13	0.19	0.53	0.46	0.47	0.41
v/c Ratio	0.44	0.79	0.15	0.67	0.48	0.21	0.19	0.08	0.21
Control Delay	30.7	65.3	0.5	56.9	47.1	16.0	13.9	15.7	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	65.3	0.5	56.9	47.1	16.0	13.9	15.7	21.8
LOS	C	E	A	E	D	B	B	B	C
Approach Delay		41.8			53.4		14.5		21.1
Approach LOS		D			D		B		C

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 34.3
 Intersection Capacity Utilization 55.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Projected School PM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	173	248	95	301	164	121	294	42	298
v/c Ratio	0.44	0.79	0.15	0.67	0.48	0.21	0.19	0.08	0.21
Control Delay	30.7	65.3	0.5	56.9	47.1	16.0	13.9	15.7	21.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	65.3	0.5	56.9	47.1	16.0	13.9	15.7	21.8
Queue Length 50th (ft)	95	185	0	115	112	45	43	15	65
Queue Length 95th (ft)	137	270	0	157	176	88	82	37	114
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	517	363	704	600	356	685	1582	646	1417
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.68	0.13	0.50	0.46	0.18	0.19	0.07	0.21
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Projected School PM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	159	228	87	277	142	9	111	165	106	39	199	75
Future Volume (vph)	159	228	87	277	142	9	111	165	106	39	199	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1846		1770	3332		1770	3393	
Flt Permitted	0.60	1.00	1.00	0.95	1.00		0.52	1.00		0.57	1.00	
Satd. Flow (perm)	1109	1863	2787	3433	1846		969	3332		1066	3393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	248	95	301	154	10	121	179	115	42	216	82
RTOR Reduction (vph)	0	0	79	0	2	0	0	64	0	0	25	0
Lane Group Flow (vph)	173	248	16	301	162	0	121	230	0	42	273	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	34.1	20.3	20.3	15.8	22.3		63.3	53.6		55.0	49.2	
Effective Green, g (s)	34.1	20.3	20.3	15.8	22.3		63.3	53.6		55.0	49.2	
Actuated g/C Ratio	0.28	0.17	0.17	0.13	0.19		0.53	0.45		0.46	0.41	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	391	315	471	452	343		575	1488		522	1391	
v/s Ratio Prot	0.05	c0.13		c0.09	0.09		c0.02	0.07		0.00	0.08	
v/s Ratio Perm	0.07		0.01				c0.09			0.03		
v/c Ratio	0.44	0.79	0.03	0.67	0.47		0.21	0.15		0.08	0.20	
Uniform Delay, d1	34.1	47.8	41.7	49.6	43.6		14.5	19.7		18.0	22.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	12.2	0.0	3.7	1.0		0.2	0.2		0.1	0.3	
Delay (s)	34.9	60.0	41.7	53.3	44.6		14.7	20.0		18.1	23.0	
Level of Service	C	E	D	D	D		B	B		B	C	
Approach Delay (s)		48.2			50.2			18.4			22.4	
Approach LOS		D			D			B			C	

Intersection Summary

HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings

3: Cedar Bluff Road & Park West Blvd

09/07/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	42	65	203	143	341	307	655	36	575	65
Future Volume (vph)	42	65	203	143	341	307	655	36	575	65
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	18.0	18.0	33.0	33.0	33.0	33.0	74.0	15.0	56.0	56.0
Total Split (%)	12.9%	12.9%	23.6%	23.6%	23.6%	23.6%	52.9%	10.7%	40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.2	15.2	39.2	27.5	27.5	20.4	74.4	10.7	61.3	61.3
Actuated g/C Ratio	0.11	0.11	0.28	0.20	0.20	0.15	0.53	0.08	0.44	0.44
v/c Ratio	0.25	0.85	0.33	0.44	0.84	0.67	0.34	0.29	0.40	0.09
Control Delay	61.4	98.3	42.0	53.8	60.7	58.1	13.9	62.9	26.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	98.3	42.0	53.8	60.7	58.1	13.9	62.9	26.3	2.0
LOS	E	F	D	D	E	E	B	E	C	A
Approach Delay		69.8			59.4		25.8		25.9	
Approach LOS		E			E		C		C	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 38.7

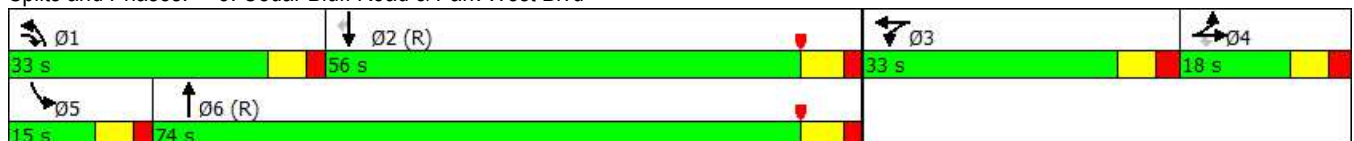
Intersection LOS: D

Intersection Capacity Utilization 58.5%

ICU Level of Service B

Analysis Period (min) 15











Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues

3: Cedar Bluff Road & Park West Blvd

09/07/2017

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	46	151	141	139	584	334	907	39	625	71
v/c Ratio	0.25	0.85	0.33	0.44	0.84	0.67	0.34	0.29	0.40	0.09
Control Delay	61.4	98.3	42.0	53.8	60.7	58.1	13.9	62.9	26.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.4	98.3	42.0	53.8	60.7	58.1	13.9	62.9	26.3	2.0
Queue Length 50th (ft)	39	145	108	121	256	164	154	35	214	1
Queue Length 95th (ft)	82	#286	167	196	331	218	179	63	286	20
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	187	178	515	335	732	711	2650	149	1581	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.85	0.27	0.41	0.80	0.47	0.34	0.26	0.40	0.09























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

3: Cedar Bluff Road & Park West Blvd

09/07/2017

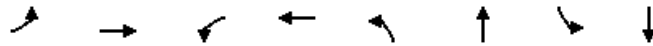
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	65	203	143	341	181	307	655	179	36	575	65
Future Volume (vph)	42	65	203	143	341	181	307	655	179	36	575	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1637	1512	1618	3338		3433	4921		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1637	1512	1618	3338		3433	4921		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	71	221	155	371	197	334	712	195	39	625	71
RTOR Reduction (vph)	0	0	0	0	42	0	0	34	0	0	0	40
Lane Group Flow (vph)	46	151	141	139	542	0	334	873	0	39	625	31
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	12.2	12.2	30.6	25.0	25.0		18.4	70.8		6.5	58.9	58.9
Effective Green, g (s)	15.2	15.2	34.6	27.5	27.5		20.4	73.3		9.5	61.4	61.4
Actuated g/C Ratio	0.11	0.11	0.25	0.20	0.20		0.15	0.52		0.07	0.44	0.44
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	186	177	373	317	655		500	2576		118	1583	708
v/s Ratio Prot	0.03	c0.09	0.05	0.09	c0.16		c0.10	0.18		0.02	c0.17	
v/s Ratio Perm			0.04									0.02
v/c Ratio	0.25	0.85	0.38	0.44	0.83		0.67	0.34		0.33	0.39	0.04
Uniform Delay, d1	57.2	61.3	43.8	49.5	54.0		56.6	19.3		62.2	26.7	22.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.92	0.76		0.95	0.92	1.00
Incremental Delay, d2	0.5	30.4	0.5	0.7	8.3		2.8	0.3		1.1	0.7	0.1
Delay (s)	57.7	91.7	44.2	50.2	62.3		54.9	14.9		60.1	25.4	22.6
Level of Service	E	F	D	D	E		D	B		E	C	C
Approach Delay (s)		67.2			60.0			25.7			26.9	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			38.8				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			58.5%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖	↖	↗	↖	↗
Traffic Volume (vph)	51	120	41	437	4	25	92	233
Future Volume (vph)	51	120	41	437	4	25	92	233
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	20.5	20.5	10.0	22.0	10.0	22.0
Total Split (s)	23.0	23.0	23.0	23.0	10.0	22.0	10.0	22.0
Total Split (%)	41.8%	41.8%	41.8%	41.8%	18.2%	40.0%	18.2%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	0.5	0.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		4.5	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	17.3	17.3		18.9	8.7	9.7	12.0	11.4
Actuated g/C Ratio	0.41	0.41		0.44	0.20	0.23	0.28	0.27
v/c Ratio	0.23	0.10		0.50	0.01	0.07	0.26	0.58
Control Delay	14.2	9.1		9.6	12.2	13.4	11.8	18.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	9.1		9.6	12.2	13.4	11.8	18.6
LOS	B	A		A	B	B	B	B
Approach Delay		10.5		9.6		13.3		16.8
Approach LOS		B		A		B		B

Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 42.5

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.58

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 55.9%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	55	146	736	4	31	100	287
v/c Ratio	0.23	0.10	0.50	0.01	0.07	0.26	0.58
Control Delay	14.2	9.1	9.6	12.2	13.4	11.8	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	9.1	9.6	12.2	13.4	11.8	18.6
Queue Length 50th (ft)	7	8	43	1	5	17	52
Queue Length 95th (ft)	41	32	136	m5	m22	38	137
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	239	1494	1467	295	704	390	709
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.10	0.50	0.01	0.04	0.26	0.40






















Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

7: Park 40 Blvd & Sherrill Blvd

09/07/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	51	120	15	41	437	199	4	25	4	92	233	31
Future Volume (vph)	51	120	15	41	437	199	4	25	4	92	233	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			4.5		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	0.98			0.96		1.00	0.98		1.00	0.98	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3638			3373		1770	1827		1770	1830	
Fl _t Permitted	0.30	1.00			0.93		0.62	1.00		0.41	1.00	
Satd. Flow (perm)	586	3638			3147		1164	1827		771	1830	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	130	16	45	475	216	4	27	4	100	253	34
RTOR Reduction (vph)	0	10	0	0	75	0	0	3	0	0	9	0
Lane Group Flow (vph)	55	136	0	0	661	0	4	28	0	100	278	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.4	17.4			18.9		7.0	6.4		17.0	11.4	
Effective Green, g (s)	17.4	17.4			18.9		7.0	6.4		17.0	11.4	
Actuated g/C Ratio	0.37	0.37			0.40		0.15	0.14		0.36	0.24	
Clearance Time (s)	6.0	6.0			4.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	215	1335			1254		179	246		394	440	
v/s Ratio Prot		0.04					0.00	0.02		c0.03	c0.15	
v/s Ratio Perm	0.09				c0.21		0.00			0.06		
v/c Ratio	0.26	0.10			0.53		0.02	0.11		0.25	0.63	
Uniform Delay, d ₁	10.5	9.9			10.8		17.3	18.0		10.6	16.1	
Progression Factor	1.00	1.00			1.00		1.02	1.01		1.00	1.00	
Incremental Delay, d ₂	2.9	0.2			1.6		0.1	0.2		0.3	2.9	
Delay (s)	13.3	10.0			12.4		17.6	18.4		11.0	19.1	
Level of Service	B	B			B		B	B		B	B	
Approach Delay (s)		10.9			12.4			18.3			17.0	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			13.7								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			47.4								Sum of lost time (s)	18.0
Intersection Capacity Utilization			55.9%								ICU Level of Service	B
Analysis Period (min)			15									
c Critical Lane Group												

Timings

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	320	349	286	212	82	109	304	14	357
Future Volume (vph)	320	349	286	212	82	109	304	14	357
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	32.0	32.0	32.0	15.0	15.0	12.0	50.0	12.0	50.0
Total Split (%)	29.4%	29.4%	29.4%	13.8%	13.8%	11.0%	45.9%	11.0%	45.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	23.1	23.1	23.1	9.0	9.0	55.8	53.6	51.9	45.6
Actuated g/C Ratio	0.21	0.21	0.21	0.08	0.08	0.51	0.49	0.48	0.42
v/c Ratio	0.70	0.69	0.54	0.81	0.63	0.29	0.29	0.03	0.38
Control Delay	50.5	44.7	7.6	71.7	65.3	16.0	15.0	13.3	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	44.7	7.6	71.7	65.3	16.0	15.0	13.3	20.2
LOS	D	D	A	E	E	B	B	B	C
Approach Delay		34.9			69.8		15.2		20.0
Approach LOS		C			E		B		C

Intersection Summary

Cycle Length: 109

Actuated Cycle Length: 109

Offset: 85 (78%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 31.3

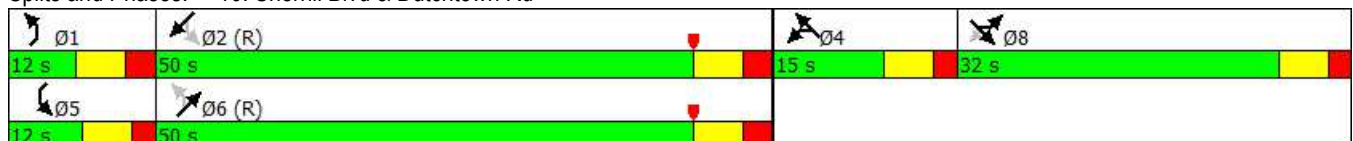
Intersection LOS: C

Intersection Capacity Utilization 61.0%

ICU Level of Service B

Analysis Period (min) 15










Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	237	490	311	230	98	118	500	15	556
v/c Ratio	0.70	0.69	0.54	0.81	0.63	0.29	0.29	0.03	0.38
Control Delay	50.5	44.7	7.6	71.7	65.3	16.0	15.0	13.3	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.5	44.7	7.6	71.7	65.3	16.0	15.0	13.3	20.2
Queue Length 50th (ft)	164	170	0	82	65	41	77	5	123
Queue Length 95th (ft)	258	227	70	#145	#137	74	142	16	170
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	384	799	614	283	155	400	1701	467	1456
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.61	0.51	0.81	0.63	0.29	0.29	0.03	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	320	349	286	212	82	8	109	304	156	14	357	155
Future Volume (vph)	320	349	286	212	82	8	109	304	156	14	357	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3352	1583	3433	1837		1770	3359		1770	3379	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.35	1.00		0.47	1.00	
Satd. Flow (perm)	1610	3352	1583	3433	1837		658	3359		873	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	348	379	311	230	89	9	118	330	170	15	388	168
RTOR Reduction (vph)	0	0	245	0	4	0	0	54	0	0	43	0
Lane Group Flow (vph)	237	490	66	230	94	0	118	446	0	15	513	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	23.1	23.1	23.1	9.0	9.0		56.3	50.0		48.0	45.6	
Effective Green, g (s)	23.1	23.1	23.1	9.0	9.0		56.3	50.0		48.0	45.6	
Actuated g/C Ratio	0.21	0.21	0.21	0.08	0.08		0.52	0.46		0.44	0.42	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	341	710	335	283	151		404	1540		404	1413	
v/s Ratio Prot	c0.15	0.15		c0.07	0.05		c0.02	c0.13		0.00	c0.15	
v/s Ratio Perm			0.04				0.13			0.02		
v/c Ratio	0.70	0.69	0.20	0.81	0.62		0.29	0.29		0.04	0.36	
Uniform Delay, d1	39.7	39.6	35.3	49.2	48.4		14.2	18.4		17.2	21.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.0	2.9	0.3	16.1	7.8		0.4	0.5		0.0	0.7	
Delay (s)	45.7	42.5	35.6	65.3	56.2		14.6	18.9		17.3	22.5	
Level of Service	D	D	D	E	E		B	B		B	C	
Approach Delay (s)		41.2			62.6			18.1			22.3	
Approach LOS		D			E			B			C	

Intersection Summary

HCM 2000 Control Delay	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	109.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

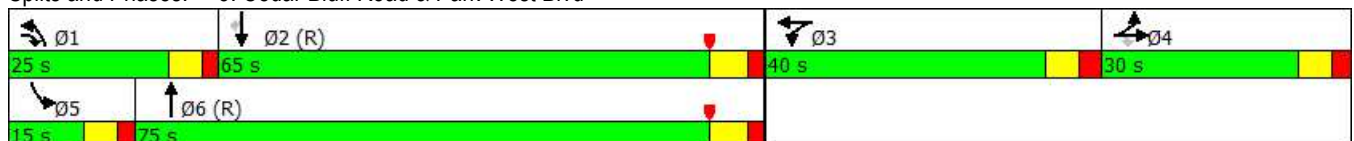
2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	62	21	300	255	65	154	506	49	855	26
Future Volume (vph)	62	21	300	255	65	154	506	49	855	26
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	24.9	24.9	43.0	25.0	25.0	14.6	86.2	11.8	80.0	80.0
Actuated g/C Ratio	0.16	0.16	0.27	0.16	0.16	0.09	0.54	0.07	0.50	0.50
v/c Ratio	0.25	0.73	0.43	0.70	0.54	0.53	0.23	0.41	0.51	0.03
Control Delay	60.4	81.8	50.5	78.1	37.9	63.6	15.2	78.6	25.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	81.8	50.5	78.1	37.9	63.6	15.2	78.6	25.6	0.1
LOS	E	F	D	E	D	E	B	E	C	A
Approach Delay		65.3			51.8		25.5		27.6	
Approach LOS		E			D		C		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 37.3
 Intersection Capacity Utilization 58.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service B

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd

























Queues
3: Cedar Bluff Road & Park West Blvd

2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	67	176	173	177	336	167	616	53	929	28
v/c Ratio	0.25	0.73	0.43	0.70	0.54	0.53	0.23	0.41	0.51	0.03
Control Delay	60.4	81.8	50.5	78.1	37.9	63.6	15.2	78.6	25.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	81.8	50.5	78.1	37.9	63.6	15.2	78.6	25.6	0.1
Queue Length 50th (ft)	62	186	156	195	103	89	124	54	253	0
Queue Length 95th (ft)	110	274	224	275	150	129	160	108	299	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	295	266	466	364	831	450	2703	137	1805	882
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.66	0.37	0.49	0.40	0.37	0.23	0.39	0.51	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

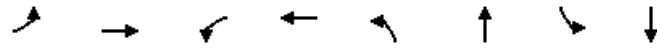
2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	21	300	255	65	152	154	506	61	49	855	26
Future Volume (vph)	62	21	300	255	65	152	154	506	61	49	855	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1547	1512	1618	3214		3433	5004		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1547	1512	1618	3214		3433	5004		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	23	326	277	71	165	167	550	66	53	929	28
RTOR Reduction (vph)	0	0	0	0	119	0	0	8	0	0	0	14
Lane Group Flow (vph)	67	176	173	177	217	0	167	608	0	53	929	14
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	21.9	21.9	34.5	22.5	22.5		12.6	82.5		7.6	77.5	77.5
Effective Green, g (s)	24.9	24.9	38.5	25.0	25.0		14.6	85.0		10.6	80.0	80.0
Actuated g/C Ratio	0.16	0.16	0.24	0.16	0.16		0.09	0.53		0.07	0.50	0.50
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	267	240	363	252	502		313	2658		115	1805	807
v/s Ratio Prot	0.04	c0.11	0.04	c0.11	0.07		c0.05	0.12		0.03	c0.26	
v/s Ratio Perm			0.07									0.01
v/c Ratio	0.25	0.73	0.48	0.70	0.43		0.53	0.23		0.46	0.51	0.02
Uniform Delay, d1	59.4	64.4	52.1	64.0	61.1		69.4	20.0		71.9	26.9	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.83	0.71		0.98	0.84	1.00
Incremental Delay, d2	0.4	10.4	0.7	8.0	0.4		1.3	0.2		2.0	1.0	0.0
Delay (s)	59.7	74.8	52.8	71.9	61.5		59.2	14.5		72.8	23.6	20.2
Level of Service	E	E	D	E	E		E	B		E	C	C
Approach Delay (s)		63.2			65.1			24.0			26.1	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			38.5				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			58.6%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
7: Park 40 Blvd & Sherrill Blvd

2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

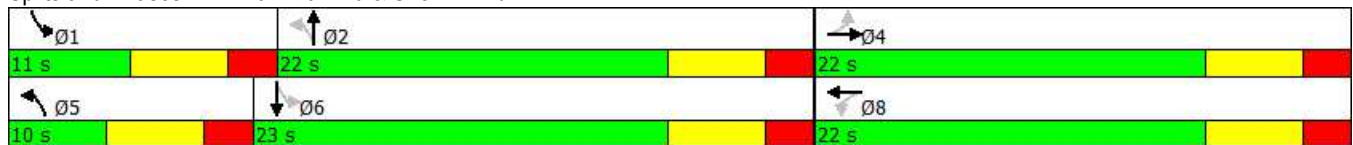


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↗
Traffic Volume (vph)	33	344	20	182	19	36	158	106
Future Volume (vph)	33	344	20	182	19	36	158	106
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	10.0	22.0
Total Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	11.0	23.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.2%	40.0%	20.0%	41.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	21.0	21.0		21.0	7.2	8.6	10.8	10.7
Actuated g/C Ratio	0.51	0.51		0.51	0.18	0.21	0.26	0.26
v/c Ratio	0.06	0.20		0.18	0.07	0.15	0.47	0.27
Control Delay	10.8	9.5		7.6	10.1	12.9	15.2	13.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	9.5		7.6	10.1	12.9	15.2	13.3
LOS	B	A		A	B	B	B	B
Approach Delay		9.7		7.6		12.1		14.4
Approach LOS		A		A		B		B

Intersection Summary








Cycle Length: 55
 Actuated Cycle Length: 41.1
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 48.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd
























Queues
7: Park 40 Blvd & Sherrill Blvd

2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	383	299	21	57	172	132
v/c Ratio	0.06	0.20	0.18	0.07	0.15	0.47	0.27
Control Delay	10.8	9.5	7.6	10.1	12.9	15.2	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	9.5	7.6	10.1	12.9	15.2	13.3
Queue Length 50th (ft)	4	21	12	4	6	29	19
Queue Length 95th (ft)	23	70	47	12	32	60	64
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	565	1882	1618	311	715	367	794
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.20	0.18	0.07	0.08	0.47	0.17
Intersection Summary							

HCM Signalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	33	344	8	20	182	73	19	36	17	158	106	16
Future Volume (vph)	33	344	8	20	182	73	19	36	17	158	106	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	1.00			0.96		1.00	0.95		1.00	0.98	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3685			3386		1770	1775		1770	1827	
Fl _t Permitted	0.57	1.00			0.91		0.95	1.00		0.45	1.00	
Satd. Flow (perm)	1108	3685			3096		1774	1775		837	1827	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	374	9	22	198	79	21	39	18	172	115	17
RTOR Reduction (vph)	0	2	0	0	46	0	0	16	0	0	11	0
Lane Group Flow (vph)	36	381	0	0	253	0	21	41	0	172	121	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.6	19.6			19.6		4.9	4.2		14.3	8.9	
Effective Green, g (s)	19.6	19.6			19.6		4.9	4.2		14.3	8.9	
Actuated g/C Ratio	0.42	0.42			0.42		0.10	0.09		0.30	0.19	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	460	1530			1285		184	157		360	344	
v/s Ratio Prot		c0.10					0.00	0.02		c0.05	0.07	
v/s Ratio Perm	0.03				0.08		0.01			c0.09		
v/c Ratio	0.08	0.25			0.20		0.11	0.26		0.48	0.35	
Uniform Delay, d ₁	8.3	9.0			8.8		19.2	20.0		13.0	16.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.3	0.4			0.3		0.3	0.9		1.0	0.6	
Delay (s)	8.7	9.4			9.1		19.5	20.9		14.0	17.3	
Level of Service	A	A			A		B	C		B	B	
Approach Delay (s)		9.3			9.1			20.5			15.4	
Approach LOS		A			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			11.7				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			47.2				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			48.9%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Timings
10: Sherrill Blvd & Dutchtown Rd

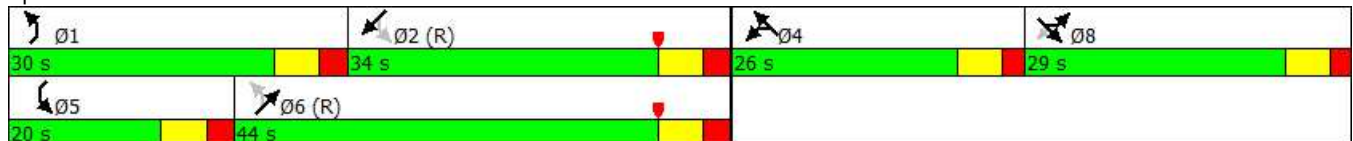
2019 Projected PM Peak MIT w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	321	171	107	407	238	261	596	12	433
Future Volume (vph)	321	171	107	407	238	261	596	12	433
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	29.0	29.0	29.0	26.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	24.4%	24.4%	24.4%	21.8%	21.8%	25.2%	37.0%	16.8%	28.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	23.6	23.6	23.6	19.4	19.4	57.5	52.3	39.6	33.6
Actuated g/C Ratio	0.20	0.20	0.20	0.16	0.16	0.48	0.44	0.33	0.28
v/c Ratio	0.99	0.50	0.16	0.79	0.90	0.65	0.50	0.05	0.53
Control Delay	95.3	48.3	0.5	58.9	81.1	26.7	25.8	18.4	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.3	48.3	0.5	58.9	81.1	26.7	25.8	18.4	38.6
LOS	F	D	A	E	F	C	C	B	D
Approach Delay		65.0			67.4		26.1		38.1
Approach LOS		E			E		C		D

Intersection Summary










Cycle Length: 119
 Actuated Cycle Length: 119
 Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 46.9
 Intersection Capacity Utilization 80.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2019 Projected PM Peak MIT w MOB
Parkwest Medical Center


























									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	349	186	116	442	274	284	762	13	524
v/c Ratio	0.99	0.50	0.16	0.79	0.90	0.65	0.50	0.05	0.53
Control Delay	95.3	48.3	0.5	58.9	81.1	26.7	25.8	18.4	38.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.3	48.3	0.5	58.9	81.1	26.7	25.8	18.4	38.6
Queue Length 50th (ft)	~284	129	0	169	206	130	193	5	175
Queue Length 95th (ft)	#471	204	0	226	#362	194	304	16	249
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	351	369	717	576	312	498	1530	391	990
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.50	0.16	0.77	0.88	0.57	0.50	0.03	0.53

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2019 Projected PM Peak MIT w MOB
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations			 	 				 			 	
Traffic Volume (vph)	321	171	107	407	238	14	261	596	105	12	433	49
Future Volume (vph)	321	171	107	407	238	14	261	596	105	12	433	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3460		1770	3486	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.28	1.00		0.36	1.00	
Satd. Flow (perm)	1770	1863	2787	3433	1847		524	3460		676	3486	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	349	186	116	442	259	15	284	648	114	13	471	53
RTOR Reduction (vph)	0	0	93	0	2	0	0	11	0	0	6	0
Lane Group Flow (vph)	349	186	23	442	272	0	284	751	0	13	518	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	23.6	23.6	23.6	19.4	19.4		57.5	48.4		36.2	33.6	
Effective Green, g (s)	23.6	23.6	23.6	19.4	19.4		57.5	48.4		36.2	33.6	
Actuated g/C Ratio	0.20	0.20	0.20	0.16	0.16		0.48	0.41		0.30	0.28	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	351	369	552	559	301		435	1407		229	984	
v/s Ratio Prot	c0.20	0.10		0.13	c0.15		c0.10	0.22		0.00	0.15	
v/s Ratio Perm			0.01				c0.22			0.02		
v/c Ratio	0.99	0.50	0.04	0.79	0.90		0.65	0.53		0.06	0.53	
Uniform Delay, d1	47.6	42.5	38.6	47.8	48.9		20.4	26.8		29.0	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	46.3	1.1	0.0	7.5	28.6		3.5	1.5		0.1	2.0	
Delay (s)	93.9	43.6	38.6	55.4	77.5		23.9	28.2		29.1	38.0	
Level of Service	F	D	D	E	E		C	C		C	D	
Approach Delay (s)		69.7			63.8			27.0			37.8	
Approach LOS		E			E			C			D	

Intersection Summary

HCM 2000 Control Delay	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings

3: Cedar Bluff Road & Park West Blvd

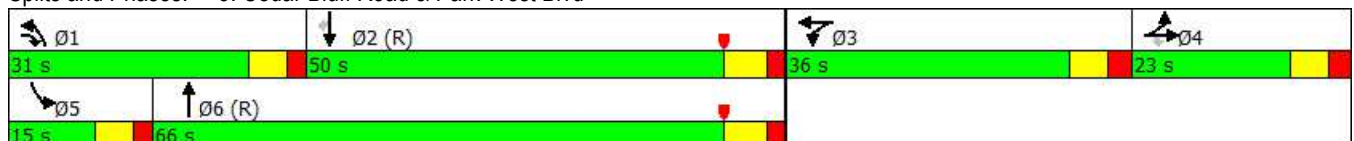
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	78	38	268	115	197	290	733	49	513	44
Future Volume (vph)	78	38	268	115	197	290	733	49	513	44
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	23.0	23.0	31.0	36.0	36.0	31.0	66.0	15.0	50.0	50.0
Total Split (%)	16.4%	16.4%	22.1%	25.7%	25.7%	22.1%	47.1%	10.7%	35.7%	35.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	22.5	22.5	45.6	19.9	19.9	19.6	74.0	11.5	62.5	62.5
Actuated g/C Ratio	0.16	0.16	0.33	0.14	0.14	0.14	0.53	0.08	0.45	0.45
v/c Ratio	0.31	0.67	0.33	0.49	0.69	0.65	0.33	0.37	0.35	0.06
Control Delay	53.8	68.1	36.2	61.8	49.7	53.5	14.6	64.9	23.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	68.1	36.2	61.8	49.7	53.5	14.6	64.9	23.6	0.1
LOS	D	E	D	E	D	D	B	E	C	A
Approach Delay		52.7			52.4		24.8		25.2	
Approach LOS		D			D		C		C	

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 34.0
 Intersection Capacity Utilization 52.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A











Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues

3: Cedar Bluff Road & Park West Blvd























09/07/2017

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	85	169	163	112	380	315	886	53	558	48
v/c Ratio	0.31	0.67	0.33	0.49	0.69	0.65	0.33	0.37	0.35	0.06
Control Delay	53.8	68.1	36.2	61.8	49.7	53.5	14.6	64.9	23.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	68.1	36.2	61.8	49.7	53.5	14.6	64.9	23.6	0.1
Queue Length 50th (ft)	69	152	116	104	139	145	167	44	141	0
Queue Length 95th (ft)	120	233	169	168	191	197	204	92	180	1
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	284	260	572	369	825	662	2657	153	1611	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.65	0.28	0.30	0.46	0.48	0.33	0.35	0.35	0.06
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

3: Cedar Bluff Road & Park West Blvd

09/07/2017

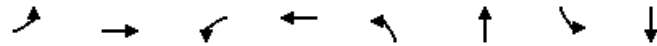
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	38	268	115	197	141	290	733	82	49	513	44
Future Volume (vph)	78	38	268	115	197	141	290	733	82	49	513	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1576	1512	1618	3302		3433	5009		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1576	1512	1618	3302		3433	5009		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	41	291	125	214	153	315	797	89	53	558	48
RTOR Reduction (vph)	0	0	0	0	78	0	0	8	0	0	0	27
Lane Group Flow (vph)	85	169	163	112	302	0	315	878	0	53	558	21
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	19.5	19.5	37.1	17.4	17.4		17.6	70.3		7.3	60.0	60.0
Effective Green, g (s)	22.5	22.5	41.1	19.9	19.9		19.6	72.8		10.3	62.5	62.5
Actuated g/C Ratio	0.16	0.16	0.29	0.14	0.14		0.14	0.52		0.07	0.45	0.45
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	276	253	443	229	469		480	2604		128	1611	720
v/s Ratio Prot	0.05	c0.11	0.05	0.07	c0.09		c0.09	c0.18		0.03	0.15	
v/s Ratio Perm			0.06									0.01
v/c Ratio	0.31	0.67	0.37	0.49	0.64		0.66	0.34		0.41	0.35	0.03
Uniform Delay, d1	51.9	55.2	39.2	55.4	56.7		57.0	19.6		62.0	25.4	21.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.84	0.70		0.95	0.84	1.00
Incremental Delay, d2	0.5	5.9	0.4	1.2	2.7		2.6	0.3		1.5	0.6	0.1
Delay (s)	52.3	61.1	39.5	56.6	59.4		50.3	14.0		60.5	21.8	21.8
Level of Service	D	E	D	E	E		D	B		E	C	C
Approach Delay (s)		50.9			58.7			23.5			24.9	
Approach LOS		D			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			34.2	HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			140.0	Sum of lost time (s)				15.5				
Intersection Capacity Utilization			52.1%	ICU Level of Service				A				
Analysis Period (min)			15									

c Critical Lane Group

Timings

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	29	281	32	290	8	22	124	71
Future Volume (vph)	29	281	32	290	8	22	124	71
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	20.0%	40.0%	20.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	21.8	21.8		21.8	7.2	9.0	9.0	10.6
Actuated g/C Ratio	0.61	0.61		0.61	0.20	0.25	0.25	0.30
v/c Ratio	0.05	0.15		0.21	0.02	0.11	0.35	0.18
Control Delay	10.7	8.4		8.4	8.8	10.0	11.8	10.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	8.4		8.4	8.8	10.0	11.8	10.4
LOS	B	A		A	A	B	B	B
Approach Delay		8.6		8.4		9.8		11.2
Approach LOS		A		A		A		B

Intersection Summary

Cycle Length: 50

Actuated Cycle Length: 35.9

Natural Cycle: 50

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 9.1

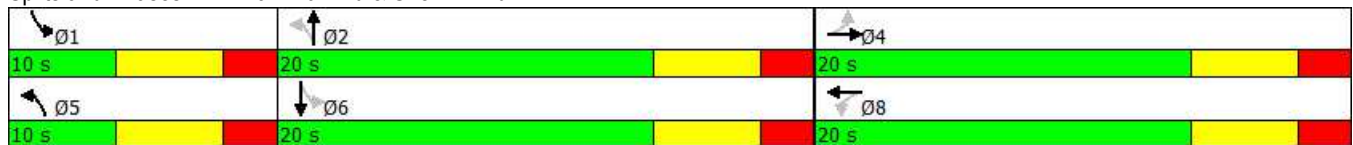
Intersection LOS: A

Intersection Capacity Utilization 47.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	326	409	9	51	135	100
v/c Ratio	0.05	0.15	0.21	0.02	0.11	0.35	0.18
Control Delay	10.7	8.4	8.4	8.8	10.0	11.8	10.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	8.4	8.4	8.8	10.0	11.8	10.4
Queue Length 50th (ft)	3	17	21	2	3	20	11
Queue Length 95th (ft)	21	56	70	7	25	45	46
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	605	2227	1909	363	743	385	808
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.15	0.21	0.02	0.07	0.35	0.12

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Park 40 Blvd & Sherrill Blvd

09/07/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	281	19	32	290	54	8	22	25	124	71	21
Future Volume (vph)	29	281	19	32	290	54	8	22	25	124	71	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	0.99			0.98		1.00	0.92		1.00	0.97	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3663			3448		1770	1715		1770	1798	
Fl _t Permitted	0.51	1.00			0.90		1.00	1.00		0.65	1.00	
Satd. Flow (perm)	996	3663			3125		1863	1715		1202	1798	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	305	21	35	315	59	9	24	27	135	77	23
RTOR Reduction (vph)	0	8	0	0	22	0	0	25	0	0	20	0
Lane Group Flow (vph)	32	318	0	0	387	0	9	26	0	135	80	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.4	18.4			18.4		4.4	3.8		9.2	6.2	
Effective Green, g (s)	18.4	18.4			18.4		4.4	3.8		9.2	6.2	
Actuated g/C Ratio	0.43	0.43			0.43		0.10	0.09		0.21	0.14	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	424	1560			1331		188	150		295	258	
v/s Ratio Prot		0.09					0.00	0.02		c0.03	0.04	
v/s Ratio Perm	0.03				c0.12		0.00			c0.07		
v/c Ratio	0.08	0.20			0.29		0.05	0.18		0.46	0.31	
Uniform Delay, d ₁	7.4	7.8			8.1		17.5	18.2		14.5	16.6	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.3	0.3			0.6		0.1	0.6		1.1	0.7	
Delay (s)	7.7	8.1			8.7		17.6	18.8		15.7	17.3	
Level of Service	A	A			A		B	B		B	B	
Approach Delay (s)		8.1			8.7			18.6			16.4	
Approach LOS		A			A			B			B	
Intersection Summary												
HCM 2000 Control Delay			10.7				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			43.2				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			47.6%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	76	199	157	123	242	136	168	31	67
Future Volume (vph)	76	199	157	123	242	136	168	31	67
Turn Type	Split	NA	Perm	Split	NA	Prot	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8					2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	20.0	20.0	20.0	20.0	20.0	15.0	30.0	15.0	30.0
Total Split (%)	23.5%	23.5%	23.5%	23.5%	23.5%	17.6%	35.3%	17.6%	35.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	11.3	11.3	11.3	14.0	14.0	9.9	33.4	31.8	24.8
Actuated g/C Ratio	0.13	0.13	0.13	0.16	0.16	0.12	0.39	0.37	0.29
v/c Ratio	0.35	0.50	0.44	0.24	0.91	0.72	0.23	0.08	0.18
Control Delay	37.4	37.7	6.8	32.1	70.0	58.4	12.0	13.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	37.7	6.8	32.1	70.0	58.4	12.0	13.2	10.8
LOS	D	D	A	C	E	E	B	B	B
Approach Delay		26.4			57.7		26.6		11.2
Approach LOS		C			E		C		B

Intersection Summary

Cycle Length: 85

Actuated Cycle Length: 85

Offset: 65 (76%), Referenced to phase 2:SWTL and 6:NET, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 32.6

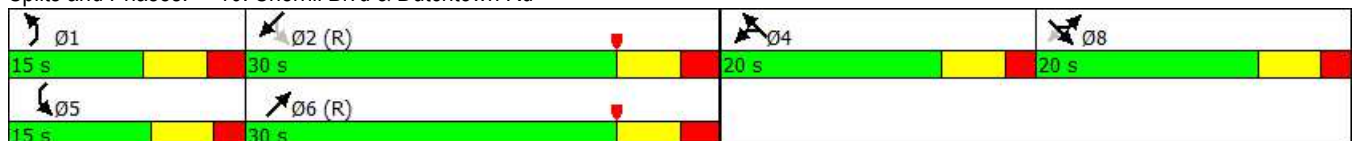
Intersection LOS: C

Intersection Capacity Utilization 57.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues

10: Sherrill Blvd & Dutchtown Rd

09/07/2017



Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	75	224	171	134	279	148	320	34	180
v/c Ratio	0.35	0.50	0.44	0.24	0.91	0.72	0.23	0.08	0.18
Control Delay	37.4	37.7	6.8	32.1	70.0	58.4	12.0	13.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.4	37.7	6.8	32.1	70.0	58.4	12.0	13.2	10.8
Queue Length 50th (ft)	40	61	0	32	147	77	35	9	15
Queue Length 95th (ft)	82	95	36	57	#293	#182	71	25	40
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	265	557	431	565	306	205	1385	496	1017
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.40	0.40	0.24	0.91	0.72	0.23	0.07	0.18


























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	76	199	157	123	242	15	136	168	126	31	67	98
Future Volume (vph)	76	199	157	123	242	15	136	168	126	31	67	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3384	1583	3433	1847		1770	3312		1770	3224	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.56	1.00	
Satd. Flow (perm)	1610	3384	1583	3433	1847		1770	3312		1039	3224	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	216	171	134	263	16	148	183	137	34	73	107
RTOR Reduction (vph)	0	0	148	0	3	0	0	87	0	0	76	0
Lane Group Flow (vph)	75	224	23	134	276	0	148	233	0	34	104	0
Turn Type	Split	NA	Perm	Split	NA		Prot	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8							2		
Actuated Green, G (s)	11.3	11.3	11.3	14.0	14.0		9.9	31.0		29.0	24.8	
Effective Green, g (s)	11.3	11.3	11.3	14.0	14.0		9.9	31.0		29.0	24.8	
Actuated g/C Ratio	0.13	0.13	0.13	0.16	0.16		0.12	0.36		0.34	0.29	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	214	449	210	565	304		206	1207		390	940	
v/s Ratio Prot	0.05	c0.07		0.04	c0.15		c0.08	c0.07		0.00	0.03	
v/s Ratio Perm			0.01							0.03		
v/c Ratio	0.35	0.50	0.11	0.24	0.91		0.72	0.19		0.09	0.11	
Uniform Delay, d1	33.5	34.2	32.4	30.9	34.9		36.2	18.5		18.8	22.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.9	0.2	0.2	29.1		11.3	0.4		0.1	0.2	
Delay (s)	34.5	35.1	32.6	31.1	64.0		47.5	18.8		18.9	22.3	
Level of Service	C	D	C	C	E		D	B		B	C	
Approach Delay (s)		34.1			53.3			27.9			21.7	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings

3: Cedar Bluff Road & Park West Blvd

09/07/2017

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	103	11	267	171	161	177	668	38	725	27
Future Volume (vph)	103	11	267	171	161	177	668	38	725	27
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	30.0	30.0	25.0	40.0	40.0	25.0	75.0	15.0	65.0	65.0
Total Split (%)	18.8%	18.8%	15.6%	25.0%	25.0%	15.6%	46.9%	9.4%	40.6%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	42.5	24.0	24.0	15.8	89.4	11.2	81.5	81.5
Actuated g/C Ratio	0.15	0.15	0.27	0.15	0.15	0.10	0.56	0.07	0.51	0.51
v/c Ratio	0.45	0.68	0.38	0.69	0.63	0.57	0.29	0.34	0.43	0.03
Control Delay	67.1	79.5	49.1	78.4	43.1	64.2	15.0	78.2	24.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	79.5	49.1	78.4	43.1	64.2	15.0	78.2	24.3	0.1
LOS	E	E	D	E	D	E	B	E	C	A
Approach Delay		65.1			53.8		24.3		26.1	
Approach LOS		E			D		C		C	

Intersection Summary

Cycle Length: 160

Actuated Cycle Length: 160

Offset: 50 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 36.5

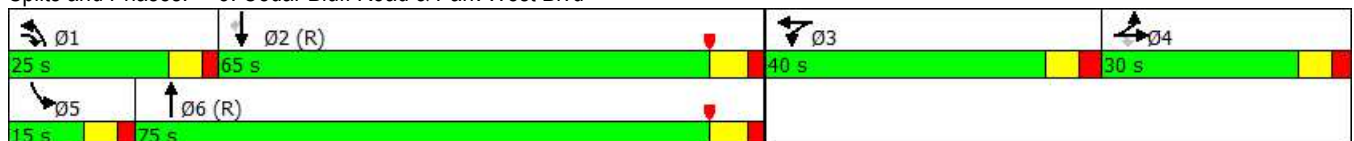
Intersection LOS: D

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15











Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues

3: Cedar Bluff Road & Park West Blvd























09/07/2017

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	112	151	151	167	382	192	822	41	788	29
v/c Ratio	0.45	0.68	0.38	0.69	0.63	0.57	0.29	0.34	0.43	0.03
Control Delay	67.1	79.5	49.1	78.4	43.1	64.2	15.0	78.2	24.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.1	79.5	49.1	78.4	43.1	64.2	15.0	78.2	24.3	0.1
Queue Length 50th (ft)	109	160	136	184	130	103	164	43	211	0
Queue Length 95th (ft)	169	234	191	262	180	146	207	89	258	0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	292	260	451	364	843	450	2799	132	1837	895
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.58	0.33	0.46	0.45	0.43	0.29	0.31	0.43	0.03
Intersection Summary										

HCM Signalized Intersection Capacity Analysis

3: Cedar Bluff Road & Park West Blvd

09/07/2017

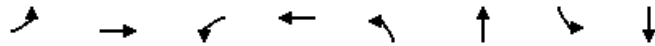
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	11	267	171	161	173	177	668	88	38	725	27
Future Volume (vph)	103	11	267	171	161	173	177	668	88	38	725	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.86	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1533	1512	1618	3253		3433	4996		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1533	1512	1618	3253		3433	4996		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	12	290	186	175	188	192	726	96	41	788	29
RTOR Reduction (vph)	0	0	0	0	122	0	0	9	0	0	0	14
Lane Group Flow (vph)	112	151	151	167	260	0	192	813	0	41	788	15
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	20.3	20.3	34.1	21.5	21.5		13.8	85.7		7.0	78.9	78.9
Effective Green, g (s)	23.3	23.3	38.1	24.0	24.0		15.8	88.2		10.0	81.4	81.4
Actuated g/C Ratio	0.15	0.15	0.24	0.15	0.15		0.10	0.55		0.06	0.51	0.51
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	250	223	360	242	487		339	2754		109	1836	821
v/s Ratio Prot	0.07	c0.10	0.04	c0.10	0.08		c0.06	0.16		0.02	c0.22	
v/s Ratio Perm			0.06									0.01
v/c Ratio	0.45	0.68	0.42	0.69	0.53		0.57	0.30		0.38	0.43	0.02
Uniform Delay, d1	62.5	64.8	51.6	64.5	62.8		68.8	19.2		72.0	24.7	19.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.85	0.72		1.01	0.87	1.00
Incremental Delay, d2	0.9	7.2	0.6	7.6	0.9		1.6	0.3		1.5	0.7	0.0
Delay (s)	63.4	72.0	52.2	72.0	63.7		59.8	14.2		73.9	22.2	19.5
Level of Service	E	E	D	E	E		E	B		E	C	B
Approach Delay (s)		62.4			66.2			22.8			24.6	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			37.6					HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			160.0					Sum of lost time (s)		15.5		
Intersection Capacity Utilization			54.5%					ICU Level of Service		A		
Analysis Period (min)			15									

c Critical Lane Group

Timings

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	33	206	19	238	6	33	144	94
Future Volume (vph)	33	206	19	238	6	33	144	94
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	10.0	22.0
Total Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	11.0	23.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.2%	40.0%	20.0%	41.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effect Green (s)	21.0	21.0		21.0	7.2	8.5	10.8	10.6
Actuated g/C Ratio	0.51	0.51		0.51	0.18	0.21	0.26	0.26
v/c Ratio	0.07	0.12		0.22	0.02	0.15	0.43	0.25
Control Delay	10.8	9.2		8.1	9.5	12.3	14.2	12.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	9.2		8.1	9.5	12.3	14.2	12.6
LOS	B	A		A	A	B	B	B
Approach Delay		9.4		8.1		12.0		13.5
Approach LOS		A		A		B		B

Intersection Summary

Cycle Length: 55

Actuated Cycle Length: 41

Natural Cycle: 55

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.43

Intersection Signal Delay: 10.3

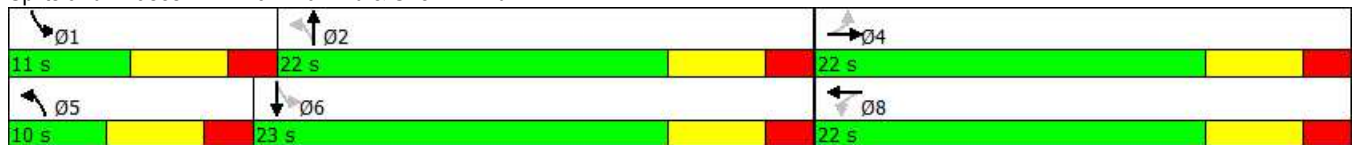
Intersection LOS: B

Intersection Capacity Utilization 47.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues

7: Park 40 Blvd & Sherrill Blvd

09/07/2017



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	36	234	368	7	58	157	123
v/c Ratio	0.07	0.12	0.22	0.02	0.15	0.43	0.25
Control Delay	10.8	9.2	8.1	9.5	12.3	14.2	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	9.2	8.1	9.5	12.3	14.2	12.6
Queue Length 50th (ft)	4	12	16	1	6	26	17
Queue Length 95th (ft)	23	44	58	6	31	55	59
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	530	1882	1659	312	711	367	793
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.12	0.22	0.02	0.08	0.43	0.16

Intersection Summary

HCM Signalized Intersection Capacity Analysis

7: Park 40 Blvd & Sherrill Blvd



















09/07/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	206	9	19	238	81	6	33	20	144	94	19
Future Volume (vph)	33	206	9	19	238	81	6	33	20	144	94	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	0.99			0.96		1.00	0.94		1.00	0.97	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3675			3403		1770	1757		1770	1815	
Fl _t Permitted	0.53	1.00			0.93		0.98	1.00		0.45	1.00	
Satd. Flow (perm)	1037	3675			3173		1817	1757		847	1815	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	224	10	21	259	88	7	36	22	157	102	21
RTOR Reduction (vph)	0	5	0	0	45	0	0	20	0	0	16	0
Lane Group Flow (vph)	36	229	0	0	323	0	7	38	0	157	107	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.6	19.6			19.6		4.8	4.1		14.2	8.8	
Effective Green, g (s)	19.6	19.6			19.6		4.8	4.1		14.2	8.8	
Actuated g/C Ratio	0.42	0.42			0.42		0.10	0.09		0.30	0.19	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	431	1529			1320		184	152		361	339	
v/s Ratio Prot		0.06					0.00	0.02		c0.05	0.06	
v/s Ratio Perm	0.03				c0.10		0.00			c0.08		
v/c Ratio	0.08	0.15			0.24		0.04	0.25		0.43	0.31	
Uniform Delay, d ₁	8.3	8.6			8.9		19.1	20.1		12.9	16.5	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.4	0.2			0.4		0.1	0.9		0.8	0.5	
Delay (s)	8.7	8.8			9.4		19.2	20.9		13.7	17.1	
Level of Service	A	A			A		B	C		B	B	
Approach Delay (s)		8.8			9.4			20.7			15.2	
Approach LOS		A			A			C			B	
Intersection Summary												
HCM 2000 Control Delay			11.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.36									
Actuated Cycle Length (s)			47.1				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			47.7%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Timings

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	159	228	87	277	142	111	165	39	199
Future Volume (vph)	159	228	87	277	142	111	165	39	199
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.5	14.5	14.5	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	29.0	29.0	29.0	26.0	26.0	30.0	44.0	20.0	34.0
Total Split (%)	24.4%	24.4%	24.4%	21.8%	21.8%	25.2%	37.0%	16.8%	28.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	16.6	16.6	16.6	16.0	16.0	65.6	57.4	59.3	51.9
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13	0.55	0.48	0.50	0.44
v/c Ratio	0.61	0.61	0.24	0.65	0.66	0.20	0.18	0.07	0.20
Control Delay	59.2	53.1	1.4	55.4	60.6	14.5	12.9	14.4	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	53.1	1.4	55.4	60.6	14.5	12.9	14.4	20.1
LOS	E	D	A	E	E	B	B	B	C
Approach Delay		45.2			57.2		13.3		19.4
Approach LOS		D			E		B		B

Intersection Summary

Cycle Length: 119

Actuated Cycle Length: 119

Offset: 73 (61%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 35.8

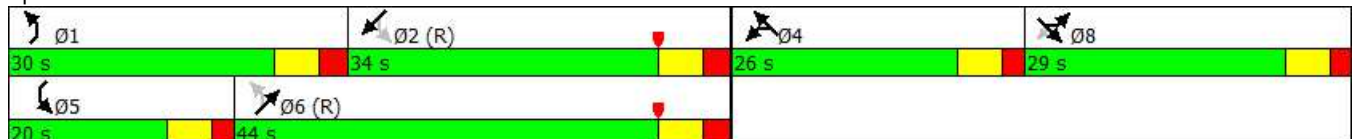
Intersection LOS: D

Intersection Capacity Utilization 50.6%

ICU Level of Service A

Analysis Period (min) 15










Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues

10: Sherrill Blvd & Dutchtown Rd


























09/07/2017

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	137	284	95	301	164	121	294	42	298
v/c Ratio	0.61	0.61	0.24	0.65	0.66	0.20	0.18	0.07	0.20
Control Delay	59.2	53.1	1.4	55.4	60.6	14.5	12.9	14.4	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	53.1	1.4	55.4	60.6	14.5	12.9	14.4	20.1
Queue Length 50th (ft)	110	114	0	114	120	40	39	13	60
Queue Length 95th (ft)	174	152	0	156	187	86	81	37	113
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	311	651	468	576	311	716	1664	675	1504
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.44	0.20	0.52	0.53	0.17	0.18	0.06	0.20
Intersection Summary									

HCM Signalized Intersection Capacity Analysis

10: Sherrill Blvd & Dutchtown Rd

09/07/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	159	228	87	277	142	9	111	165	106	39	199	75
Future Volume (vph)	159	228	87	277	142	9	111	165	106	39	199	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3369	1583	3433	1846		1770	3332		1770	3393	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.53	1.00		0.57	1.00	
Satd. Flow (perm)	1610	3369	1583	3433	1846		982	3332		1066	3393	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	173	248	95	301	154	10	121	179	115	42	216	82
RTOR Reduction (vph)	0	0	82	0	2	0	0	61	0	0	24	0
Lane Group Flow (vph)	137	284	13	301	162	0	121	233	0	42	274	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	16.6	16.6	16.6	16.0	16.0		65.6	56.1		57.7	51.9	
Effective Green, g (s)	16.6	16.6	16.6	16.0	16.0		65.6	56.1		57.7	51.9	
Actuated g/C Ratio	0.14	0.14	0.14	0.13	0.13		0.55	0.47		0.48	0.44	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	224	469	220	461	248		604	1570		551	1479	
v/s Ratio Prot	c0.09	0.08		0.09	c0.09		c0.02	c0.07		0.00	0.08	
v/s Ratio Perm			0.01				c0.09			0.03		
v/c Ratio	0.61	0.61	0.06	0.65	0.65		0.20	0.15		0.08	0.19	
Uniform Delay, d1	48.2	48.1	44.4	48.9	48.9		12.9	17.9		16.2	20.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	2.2	0.1	3.3	6.1		0.2	0.2		0.1	0.3	
Delay (s)	53.0	50.3	44.5	52.2	55.0		13.1	18.1		16.2	20.9	
Level of Service	D	D	D	D	D		B	B		B	C	
Approach Delay (s)		50.0			53.2			16.6			20.3	
Approach LOS		D			D			B			C	

Intersection Summary

HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	119.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

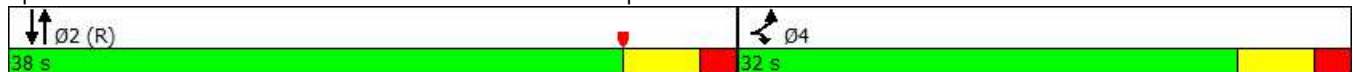
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	868	313	1280	1539
Future Volume (vph)	868	313	1280	1539
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	38.0	38.0
Total Split (%)	45.7%	45.7%	54.3%	54.3%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	25.7	25.7	36.3	36.3
Actuated g/C Ratio	0.37	0.37	0.52	0.52
v/c Ratio	0.77	0.57	0.42	0.63
Control Delay	23.6	21.2	11.2	11.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	21.2	11.2	11.2
LOS	C	C	B	B
Approach Delay	23.1		11.2	11.2
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 29 (41%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 14.7
 Intersection Capacity Utilization 64.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	977	306	1391	1673
v/c Ratio	0.77	0.57	0.42	0.63
Control Delay	23.6	21.2	11.2	11.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	21.2	11.2	11.2
Queue Length 50th (ft)	178	105	104	206
Queue Length 95th (ft)	238	181	134	252
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1389	588	3319	2647
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.70	0.52	0.42	0.63

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Background AM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↘	↗		↑↑↑	↑↑↑	
Traffic Volume (vph)	868	313	0	1280	1539	0
Future Volume (vph)	868	313	0	1280	1539	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.99	0.85		1.00	1.00	
Fl _t Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3464	1455		6408	5111	
Fl _t Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3464	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	943	340	0	1391	1673	0
RTOR Reduction (vph)	4	6	0	0	0	0
Lane Group Flow (vph)	973	300	0	1391	1673	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	23.7	23.7		34.3	34.3	
Effective Green, g (s)	25.7	25.7		36.3	36.3	
Actuated g/C Ratio	0.37	0.37		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1271	534		3323	2650	
v/s Ratio Prot	c0.28	0.21		0.22	c0.33	
v/s Ratio Perm						
v/c Ratio	0.77	0.56		0.42	0.63	
Uniform Delay, d ₁	19.5	17.7		10.4	12.1	
Progression Factor	1.00	1.00		1.00	0.81	
Incremental Delay, d ₂	2.5	0.8		0.4	1.0	
Delay (s)	22.0	18.5		10.8	10.8	
Level of Service	C	B		B	B	
Approach Delay (s)	21.2			10.8	10.8	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

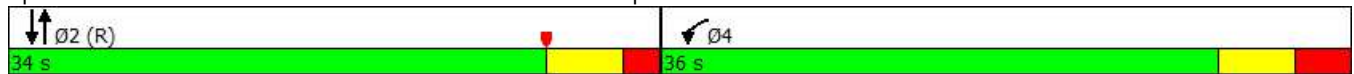
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	991	1814	678
Future Volume (vph)	991	1814	678
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	36.0	34.0	34.0
Total Split (%)	51.4%	48.6%	48.6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	28.8	33.2	33.2
Actuated g/C Ratio	0.41	0.47	0.47
v/c Ratio	0.74	0.62	0.31
Control Delay	20.7	14.7	6.3
Queue Delay	0.0	0.0	0.0
Total Delay	20.7	14.7	6.3
LOS	C	B	A
Approach Delay	20.7	14.7	6.3
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 34 (49%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 14.8
 Intersection Capacity Utilization 64.4%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1077	1972	737
v/c Ratio	0.74	0.62	0.31
Control Delay	20.7	14.7	6.3
Queue Delay	0.0	0.0	0.0
Total Delay	20.7	14.7	6.3
Queue Length 50th (ft)	191	217	43
Queue Length 95th (ft)	241	275	m52
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1613	3160	2390
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	69	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.67	0.64	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background AM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	991	0	1814	0	0	678
Future Volume (vph)	991	0	1814	0	0	678
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1077	0	1972	0	0	737
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1077	0	1972	0	0	737
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	25.8		31.2			31.2
Effective Green, g (s)	28.8		33.2			33.2
Actuated g/C Ratio	0.41		0.47			0.47
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1452		3156			2387
v/s Ratio Prot	c0.31		c0.30			0.15
v/s Ratio Perm						
v/c Ratio	0.74		0.62			0.31
Uniform Delay, d1	17.4		13.7			11.3
Progression Factor	1.00		0.96			0.51
Incremental Delay, d2	1.8		0.8			0.3
Delay (s)	19.3		14.0			6.1
Level of Service	B		B			A
Approach Delay (s)	19.3		14.0			6.1
Approach LOS	B		B			A

Intersection Summary

HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

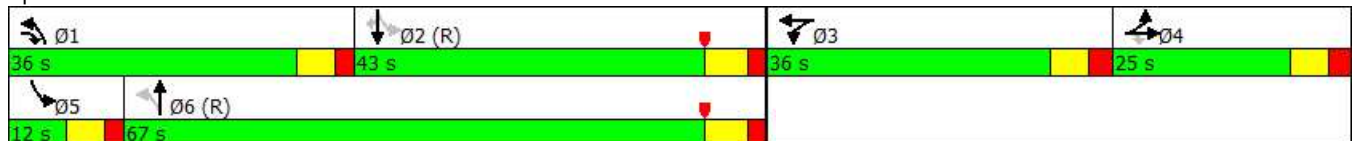
2030 Background AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	51	80	242	179	411	367	802	44	713	79
Future Volume (vph)	51	80	242	179	411	367	802	44	713	79
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	25.0	25.0	36.0	36.0	36.0	36.0	67.0	12.0	43.0	43.0
Total Split (%)	17.9%	17.9%	25.7%	25.7%	25.7%	25.7%	47.9%	8.6%	30.7%	30.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	20.3	20.3	53.3	31.2	31.2	77.0	67.4	53.5	43.5	43.5
Actuated g/C Ratio	0.14	0.14	0.38	0.22	0.22	0.55	0.48	0.38	0.31	0.31
v/c Ratio	0.22	0.77	0.29	0.49	0.89	0.86	0.46	0.19	0.69	0.14
Control Delay	54.7	78.7	30.8	52.4	63.1	58.5	17.7	16.4	35.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	4.4	0.2	0.0	0.0	0.0
Total Delay	54.7	78.7	30.8	52.4	63.1	62.9	17.9	16.4	35.7	1.2
LOS	D	E	C	D	E	E	B	B	D	A
Approach Delay		55.6			60.9		29.8		31.4	
Approach LOS		E			E		C		C	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 28 (20%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 40.3
 Intersection Capacity Utilization 78.1%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Background AM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	55	182	168	175	697	399	1114	48	775	86
v/c Ratio	0.22	0.77	0.29	0.49	0.89	0.86	0.46	0.19	0.69	0.14
Control Delay	54.7	78.7	30.8	52.4	63.1	58.5	17.7	16.4	35.7	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	4.4	0.2	0.0	0.0	0.0
Total Delay	54.7	78.7	30.8	52.4	63.1	62.9	17.9	16.4	35.7	1.2
Queue Length 50th (ft)	44	168	106	152	316	353	209	15	350	0
Queue Length 95th (ft)	87	#278	167	237	#419	#487	287	m20	391	m8
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	263	251	602	369	803	490	2400	254	1122	620
Starvation Cap Reductn	0	0	0	0	0	46	508	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.73	0.28	0.47	0.87	0.90	0.59	0.19	0.69	0.14

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	80	242	179	411	212	367	802	223	44	713	79
Future Volume (vph)	51	80	242	179	411	212	367	802	223	44	713	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1639	1512	1618	3342		1770	4920		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.14	1.00		0.24	1.00	1.00
Satd. Flow (perm)	1719	1639	1512	1618	3342		266	4920		447	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	87	263	195	447	230	399	872	242	48	775	86
RTOR Reduction (vph)	0	0	0	0	39	0	0	34	0	0	0	59
Lane Group Flow (vph)	55	182	168	175	658	0	399	1080	0	48	775	27
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	17.3	17.3	44.8	28.7	28.7		74.5	63.7		45.8	41.0	41.0
Effective Green, g (s)	20.3	20.3	48.8	31.2	31.2		76.5	66.2		51.8	43.5	43.5
Actuated g/C Ratio	0.15	0.15	0.35	0.22	0.22		0.55	0.47		0.37	0.31	0.31
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	249	237	527	360	744		462	2326		237	1121	501
v/s Ratio Prot	0.03	c0.11	0.07	0.11	c0.20		c0.18	0.22		0.01	0.21	
v/s Ratio Perm			0.04				c0.29			0.06		0.02
v/c Ratio	0.22	0.77	0.32	0.49	0.88		0.86	0.46		0.20	0.69	0.05
Uniform Delay, d1	52.9	57.6	33.4	47.4	52.7		33.8	24.9		28.6	42.4	33.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.43	0.72		0.83	0.75	1.00
Incremental Delay, d2	0.3	13.3	0.3	0.8	12.1		12.3	0.5		0.2	2.7	0.2
Delay (s)	53.2	70.9	33.7	48.2	64.8		60.9	18.6		24.1	34.5	34.0
Level of Service	D	E	C	D	E		E	B		C	C	C
Approach Delay (s)		53.0			61.4			29.7			33.9	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Background AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	59	21	208	17	1	407	826	44	1217
Future Volume (vph)	59	21	208	17	1	407	826	44	1217
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	16.0	16.0	43.0	16.0	16.0	43.0	124.0	81.0	81.0
Total Split (%)	11.4%	11.4%	30.7%	11.4%	11.4%	30.7%	88.6%	57.9%	57.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.0	12.0	45.1		12.0	124.3	124.5	88.4	88.4
Actuated g/C Ratio	0.09	0.09	0.32		0.09	0.89	0.89	0.63	0.63
v/c Ratio	0.52	0.14	0.40		0.13	0.80	0.36	0.16	0.68
Control Delay	76.6	61.0	29.4		43.5	34.7	0.6	15.8	20.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	76.6	61.0	29.4		43.5	34.7	0.6	15.8	20.7
LOS	E	E	C		D	C	A	B	C
Approach Delay		41.4			43.5		10.4		20.5
Approach LOS		D			D		B		C

Intersection Summary

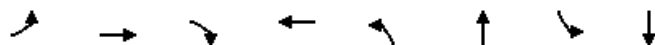
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 15 (11%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 82.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Background AM Peak w MOB
Parkwest Medical Center

























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	64	23	226	30	442	1109	48	1543
v/c Ratio	0.52	0.14	0.40	0.13	0.80	0.36	0.16	0.68
Control Delay	76.6	61.0	29.4	43.5	34.7	0.6	15.8	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.6	61.0	29.4	43.5	34.7	0.6	15.8	20.7
Queue Length 50th (ft)	57	20	122	8	265	10	19	488
Queue Length 95th (ft)	109	50	180	25	m374	12	47	651
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	128	173	650	240	649	3098	300	2256
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.13	0.35	0.13	0.68	0.36	0.16	0.68

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	21	208	17	1	10	407	826	194	44	1217	202
Future Volume (vph)	59	21	208	17	1	10	407	826	194	44	1217	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.94		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3122		1906	3473		1761	3561	
Flt Permitted	0.74	1.00	1.00		0.80		0.09	1.00		0.26	1.00	
Satd. Flow (perm)	1434	1947	1655		2586		175	3473		477	3561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	23	226	18	1	11	442	898	211	48	1323	220
RTOR Reduction (vph)	0	0	31	0	10	0	0	13	0	0	8	0
Lane Group Flow (vph)	64	23	195	0	20	0	442	1096	0	48	1535	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	7.9	7.9	38.3		7.9		120.6	120.6		85.2	85.2	
Effective Green, g (s)	10.4	10.4	42.3		10.4		122.6	122.6		87.2	87.2	
Actuated g/C Ratio	0.07	0.07	0.30		0.07		0.88	0.88		0.62	0.62	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	106	144	500		192		553	3041		297	2217	
v/s Ratio Prot		0.01	0.09				c0.18	0.32				0.43
v/s Ratio Perm	c0.04		0.03		0.01		c0.52			0.10		
v/c Ratio	0.60	0.16	0.39		0.10		0.80	0.36		0.16	0.69	
Uniform Delay, d1	62.8	60.7	38.7		60.4		36.5	1.6		11.1	17.5	
Progression Factor	1.00	1.00	1.00		1.00		0.79	0.22		1.00	1.00	
Incremental Delay, d2	9.3	0.5	0.4		0.2		7.2	0.3		1.2	1.8	
Delay (s)	72.1	61.2	39.0		60.7		36.2	0.7		12.2	19.3	
Level of Service	E	E	D		E		D	A		B	B	
Approach Delay (s)		47.4			60.7			10.8			19.1	
Approach LOS		D			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)				10.0	
Intersection Capacity Utilization			82.6%				ICU Level of Service				E	
Analysis Period (min)			15									

c Critical Lane Group

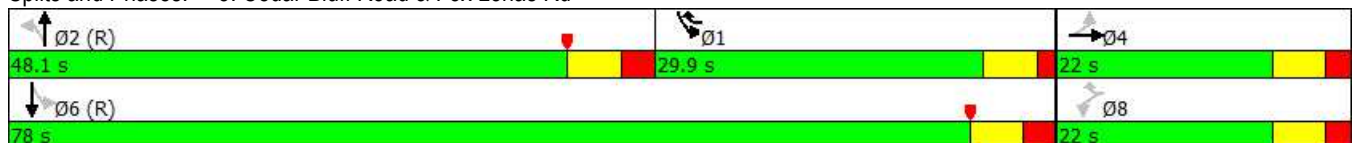
Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↖	↗	↙	↑	↘	↓	Ø4
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT	Ø4
Lane Configurations	↖	↗	↙	↑↓	↘	↗↘	
Traffic Volume (vph)	207	153	3	996	494	752	
Future Volume (vph)	207	153	3	996	494	752	
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	
Protected Phases		1		2	1	6	4
Permitted Phases	8	8	2		6		
Detector Phase	8	1	2	2	1	6	
Switch Phase							
Minimum Initial (s)	8.0	6.0	20.0	20.0	6.0	20.0	8.0
Minimum Split (s)	22.0	11.5	26.5	26.5	11.5	26.5	22.0
Total Split (s)	22.0	29.9	48.1	48.1	29.9	78.0	22.0
Total Split (%)	22.0%	29.9%	48.1%	48.1%	29.9%	78.0%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	5.5	6.5	6.5	5.5	6.5	
Lead/Lag		Lag	Lead	Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes	Yes		
Recall Mode	None	None	C-Min	C-Min	None	C-Min	None
Act Effect Green (s)	16.0	46.4	41.6	41.6	72.5	71.5	
Actuated g/C Ratio	0.16	0.46	0.42	0.42	0.72	0.72	
v/c Ratio	1.00	0.22	0.01	1.08	1.07	0.33	
Control Delay	103.9	13.1	13.7	69.4	92.3	5.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	103.9	13.1	13.7	69.4	92.3	5.7	
LOS	F	B	B	E	F	A	
Approach Delay				69.3		40.0	
Approach LOS				E		D	

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 6 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 56.8
 Intersection Capacity Utilization 93.9%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service F

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

























Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	225	166	3	1567	537	820
v/c Ratio	1.00	0.22	0.01	1.08	1.07	0.33
Control Delay	103.9	13.1	13.7	69.4	92.3	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.9	13.1	13.7	69.4	92.3	5.7
Queue Length 50th (ft)	145	46	1	~576	~330	87
Queue Length 95th (ft)	#298	88	m2	m#715	#537	113
Internal Link Dist (ft)				493		1729
Turn Bay Length (ft)	200		100		100	
Base Capacity (vph)	225	754	249	1455	503	2515
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.22	0.01	1.08	1.07	0.33

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	207	0	153	3	996	445	494	752	3
Future Volume (vph)	0	0	0	207	0	153	3	996	445	494	752	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5	6.5	6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00	1.00	0.95		1.00	0.95	
Fr _t				1.00		0.85	1.00	0.95		1.00	1.00	
Fl _t Protected				0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583	1770	3375		1761	3520	
Fl _t Permitted				0.76		1.00	0.32	1.00		0.08	1.00	
Satd. Flow (perm)				1410		1583	600	3375		154	3520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	225	0	166	3	1083	484	537	817	3
RTOR Reduction (vph)	0	0	0	0	0	23	0	51	0	0	0	0
Lane Group Flow (vph)	0	0	0	225	0	143	3	1516	0	537	820	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				16.0		40.4	41.6	41.6		72.5	71.5	
Effective Green, g (s)				16.0		40.4	41.6	41.6		72.5	71.5	
Actuated g/C Ratio				0.16		0.40	0.42	0.42		0.72	0.72	
Clearance Time (s)				6.0		5.5	6.5	6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)				225		726	249	1404		503	2516	
v/s Ratio Prot						0.05		0.45		c0.26	0.23	
v/s Ratio Perm				c0.16		0.04	0.01			c0.51		
v/c Ratio				1.00		0.20	0.01	1.08		1.07	0.33	
Uniform Delay, d ₁				42.0		19.3	17.1	29.2		33.6	5.3	
Progression Factor				1.00		1.00	0.79	0.76		1.00	1.00	
Incremental Delay, d ₂				60.0		0.1	0.1	48.2		59.4	0.3	
Delay (s)				102.0		19.4	13.6	70.4		92.9	5.6	
Level of Service				F		B	B	E		F	A	
Approach Delay (s)		0.0			66.9			70.3			40.2	
Approach LOS		A			E			E			D	
Intersection Summary												
HCM 2000 Control Delay			57.6									E
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			100.0						18.0			
Intersection Capacity Utilization			93.9%									F
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	142	85	83	62	221	364	814	39	737
Future Volume (vph)	142	85	83	62	221	364	814	39	737
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	32.5	12.0	29.5
Total Split (s)	12.0	21.0	25.0	12.0	21.0	25.0	55.0	12.0	42.0
Total Split (%)	12.0%	21.0%	25.0%	12.0%	21.0%	25.0%	55.0%	12.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	23.6	18.6	43.7	21.6	15.4	59.6	51.9	40.5	34.0
Actuated g/C Ratio	0.24	0.19	0.44	0.22	0.15	0.60	0.52	0.40	0.34
v/c Ratio	0.76	0.27	0.12	0.22	0.93	0.96	0.49	0.14	0.91
Control Delay	56.9	39.9	3.4	29.8	81.4	62.2	17.2	9.5	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	56.9	39.9	3.4	29.8	81.4	62.2	17.6	9.5	36.8
LOS	E	D	A	C	F	E	B	A	D
Approach Delay		37.9			71.1		31.3		35.8
Approach LOS		D			E		C		D

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 10 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 38.0
 Intersection Capacity Utilization 90.0%
 Analysis Period (min) 15










Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Background AM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	92	90	67	267	396	897	42	1074
v/c Ratio	0.76	0.27	0.12	0.22	0.93	0.96	0.49	0.14	0.91
Control Delay	56.9	39.9	3.4	29.8	81.4	62.2	17.2	9.5	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	56.9	39.9	3.4	29.8	81.4	62.2	17.6	9.5	36.8
Queue Length 50th (ft)	79	53	0	32	168	194	199	8	335
Queue Length 95th (ft)	#164	101	24	67	#327	#380	256	m16	m402
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	203	347	749	309	286	414	1832	308	1236
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	424	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.27	0.12	0.22	0.93	0.96	0.64	0.14	0.87

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2030 Background AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	85	83	62	221	25	364	814	11	39	737	251
Future Volume (vph)	142	85	83	62	221	25	364	814	11	39	737	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1834		1770	3532		1761	3387	
Flt Permitted	0.25	1.00	1.00	0.70	1.00		0.10	1.00		0.32	1.00	
Satd. Flow (perm)	474	1863	1583	1299	1834		192	3532		588	3387	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	92	90	67	240	27	396	885	12	42	801	273
RTOR Reduction (vph)	0	0	56	0	4	0	0	1	0	0	35	0
Lane Group Flow (vph)	154	92	34	67	263	0	396	896	0	42	1039	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	25.7	18.6	37.6	21.5	16.5		57.9	48.3		36.5	32.9	
Effective Green, g (s)	25.7	18.6	37.6	21.5	16.5		57.9	48.3		36.5	32.9	
Actuated g/C Ratio	0.26	0.19	0.38	0.22	0.16		0.58	0.48		0.36	0.33	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	213	346	690	302	302		410	1705		256	1114	
v/s Ratio Prot	c0.05	0.05	0.01	0.01	c0.14		c0.18	0.25		0.01	0.31	
v/s Ratio Perm	0.13		0.01	0.04			c0.38			0.05		
v/c Ratio	0.72	0.27	0.05	0.22	0.87		0.97	0.53		0.16	0.93	
Uniform Delay, d1	30.9	34.9	19.8	32.0	40.7		29.6	17.9		20.7	32.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.87	0.87	
Incremental Delay, d2	11.5	0.4	0.0	0.4	22.8		35.3	1.2		0.3	14.0	
Delay (s)	42.4	35.3	19.9	32.4	63.5		64.9	19.1		18.3	42.1	
Level of Service	D	D	B	C	E		E	B		B	D	
Approach Delay (s)		34.4			57.3			33.1			41.2	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
 7: Park 40 Blvd & Sherrill Blvd

2030 Background AM Peak w MOB
 Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	147	19	51	514	244	6	32	6	109	290	38
Future Volume (Veh/h)	62	147	19	51	514	244	6	32	6	109	290	38
Sign Control		Free			Free			Stop			Stop	
Grade		-9%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	160	21	55	559	265	7	35	7	118	315	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									40			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					1142							
pX, platoon unblocked												
vC, conflicting volume	824			181			892	1238	90	1033	1116	412
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	824			181			892	1238	90	1033	1116	412
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			96			0	77	99	15	0	93
cM capacity (veh/h)	802			1392			0	153	949	139	181	589
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2				
Volume Total	67	107	74	334	544	49	118	356				
Volume Left	67	0	0	55	0	7	118	0				
Volume Right	0	0	21	0	265	7	0	41				
cSH	802	1700	1700	1392	1700	149	139	197				
Volume to Capacity	0.08	0.06	0.04	0.04	0.32	0.33	0.85	1.81				
Queue Length 95th (ft)	7	0	0	3	0	33	136	629				
Control Delay (s)	9.9	0.0	0.0	1.6	0.0	41.0	101.5	422.9				
Lane LOS	A			A		E	F	F				
Approach Delay (s)	2.7			0.6		41.0	342.9					
Approach LOS						E	F					
Intersection Summary												
Average Delay			100.5									
Intersection Capacity Utilization			55.7%		ICU Level of Service				B			
Analysis Period (min)			15									

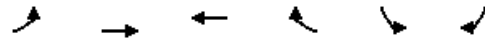
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Background AM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	31	10	227	34	17	409	
Future Volume (Veh/h)	31	10	227	34	17	409	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	34	11	247	37	18	445	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	524	142			284		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	524	142			284		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	93	99			99		
cM capacity (veh/h)	476	880			1275		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	34	11	165	119	18	222	222
Volume Left	34	0	0	0	18	0	0
Volume Right	0	11	0	37	0	0	0
cSH	476	880	1700	1700	1275	1700	1700
Volume to Capacity	0.07	0.01	0.10	0.07	0.01	0.13	0.13
Queue Length 95th (ft)	6	1	0	0	1	0	0
Control Delay (s)	13.1	9.1	0.0	0.0	7.9	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	12.2		0.0		0.3		
Approach LOS	B						
Intersection Summary							
Average Delay			0.9				
Intersection Capacity Utilization			24.0%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Background AM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↑	↔↑		↔↑	↔↑
Traffic Volume (veh/h)	3	350	571	22	453	55
Future Volume (Veh/h)	3	350	571	22	453	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	380	621	24	492	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	645				829	322
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	645				829	322
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				0	91
cM capacity (veh/h)	936				308	673
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	130	253	414	231	492	60
Volume Left	3	0	0	0	492	0
Volume Right	0	0	0	24	0	60
cSH	936	1700	1700	1700	308	673
Volume to Capacity	0.00	0.15	0.24	0.14	1.60	0.09
Queue Length 95th (ft)	0	0	0	0	733	7
Control Delay (s)	0.2	0.0	0.0	0.0	313.9	10.9
Lane LOS	A				F	B
Approach Delay (s)	0.1		0.0		280.9	
Approach LOS					F	
Intersection Summary						
Average Delay			98.2			
Intersection Capacity Utilization			48.2%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

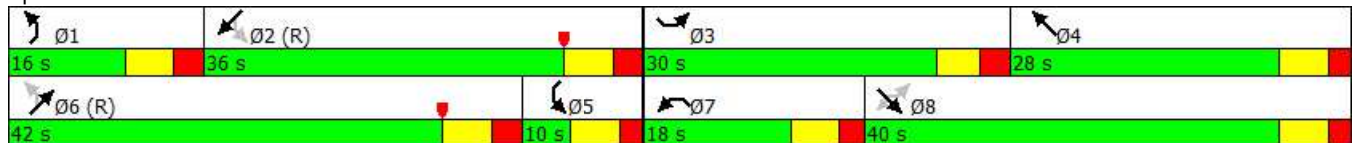
2030 Background AM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	399	427	357	261	100	136	379	18	445
Future Volume (vph)	399	427	357	261	100	136	379	18	445
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	30.0	40.0	40.0	18.0	28.0	16.0	42.0	10.0	36.0
Total Split (%)	27.3%	36.4%	36.4%	16.4%	25.5%	14.5%	38.2%	9.1%	32.7%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	49.3	31.6	31.6	11.7	20.7	44.2	44.2	33.0	32.5
Actuated g/C Ratio	0.45	0.29	0.29	0.11	0.19	0.40	0.40	0.30	0.30
v/c Ratio	0.73	0.87	0.36	0.78	0.34	0.64	0.44	0.07	0.67
Control Delay	29.7	54.7	3.8	63.1	40.0	37.9	23.2	31.0	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	54.7	3.8	63.1	40.0	37.9	23.2	31.0	35.4
LOS	C	D	A	E	D	D	C	C	D
Approach Delay		30.9			56.2		26.1		35.3
Approach LOS		C			E		C		D

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 34.0
 Intersection Capacity Utilization 76.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	434	464	388	284	120	148	613	20	695
v/c Ratio	0.73	0.87	0.36	0.78	0.34	0.64	0.44	0.07	0.67
Control Delay	29.7	54.7	3.8	63.1	40.0	37.9	23.2	31.0	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.7	54.7	3.8	63.1	40.0	37.9	23.2	31.0	35.4
Queue Length 50th (ft)	208	301	0	102	71	66	137	10	215
Queue Length 95th (ft)	301	#460	36	#160	126	#140	217	30	285
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	607	575	1129	374	370	238	1400	270	1041
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.81	0.34	0.76	0.32	0.62	0.44	0.07	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
10: Sherrill Blvd & Dutchtown Rd

2030 Background AM Peak w MOB
Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	399	427	357	261	100	10	136	379	185	18	445	194
Future Volume (vph)	399	427	357	261	100	10	136	379	185	18	445	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1837		1770	3365		1770	3378	
Flt Permitted	0.52	1.00	1.00	0.95	1.00		0.14	1.00		0.42	1.00	
Satd. Flow (perm)	964	1863	2787	3433	1837		267	3365		782	3378	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	434	464	388	284	109	11	148	412	201	20	484	211
RTOR Reduction (vph)	0	0	277	0	3	0	0	50	0	0	43	0
Lane Group Flow (vph)	434	464	111	284	117	0	148	563	0	20	652	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	49.3	31.6	31.6	11.7	20.7		40.6	40.6		33.0	32.5	
Effective Green, g (s)	49.3	31.6	31.6	11.7	20.7		40.6	40.6		33.0	32.5	
Actuated g/C Ratio	0.45	0.29	0.29	0.11	0.19		0.37	0.37		0.30	0.30	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	597	535	800	365	345		224	1241		248	998	
v/s Ratio Prot	c0.15	c0.25		0.08	0.06		c0.06	0.17		0.00	c0.19	
v/s Ratio Perm	0.18		0.04				0.19			0.02		
v/c Ratio	0.73	0.87	0.14	0.78	0.34		0.66	0.45		0.08	0.65	
Uniform Delay, d1	22.5	37.2	29.1	47.9	38.7		26.1	26.3		27.7	33.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	13.9	0.1	10.0	0.6		7.1	1.2		0.1	3.3	
Delay (s)	26.9	51.1	29.2	57.9	39.3		33.2	27.5		27.8	37.2	
Level of Service	C	D	C	E	D		C	C		C	D	
Approach Delay (s)		36.3			52.4			28.6			36.9	
Approach LOS		D			D			C			D	

Intersection Summary

HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

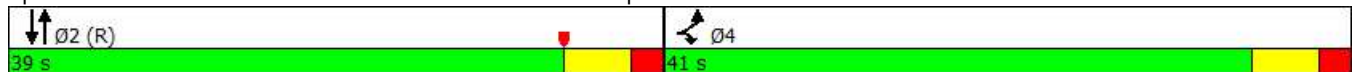
	↖	↗	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	613	572	1567	1417
Future Volume (vph)	613	572	1567	1417
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	41.0	41.0	39.0	39.0
Total Split (%)	51.3%	51.3%	48.8%	48.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	30.0	30.0	42.0	42.0
Actuated g/C Ratio	0.38	0.38	0.52	0.52
v/c Ratio	0.69	0.73	0.51	0.57
Control Delay	23.4	28.8	13.9	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.4	28.8	13.9	11.0
LOS	C	C	B	B
Approach Delay	25.1		13.9	11.0
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 45 (56%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.1
 Intersection Capacity Utilization 57.7%
 Analysis Period (min) 15





Intersection LOS: B
ICU Level of Service B

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	884	404	1703	1540
v/c Ratio	0.69	0.73	0.51	0.57
Control Delay	23.4	28.8	13.9	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.4	28.8	13.9	11.0
Queue Length 50th (ft)	185	181	151	181
Queue Length 95th (ft)	211	254	219	228
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1571	677	3364	2683
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.56	0.60	0.51	0.57
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Background PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	👉👉	👉		👆👆👆	👆👆👆	
Traffic Volume (vph)	613	572	0	1567	1417	0
Future Volume (vph)	613	572	0	1567	1417	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3387	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3387	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	666	622	0	1703	1540	0
RTOR Reduction (vph)	6	6	0	0	0	0
Lane Group Flow (vph)	878	398	0	1703	1540	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	28.0	28.0		40.0	40.0	
Effective Green, g (s)	30.0	30.0		42.0	42.0	
Actuated g/C Ratio	0.38	0.38		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1270	545		3364	2683	
v/s Ratio Prot	0.26	c0.27		0.27	c0.30	
v/s Ratio Perm						
v/c Ratio	0.69	0.73		0.51	0.57	
Uniform Delay, d ₁	21.1	21.5		12.3	12.9	
Progression Factor	1.00	1.00		1.00	0.74	
Incremental Delay, d ₂	1.3	4.3		0.5	0.8	
Delay (s)	22.4	25.9		12.8	10.4	
Level of Service	C	C		B	B	
Approach Delay (s)	23.5			12.8	10.4	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

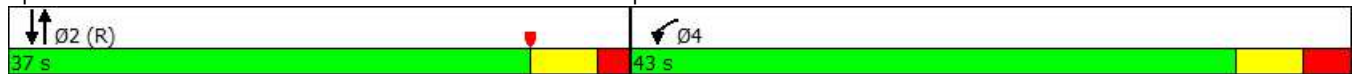
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	969	1567	863
Future Volume (vph)	969	1567	863
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	43.0	37.0	37.0
Total Split (%)	53.8%	46.3%	46.3%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	32.6	39.4	39.4
Actuated g/C Ratio	0.41	0.49	0.49
v/c Ratio	0.73	0.52	0.38
Control Delay	22.9	11.2	10.3
Queue Delay	0.0	0.0	0.0
Total Delay	22.9	11.2	10.3
LOS	C	B	B
Approach Delay	22.9	11.2	10.3
Approach LOS	C	B	B

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 53 (66%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 14.3
 Intersection Capacity Utilization 57.7%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1053	1703	938
v/c Ratio	0.73	0.52	0.38
Control Delay	22.9	11.2	10.3
Queue Delay	0.0	0.0	0.0
Total Delay	22.9	11.2	10.3
Queue Length 50th (ft)	221	126	86
Queue Length 95th (ft)	252	125	116
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1720	3277	2479
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.52	0.38
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background PM Peak w MOB
 Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	969	0	1567	0	0	863
Future Volume (vph)	969	0	1567	0	0	863
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1053	0	1703	0	0	938
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1053	0	1703	0	0	938
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	29.6		37.4			37.4
Effective Green, g (s)	32.6		39.4			39.4
Actuated g/C Ratio	0.41		0.49			0.49
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1438		3277			2479
v/s Ratio Prot	c0.30		c0.26			0.19
v/s Ratio Perm						
v/c Ratio	0.73		0.52			0.38
Uniform Delay, d1	20.0		13.8			12.7
Progression Factor	1.00		0.73			0.75
Incremental Delay, d2	1.7		0.5			0.3
Delay (s)	21.7		10.6			9.8
Level of Service	C		B			A
Approach Delay (s)	21.7		10.6			9.8
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay		13.6	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.62	
Actuated Cycle Length (s)		80.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization		57.7%	ICU Level of Service B
Analysis Period (min)		15	

c Critical Lane Group

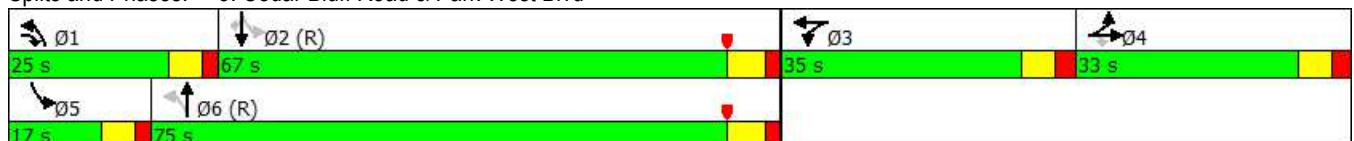
Timings
3: Cedar Bluff Road & Park West Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	74	21	342	318	76	182	624	55	1046	32
Future Volume (vph)	74	21	342	318	76	182	624	55	1046	32
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	33.0	33.0	25.0	35.0	35.0	25.0	75.0	17.0	67.0	67.0
Total Split (%)	20.6%	20.6%	15.6%	21.9%	21.9%	15.6%	46.9%	10.6%	41.9%	41.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.3	26.3	47.7	27.2	27.2	95.0	83.9	84.6	73.1	73.1
Actuated g/C Ratio	0.16	0.16	0.30	0.17	0.17	0.59	0.52	0.53	0.46	0.46
v/c Ratio	0.28	0.78	0.44	0.80	0.63	0.67	0.29	0.15	0.69	0.04
Control Delay	60.8	85.5	47.5	84.2	45.1	47.3	14.8	14.1	29.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	85.5	47.5	84.2	45.1	47.3	14.8	14.1	29.1	0.1
LOS	E	F	D	F	D	D	B	B	C	A
Approach Delay		65.6			58.6		21.5		27.6	
Approach LOS		E			E		C		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 57 (36%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 37.2
 Intersection Capacity Utilization 72.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	80	198	197	218	413	198	761	60	1137	35
v/c Ratio	0.28	0.78	0.44	0.80	0.63	0.67	0.29	0.15	0.69	0.04
Control Delay	60.8	85.5	47.5	84.2	45.1	47.3	14.8	14.1	29.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	85.5	47.5	84.2	45.1	47.3	14.8	14.1	29.1	0.1
Queue Length 50th (ft)	73	208	169	240	149	163	156	24	529	0
Queue Length 95th (ft)	127	307	246	346	209	266	180	43	364	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	316	284	479	313	730	325	2632	449	1648	819
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.70	0.41	0.70	0.57	0.61	0.29	0.13	0.69	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	21	342	318	76	186	182	624	76	55	1046	32
Future Volume (vph)	74	21	342	318	76	186	182	624	76	55	1046	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.98		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1543	1512	1618	3213		1770	5002		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.98		0.11	1.00		0.35	1.00	1.00
Satd. Flow (perm)	1719	1543	1512	1618	3213		202	5002		641	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	80	23	372	346	83	202	198	678	83	60	1137	35
RTOR Reduction (vph)	0	0	0	0	111	0	0	8	0	0	0	19
Lane Group Flow (vph)	80	198	197	218	302	0	198	753	0	60	1137	16
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	23.3	23.3	39.3	24.7	24.7		92.5	80.2		76.8	70.5	70.5
Effective Green, g (s)	26.3	26.3	43.3	27.2	27.2		94.5	82.7		82.8	73.0	73.0
Actuated g/C Ratio	0.16	0.16	0.27	0.17	0.17		0.59	0.52		0.52	0.46	0.46
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	282	253	409	275	546		295	2585		395	1647	736
v/s Ratio Prot	0.05	c0.13	0.05	c0.13	0.09		c0.08	0.15		0.01	c0.31	
v/s Ratio Perm			0.08				0.32			0.07		0.01
v/c Ratio	0.28	0.78	0.48	0.79	0.55		0.67	0.29		0.15	0.69	0.02
Uniform Delay, d1	58.6	64.1	48.9	63.7	60.8		25.3	22.0		19.3	34.5	23.9
Progression Factor	1.01	1.01	1.00	1.00	1.00		1.68	0.64		0.85	0.73	1.00
Incremental Delay, d2	0.4	14.1	0.7	14.0	1.0		4.7	0.2		0.1	2.1	0.0
Delay (s)	59.5	78.6	49.7	77.7	61.8		47.1	14.3		16.6	27.4	23.9
Level of Service	E	E	D	E	E		D	B		B	C	C
Approach Delay (s)		63.4			67.3			21.1			26.8	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	188	3	171	83	0	125	896	7	1192
Future Volume (vph)	188	3	171	83	0	125	896	7	1192
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	49.0	49.0	20.0	49.0	49.0	20.0	111.0	91.0	91.0
Total Split (%)	30.6%	30.6%	12.5%	30.6%	30.6%	12.5%	69.4%	56.9%	56.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	32.1	32.1	45.7		32.1	121.4	120.9	107.8	107.8
Actuated g/C Ratio	0.20	0.20	0.29		0.20	0.76	0.76	0.67	0.67
v/c Ratio	0.76	0.01	0.37		0.18	0.41	0.37	0.02	0.53
Control Delay	77.5	46.0	34.5		24.7	12.9	6.7	12.0	15.5
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	46.0	34.5		24.7	12.9	6.7	12.0	15.5
LOS	E	D	C		C	B	A	B	B
Approach Delay		56.9			24.7		7.5		15.4
Approach LOS		E			C		A		B

Intersection Summary

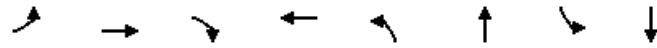
Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 81 (51%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 18.2
 Intersection Capacity Utilization 69.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	204	3	186	95	136	991	8	1308
v/c Ratio	0.76	0.01	0.37	0.18	0.41	0.37	0.02	0.53
Control Delay	77.5	46.0	34.5	24.7	12.9	6.7	12.0	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.5	46.0	34.5	24.7	12.9	6.7	12.0	15.5
Queue Length 50th (ft)	204	3	117	20	26	141	3	343
Queue Length 95th (ft)	280	12	170	44	67	177	12	508
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	381	553	574	742	398	2693	360	2448
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.01	0.32	0.13	0.34	0.37	0.02	0.53

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	3	171	83	0	5	125	896	16	7	1192	11
Future Volume (vph)	188	3	171	83	0	5	125	896	16	7	1192	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3223		1906	3565		1761	3634	
Flt Permitted	0.69	1.00	1.00		0.74		0.15	1.00		0.29	1.00	
Satd. Flow (perm)	1341	1947	1655		2485		301	3565		536	3634	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	204	3	186	90	0	5	136	974	17	8	1296	12
RTOR Reduction (vph)	0	0	33	0	41	0	0	0	0	0	0	0
Lane Group Flow (vph)	204	3	153	0	54	0	136	991	0	8	1308	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	29.6	29.6	37.8		29.6		118.9	118.9		105.7	105.7	
Effective Green, g (s)	32.1	32.1	41.8		32.1		120.9	120.9		107.7	107.7	
Actuated g/C Ratio	0.20	0.20	0.26		0.20		0.76	0.76		0.67	0.67	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	269	390	432		498		329	2693		360	2446	
v/s Ratio Prot		0.00	0.02				c0.03	0.28			c0.36	
v/s Ratio Perm	c0.15		0.07		0.02		0.29			0.01		
v/c Ratio	0.76	0.01	0.35		0.11		0.41	0.37		0.02	0.53	
Uniform Delay, d1	60.3	51.2	48.1		52.3		9.8	6.6		8.7	13.4	
Progression Factor	1.00	1.00	1.00		1.00		1.55	0.87		1.00	1.00	
Incremental Delay, d2	11.6	0.0	0.4		0.1		0.6	0.4		0.1	0.8	
Delay (s)	71.9	51.2	48.5		52.4		15.9	6.2		8.8	14.2	
Level of Service	E	D	D		D		B	A		A	B	
Approach Delay (s)		60.6			52.4			7.3			14.2	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			19.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			69.0%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↕	
Traffic Volume (vph)	95	61	1038	69	1202	
Future Volume (vph)	95	61	1038	69	1202	
Turn Type	Perm	Over	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8			6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	14.0	11.5	26.5	11.5	26.5	14.0
Total Split (s)	24.0	14.0	77.0	14.0	91.0	24.0
Total Split (%)	20.9%	12.2%	67.0%	12.2%	79.1%	21%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lag	Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	13.7	6.4	79.2	91.0	88.8	
Actuated g/C Ratio	0.12	0.06	0.69	0.79	0.77	
v/c Ratio	0.62	0.38	0.60	0.26	0.48	
Control Delay	63.1	11.6	7.5	8.0	5.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	63.1	11.6	7.5	8.0	5.9	
LOS	E	B	A	A	A	
Approach Delay			7.5		6.0	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 56 (49%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 8.8
 Intersection Capacity Utilization 69.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd
























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	103	66	1438	75	1307
v/c Ratio	0.62	0.38	0.60	0.26	0.48
Control Delay	63.1	11.6	7.5	8.0	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	11.6	7.5	8.0	5.9
Queue Length 50th (ft)	74	0	132	10	153
Queue Length 95th (ft)	125	27	m204	26	241
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	223	200	2382	320	2728
Starvation Cap Reductn	0	0	24	0	0
Spillback Cap Reductn	0	0	0	0	155
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.33	0.61	0.23	0.51

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	95	0	61	0	1038	285	69	1202	0
Future Volume (vph)	0	0	0	95	0	61	0	1038	285	69	1202	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3425		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.14	1.00	
Satd. Flow (perm)				1410		1583		3425		260	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	0	66	0	1128	310	75	1307	0
RTOR Reduction (vph)	0	0	0	0	0	63	0	18	0	0	0	0
Lane Group Flow (vph)	0	0	0	103	0	3	0	1420	0	75	1307	0
Turn Type	Perm			Perm		Over	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)				13.7		5.2		78.1		89.8	88.8	
Effective Green, g (s)				13.7		5.2		78.1		89.8	88.8	
Actuated g/C Ratio				0.12		0.05		0.68		0.78	0.77	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				167		71		2326		270	2719	
v/s Ratio Prot						0.00		c0.41		0.01	c0.37	
v/s Ratio Perm				c0.07						0.20		
v/c Ratio				0.62		0.04		0.61		0.28	0.48	
Uniform Delay, d ₁				48.2		52.5		10.1		11.5	4.7	
Progression Factor				1.00		1.00		0.60		1.00	1.00	
Incremental Delay, d ₂				6.6		0.2		1.1		0.6	0.6	
Delay (s)				54.8		52.8		7.2		12.1	5.4	
Level of Service				D		D		A		B	A	
Approach Delay (s)		0.0			54.0			7.2			5.7	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.2									A
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			115.0							18.0		
Intersection Capacity Utilization			69.3%									C
Analysis Period (min)			15									
c Critical Lane Group												

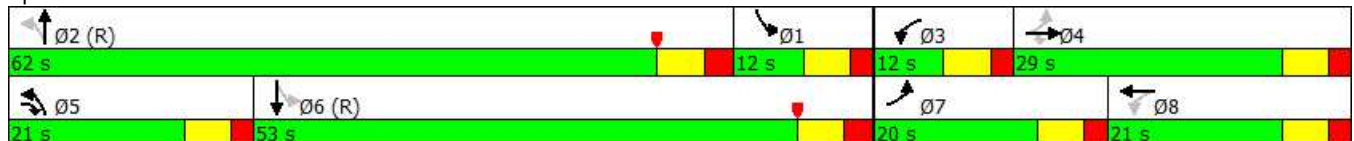
Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	241	114	66	28	183	262	759	26	1097
Future Volume (vph)	241	114	66	28	183	262	759	26	1097
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	20.0	29.0	21.0	12.0	21.0	21.0	62.0	12.0	53.0
Total Split (%)	17.4%	25.2%	18.3%	10.4%	18.3%	18.3%	53.9%	10.4%	46.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	35.0	27.8	48.8	21.0	15.0	60.8	60.3	47.0	46.5
Actuated g/C Ratio	0.30	0.24	0.42	0.18	0.13	0.53	0.52	0.41	0.40
v/c Ratio	0.90	0.28	0.09	0.12	0.99	0.94	0.47	0.09	0.94
Control Delay	68.1	39.5	0.2	30.4	103.9	67.5	19.1	18.8	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total Delay	68.1	39.5	0.2	30.4	103.9	67.5	19.1	18.8	45.0
LOS	E	D	A	C	F	E	B	B	D
Approach Delay		49.7			95.7		31.0		44.5
Approach LOS		D			F		C		D

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 32 (28%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 44.7
 Intersection Capacity Utilization 94.5%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Background PM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	124	72	30	239	285	868	28	1329
v/c Ratio	0.90	0.28	0.09	0.12	0.99	0.94	0.47	0.09	0.94
Control Delay	68.1	39.5	0.2	30.4	103.9	67.5	19.1	18.8	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total Delay	68.1	39.5	0.2	30.4	103.9	67.5	19.1	18.8	45.0
Queue Length 50th (ft)	158	79	0	16	174	160	223	13	495
Queue Length 95th (ft)	#287	136	0	39	#340	#333	281	m19	#504
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	290	450	759	256	242	304	1845	307	1410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	15
Spillback Cap Reductn	0	0	0	0	0	0	69	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.28	0.09	0.12	0.99	0.94	0.49	0.09	0.95

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2030 Background PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	114	66	28	183	37	262	759	40	26	1097	126
Future Volume (vph)	241	114	66	28	183	37	262	759	40	26	1097	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1816		1770	3513		1761	3467	
Flt Permitted	0.22	1.00	1.00	0.68	1.00		0.10	1.00		0.33	1.00	
Satd. Flow (perm)	411	1863	1583	1262	1816		184	3513		605	3467	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	124	72	30	199	40	285	825	43	28	1192	137
RTOR Reduction (vph)	0	0	45	0	6	0	0	3	0	0	8	0
Lane Group Flow (vph)	262	124	27	30	233	0	285	865	0	28	1321	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	37.4	27.8	42.8	21.0	17.4		55.5	55.5		44.6	44.1	
Effective Green, g (s)	37.4	27.8	42.8	21.0	17.4		55.5	55.5		44.6	44.1	
Actuated g/C Ratio	0.33	0.24	0.37	0.18	0.15		0.48	0.48		0.39	0.38	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	299	450	671	246	274		295	1695		270	1329	
v/s Ratio Prot	c0.11	0.07	0.01	0.00	0.13		c0.13	0.25		0.00	c0.38	
v/s Ratio Perm	c0.18		0.01	0.02			0.34			0.04		
v/c Ratio	0.88	0.28	0.04	0.12	0.85		0.97	0.51		0.10	0.99	
Uniform Delay, d1	32.0	35.4	23.0	39.1	47.5		34.0	20.4		22.6	35.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.84	0.95	
Incremental Delay, d2	23.7	0.3	0.0	0.2	21.5		42.8	1.1		0.2	21.9	
Delay (s)	55.7	35.8	23.0	39.3	69.1		76.8	21.5		19.1	55.6	
Level of Service	E	D	C	D	E		E	C		B	E	
Approach Delay (s)		45.2			65.7			35.2			54.8	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	47.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Background PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	40	419	10	25	213	89	23	45	21	174	127	17	
Future Volume (Veh/h)	40	419	10	25	213	89	23	45	21	174	127	17	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	43	455	11	27	232	97	25	49	23	189	138	18	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	329			466			804	930	233	696	886	164	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	329			466			804	930	233	696	886	164	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	96			98			84	80	97	27	48	98	
cM capacity (veh/h)	1227			1092			152	250	769	259	265	851	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	43	303	163	143	213	74	23	189	156				
Volume Left	43	0	0	27	0	25	0	189	0				
Volume Right	0	0	11	0	97	0	23	0	18				
cSH	1227	1700	1700	1092	1700	205	769	259	288				
Volume to Capacity	0.04	0.18	0.10	0.02	0.13	0.36	0.03	0.73	0.54				
Queue Length 95th (ft)	3	0	0	2	0	39	2	128	75				
Control Delay (s)	8.0	0.0	0.0	1.8	0.0	32.1	9.8	49.0	31.3				
Lane LOS	A			A		D	A	E	D				
Approach Delay (s)	0.7			0.7		26.8		41.0					
Approach LOS						D		E					
Intersection Summary													
Average Delay	13.3												
Intersection Capacity Utilization	48.0%			ICU Level of Service					A				
Analysis Period (min)	15												

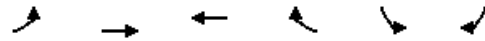
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Background PM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	17	8	307	157	14	165	
Future Volume (Veh/h)	17	8	307	157	14	165	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	18	9	334	171	15	179	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	539	252			505		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	539	252			505		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	96	99			99		
cM capacity (veh/h)	466	747			1056		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	18	9	223	282	15	90	90
Volume Left	18	0	0	0	15	0	0
Volume Right	0	9	0	171	0	0	0
cSH	466	747	1700	1700	1056	1700	1700
Volume to Capacity	0.04	0.01	0.13	0.17	0.01	0.05	0.05
Queue Length 95th (ft)	3	1	0	0	1	0	0
Control Delay (s)	13.0	9.9	0.0	0.0	8.5	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	12.0		0.0		0.7		
Approach LOS	B						
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			23.5%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Background PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	407	287	0	32	0
Future Volume (Veh/h)	0	407	287	0	32	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	442	312	0	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	312				533	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	312				533	156
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				93	100
cM capacity (veh/h)	1245				477	862
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	147	295	208	104	35	0
Volume Left	0	0	0	0	35	0
Volume Right	0	0	0	0	0	0
cSH	1245	1700	1700	1700	477	1700
Volume to Capacity	0.00	0.17	0.12	0.06	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	6	0
Control Delay (s)	0.0	0.0	0.0	0.0	13.2	0.0
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		13.2	
Approach LOS					B	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			21.3%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

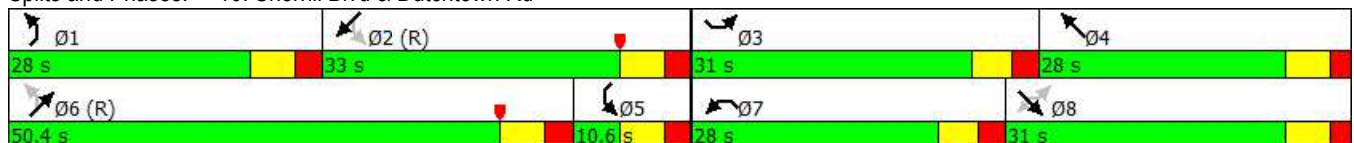
2030 Background PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	401	209	134	495	292	327	744	15	540
Future Volume (vph)	401	209	134	495	292	327	744	15	540
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	31.0	31.0	31.0	28.0	28.0	28.0	50.4	10.6	33.0
Total Split (%)	25.8%	25.8%	25.8%	23.3%	23.3%	23.3%	42.0%	8.8%	27.5%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	50.6	25.6	25.6	21.4	22.0	50.3	50.3	26.9	26.9
Actuated g/C Ratio	0.42	0.21	0.21	0.18	0.18	0.42	0.42	0.22	0.22
v/c Ratio	1.01	0.57	0.19	0.88	0.99	0.93	0.65	0.10	0.83
Control Delay	81.2	49.1	1.9	64.8	95.7	62.9	30.7	39.8	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	49.1	1.9	64.8	95.7	62.9	30.7	39.8	54.0
LOS	F	D	A	E	F	E	C	D	D
Approach Delay		57.9			76.7		39.5		53.6
Approach LOS		E			E		D		D










Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 55.1
 Intersection Capacity Utilization 94.5%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service F

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd























									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	436	227	146	538	337	355	946	16	653
v/c Ratio	1.01	0.57	0.19	0.88	0.99	0.93	0.65	0.10	0.83
Control Delay	81.2	49.1	1.9	64.8	95.7	62.9	30.7	39.8	54.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	49.1	1.9	64.8	95.7	62.9	30.7	39.8	54.0
Queue Length 50th (ft)	~298	160	0	210	262	201	277	10	253
Queue Length 95th (ft)	#513	245	9	#296	#456	#420	406	29	#342
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	430	398	755	629	340	387	1459	167	789
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.57	0.19	0.86	0.99	0.92	0.65	0.10	0.83

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Background PM Peak w MOB
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	401	209	134	495	292	18	327	744	126	15	540	61
Future Volume (vph)	401	209	134	495	292	18	327	744	126	15	540	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1846		1770	3462		1770	3486	
Flt Permitted	0.16	1.00	1.00	0.95	1.00		0.16	1.00		0.30	1.00	
Satd. Flow (perm)	291	1863	2787	3433	1846		295	3462		563	3486	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	227	146	538	317	20	355	809	137	16	587	66
RTOR Reduction (vph)	0	0	115	0	2	0	0	11	0	0	7	0
Lane Group Flow (vph)	436	227	31	538	335	0	355	935	0	16	646	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	50.6	25.6	25.6	21.4	22.0		46.4	46.4		26.9	26.9	
Effective Green, g (s)	50.6	25.6	25.6	21.4	22.0		46.4	46.4		26.9	26.9	
Actuated g/C Ratio	0.42	0.21	0.21	0.18	0.18		0.39	0.39		0.22	0.22	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	430	397	594	612	338		373	1338		142	781	
v/s Ratio Prot	c0.21	c0.12		0.16	0.18		c0.17	0.27		0.00	c0.19	
v/s Ratio Perm	c0.22		0.01				c0.20			0.02		
v/c Ratio	1.01	0.57	0.05	0.88	0.99		0.95	0.70		0.11	0.83	
Uniform Delay, d1	35.3	42.3	37.6	48.0	48.9		33.9	30.9		37.2	44.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	47.0	2.0	0.0	13.6	46.6		34.1	3.1		0.4	9.8	
Delay (s)	82.2	44.3	37.6	61.6	95.6		68.0	34.0		37.5	54.1	
Level of Service	F	D	D	E	F		E	C		D	D	
Approach Delay (s)		63.5			74.7			43.3			53.7	
Approach LOS		E			E			D			D	

Intersection Summary

HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

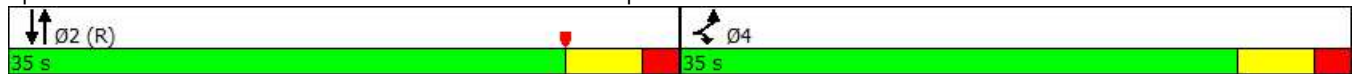
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	477	551	1564	1340
Future Volume (vph)	477	551	1564	1340
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effect Green (s)	24.2	24.2	37.8	37.8
Actuated g/C Ratio	0.35	0.35	0.54	0.54
v/c Ratio	0.65	0.69	0.49	0.53
Control Delay	21.3	25.8	11.6	10.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.3	25.8	11.6	10.6
LOS	C	C	B	B
Approach Delay	22.7		11.6	10.6
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 32 (46%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 64.0%
 Analysis Period (min) 15

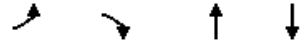
Intersection LOS: B
ICU Level of Service C

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	764	353	1700	1457
v/c Ratio	0.65	0.69	0.49	0.53
Control Delay	21.3	25.8	11.6	10.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.3	25.8	11.6	10.6
Queue Length 50th (ft)	139	136	121	147
Queue Length 95th (ft)	161	196	189	230
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1494	651	3462	2761
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.54	0.49	0.53

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Background Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↘	↗		↑↑↑	↑↑↑	
Traffic Volume (vph)	477	551	0	1564	1340	0
Future Volume (vph)	477	551	0	1564	1340	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.95	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3360	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3360	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	518	599	0	1700	1457	0
RTOR Reduction (vph)	8	8	0	0	0	0
Lane Group Flow (vph)	756	345	0	1700	1457	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	22.2	22.2		35.8	35.8	
Effective Green, g (s)	24.2	24.2		37.8	37.8	
Actuated g/C Ratio	0.35	0.35		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1161	503		3460	2759	
v/s Ratio Prot	0.23	c0.24		0.27	c0.29	
v/s Ratio Perm						
v/c Ratio	0.65	0.69		0.49	0.53	
Uniform Delay, d ₁	19.3	19.6		10.1	10.4	
Progression Factor	1.00	1.00		1.00	0.89	
Incremental Delay, d ₂	1.0	3.1		0.5	0.6	
Delay (s)	20.3	22.7		10.6	9.9	
Level of Service	C	C		B	A	
Approach Delay (s)	21.1			10.6	9.9	
Approach LOS	C			B	A	

Intersection Summary

HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

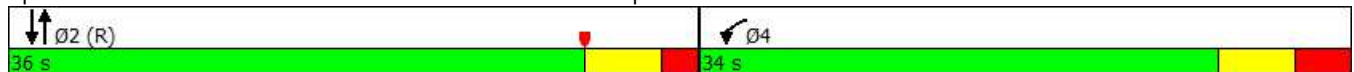
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↓↓↓
Traffic Volume (vph)	975	2040	659
Future Volume (vph)	975	2040	659
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	34.0	36.0	36.0
Total Split (%)	48.6%	51.4%	51.4%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	27.6	34.4	34.4
Actuated g/C Ratio	0.39	0.49	0.49
v/c Ratio	0.76	0.68	0.29
Control Delay	22.2	9.9	7.2
Queue Delay	0.0	0.0	0.0
Total Delay	22.2	10.0	7.2
LOS	C	A	A
Approach Delay	22.2	10.0	7.2
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 34 (49%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 12.7
 Intersection Capacity Utilization 64.0%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background Midday Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1060	2217	716
v/c Ratio	0.76	0.68	0.29
Control Delay	22.2	9.9	7.2
Queue Delay	0.0	0.0	0.0
Total Delay	22.2	10.0	7.2
Queue Length 50th (ft)	191	96	39
Queue Length 95th (ft)	250	106	55
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1512	3266	2471
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	20	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.70	0.68	0.29
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background Midday Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	975	0	2040	0	0	659
Future Volume (vph)	975	0	2040	0	0	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	0	2217	0	0	716
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	0	2217	0	0	716
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	24.6		32.4			32.4
Effective Green, g (s)	27.6		34.4			34.4
Actuated g/C Ratio	0.39		0.49			0.49
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1391		3270			2473
v/s Ratio Prot	c0.30		c0.33			0.14
v/s Ratio Perm						
v/c Ratio	0.76		0.68			0.29
Uniform Delay, d1	18.4		13.6			10.6
Progression Factor	1.00		0.63			0.63
Incremental Delay, d2	2.3		1.0			0.3
Delay (s)	20.6		9.5			6.9
Level of Service	C		A			A
Approach Delay (s)	20.6		9.5			6.9
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

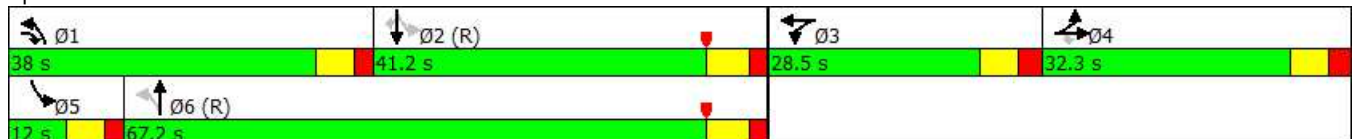
2030 Background Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	96	45	317	143	233	342	902	56	616	52
Future Volume (vph)	96	45	317	143	233	342	902	56	616	52
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	32.3	32.3	38.0	28.5	28.5	38.0	67.2	12.0	41.2	41.2
Total Split (%)	23.1%	23.1%	27.1%	20.4%	20.4%	27.1%	48.0%	8.6%	29.4%	29.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	24.6	24.6	54.3	22.0	22.0	81.9	72.0	61.9	51.7	51.7
Actuated g/C Ratio	0.18	0.18	0.39	0.16	0.16	0.58	0.51	0.44	0.37	0.37
v/c Ratio	0.35	0.73	0.33	0.55	0.76	0.73	0.42	0.21	0.50	0.08
Control Delay	52.9	69.4	29.6	62.5	54.3	37.7	14.7	17.2	30.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.1	0.0	0.0	0.0
Total Delay	52.9	69.4	29.6	62.5	54.3	38.9	14.8	17.2	30.5	0.3
LOS	D	E	C	E	D	D	B	B	C	A
Approach Delay		50.5			56.3		21.0		27.3	
Approach LOS		D			E		C		C	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 103 (74%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 33.1
 Intersection Capacity Utilization 68.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center























										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	104	201	193	139	451	372	1091	61	670	57
v/c Ratio	0.35	0.73	0.33	0.55	0.76	0.73	0.42	0.21	0.50	0.08
Control Delay	52.9	69.4	29.6	62.5	54.3	37.7	14.7	17.2	30.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.1	0.0	0.0	0.0
Total Delay	52.9	69.4	29.6	62.5	54.3	38.9	14.8	17.2	30.5	0.3
Queue Length 50th (ft)	83	182	125	128	176	282	209	15	280	0
Queue Length 95th (ft)	m137	269	167	205	239	394	253	m24	322	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	353	324	670	283	648	584	2586	288	1332	703
Starvation Cap Reductn	0	0	0	0	0	74	542	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.62	0.29	0.49	0.70	0.73	0.53	0.21	0.50	0.08

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	45	317	143	233	167	342	902	102	56	616	52
Future Volume (vph)	96	45	317	143	233	167	342	902	102	56	616	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.94		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1577	1512	1618	3302		1770	5008		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.24	1.00		0.25	1.00	1.00
Satd. Flow (perm)	1719	1577	1512	1618	3302		451	5008		458	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	104	49	345	155	253	182	372	980	111	61	670	57
RTOR Reduction (vph)	0	0	0	0	72	0	0	9	0	0	0	36
Lane Group Flow (vph)	104	201	193	139	379	0	372	1082	0	61	670	21
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	21.6	21.6	45.8	19.5	19.5		79.4	68.3		54.3	49.2	49.2
Effective Green, g (s)	24.6	24.6	49.8	22.0	22.0		81.4	70.8		60.3	51.7	51.7
Actuated g/C Ratio	0.18	0.18	0.36	0.16	0.16		0.58	0.51		0.43	0.37	0.37
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	302	277	537	254	518		509	2532		271	1333	596
v/s Ratio Prot	0.06	c0.13	0.07	0.09	c0.11		c0.14	0.22		0.01	0.19	
v/s Ratio Perm			0.06				c0.29			0.08		0.01
v/c Ratio	0.34	0.73	0.36	0.55	0.73		0.73	0.43		0.23	0.50	0.04
Uniform Delay, d1	50.6	54.5	33.3	54.4	56.2		18.9	21.8		23.5	34.2	28.2
Progression Factor	1.00	1.00	0.99	1.00	1.00		1.78	0.64		0.94	0.79	1.00
Incremental Delay, d2	0.5	8.6	0.3	1.9	5.0		3.7	0.4		0.3	1.1	0.1
Delay (s)	51.2	63.0	33.4	56.3	61.1		37.3	14.3		22.3	28.0	28.3
Level of Service	D	E	C	E	E		D	B		C	C	C
Approach Delay (s)		49.1			60.0			20.2			27.6	
Approach LOS		D			E			C			C	

Intersection Summary

HCM 2000 Control Delay	33.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	172	18	305	105	9	322	1001	22	1107
Future Volume (vph)	172	18	305	105	9	322	1001	22	1107
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	37.0	37.0	36.0	37.0	37.0	36.0	103.0	67.0	67.0
Total Split (%)	26.4%	26.4%	25.7%	26.4%	26.4%	25.7%	73.6%	47.9%	47.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	27.8	27.8	57.3		27.8	105.7	105.2	76.2	76.2
Actuated g/C Ratio	0.20	0.20	0.41		0.20	0.76	0.75	0.54	0.54
v/c Ratio	0.78	0.05	0.48		0.29	0.73	0.43	0.10	0.66
Control Delay	74.3	42.8	28.3		42.9	33.0	6.8	21.4	26.7
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	42.8	28.3		42.9	33.0	6.8	21.4	26.7
LOS	E	D	C		D	C	A	C	C
Approach Delay		44.8			42.9		13.0		26.6
Approach LOS		D			D		B		C

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 85 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 77.1%
 Analysis Period (min) 15

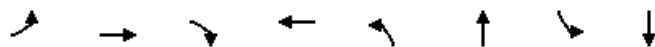
Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center
























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	20	332	148	350	1136	24	1288
v/c Ratio	0.78	0.05	0.48	0.29	0.73	0.43	0.10	0.66
Control Delay	74.3	42.8	28.3	42.9	33.0	6.8	21.4	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.3	42.8	28.3	42.9	33.0	6.8	21.4	26.7
Queue Length 50th (ft)	162	15	196	54	213	206	11	432
Queue Length 95th (ft)	244	37	244	84	326	243	33	606
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	289	465	776	610	566	2671	252	1964
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.04	0.43	0.24	0.62	0.43	0.10	0.66

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	18	305	105	9	22	322	1001	44	22	1107	78
Future Volume (vph)	172	18	305	105	9	22	322	1001	44	22	1107	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3196		1906	3552		1761	3603	
Flt Permitted	0.62	1.00	1.00		0.75		0.11	1.00		0.25	1.00	
Satd. Flow (perm)	1209	1947	1655		2503		224	3552		464	3603	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	187	20	332	114	10	24	350	1088	48	24	1203	85
RTOR Reduction (vph)	0	0	19	0	12	0	0	2	0	0	3	0
Lane Group Flow (vph)	187	20	313	0	136	0	350	1134	0	24	1285	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4			1	6			2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	25.3	25.3	49.3		25.3		103.2	103.2		74.2	74.2	
Effective Green, g (s)	27.8	27.8	53.3		27.8		105.2	105.2		76.2	76.2	
Actuated g/C Ratio	0.20	0.20	0.38		0.20		0.75	0.75		0.54	0.54	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	240	386	630		497		480	2669		252	1961	
v/s Ratio Prot		0.01	0.09				c0.14	0.32				0.36
v/s Ratio Perm	c0.15		0.10		0.05		c0.41			0.05		
v/c Ratio	0.78	0.05	0.50		0.27		0.73	0.42		0.10	0.66	
Uniform Delay, d1	53.2	45.4	33.1		47.5		29.6	6.4		15.3	22.6	
Progression Factor	1.00	1.00	1.00		1.00		1.10	0.92		1.00	1.00	
Incremental Delay, d2	14.7	0.1	0.5		0.3		4.9	0.5		0.8	1.7	
Delay (s)	67.9	45.5	33.6		47.8		37.3	6.3		16.1	24.3	
Level of Service	E	D	C		D		D	A		B	C	
Approach Delay (s)		45.9			47.8			13.6			24.2	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			24.0				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			77.1%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

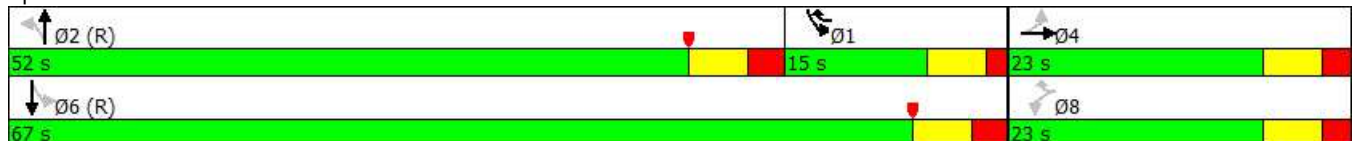
Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	98	47	800	102	1056	
Future Volume (vph)	98	47	800	102	1056	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	20.0	11.5	26.5	11.5	26.5	20.0
Total Split (s)	23.0	15.0	52.0	15.0	67.0	23.0
Total Split (%)	25.6%	16.7%	57.8%	16.7%	74.4%	26%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lag	Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	21.9	59.7	69.0	69.3	
Actuated g/C Ratio	0.14	0.24	0.66	0.77	0.77	
v/c Ratio	0.56	0.12	0.45	0.26	0.42	
Control Delay	46.7	7.1	6.1	7.0	5.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.7	7.1	6.1	7.0	5.6	
LOS	D	A	A	A	A	
Approach Delay			6.1		5.7	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 37 (41%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 7.7
 Intersection Capacity Utilization 65.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background Midday Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	107	51	1044	111	1148
v/c Ratio	0.56	0.12	0.45	0.26	0.42
Control Delay	46.7	7.1	6.1	7.0	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	7.1	6.1	7.0	5.6
Queue Length 50th (ft)	58	0	88	14	115
Queue Length 95th (ft)	105	24	75	35	190
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	267	401	2301	489	2713
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.40	0.13	0.45	0.23	0.42
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	98	0	47	0	800	160	102	1056	0
Future Volume (vph)	0	0	0	98	0	47	0	800	160	102	1056	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3451		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.24	1.00	
Satd. Flow (perm)				1410		1583		3451		440	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	0	51	0	870	174	111	1148	0
RTOR Reduction (vph)	0	0	0	0	0	42	0	14	0	0	0	0
Lane Group Flow (vph)	0	0	0	107	0	9	0	1030	0	111	1148	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				10.7		15.9		56.1		67.8	66.8	
Effective Green, g (s)				10.7		15.9		56.1		67.8	66.8	
Actuated g/C Ratio				0.12		0.18		0.62		0.75	0.74	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				167		376		2151		407	2614	
v/s Ratio Prot						0.00		c0.30		0.02	c0.33	
v/s Ratio Perm				c0.08		0.00				0.19		
v/c Ratio				0.64		0.02		0.48		0.27	0.44	
Uniform Delay, d ₁				37.8		30.6		9.1		6.7	4.4	
Progression Factor				1.00		1.00		0.54		1.00	1.00	
Incremental Delay, d ₂				8.1		0.0		0.7		0.4	0.5	
Delay (s)				45.9		30.7		5.7		7.0	5.0	
Level of Service				D		C		A		A	A	
Approach Delay (s)		0.0			41.0			5.7			5.2	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.7									A
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			90.0							18.0		
Intersection Capacity Utilization			65.5%									C
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

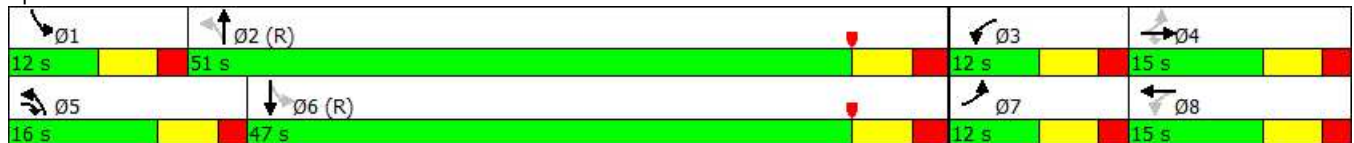
2030 Background Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	99	47	69	58	91	176	690	22	1045
Future Volume (vph)	99	47	69	58	91	176	690	22	1045
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	12.0	15.0	16.0	12.0	15.0	16.0	51.0	12.0	47.0
Total Split (%)	13.3%	16.7%	17.8%	13.3%	16.7%	17.8%	56.7%	13.3%	52.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	12.5	8.6	18.0	15.4	8.8	60.6	57.4	52.5	46.0
Actuated g/C Ratio	0.14	0.10	0.20	0.17	0.10	0.67	0.64	0.58	0.51
v/c Ratio	0.49	0.29	0.18	0.25	0.61	0.66	0.36	0.05	0.69
Control Delay	38.6	42.2	2.9	30.0	52.1	24.5	11.4	6.1	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	42.2	2.9	30.0	52.1	24.5	11.4	6.1	17.3
LOS	D	D	A	C	D	C	B	A	B
Approach Delay		27.9			44.1		13.9		17.1
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 18 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 18.6
 Intersection Capacity Utilization 68.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Background Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	51	75	63	111	191	810	24	1229
v/c Ratio	0.49	0.29	0.18	0.25	0.61	0.66	0.36	0.05	0.69
Control Delay	38.6	42.2	2.9	30.0	52.1	24.5	11.4	6.1	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	42.2	2.9	30.0	52.1	24.5	11.4	6.1	17.3
Queue Length 50th (ft)	49	27	0	28	59	43	110	4	115
Queue Length 95th (ft)	95	63	14	62	#123	#125	197	m10	195
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	222	186	424	249	187	305	2238	448	1812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	1
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.27	0.18	0.25	0.59	0.63	0.36	0.05	0.68

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2030 Background Midday Peak w MOB
Parkwest Medical Center

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	47	69	58	91	11	176	690	55	22	1045	86
Future Volume (vph)	99	47	69	58	91	11	176	690	55	22	1045	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1833		1770	3500		1761	3482	
Flt Permitted	0.74	1.00	1.00	0.48	1.00		0.10	1.00		0.35	1.00	
Satd. Flow (perm)	1380	1863	1583	887	1833		194	3500		641	3482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	51	75	63	99	12	191	750	60	24	1136	93
RTOR Reduction (vph)	0	0	63	0	5	0	0	6	0	0	6	0
Lane Group Flow (vph)	108	51	12	63	106	0	191	804	0	24	1223	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	11.2	5.4	14.4	17.2	8.4		57.3	48.9		44.7	42.3	
Effective Green, g (s)	11.2	5.4	14.4	17.2	8.4		57.3	48.9		44.7	42.3	
Actuated g/C Ratio	0.12	0.06	0.16	0.19	0.09		0.64	0.54		0.50	0.47	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	196	111	358	255	171		281	1901		348	1636	
v/s Ratio Prot	c0.04	0.03	0.00	0.02	c0.06		c0.07	0.23		0.00	c0.35	
v/s Ratio Perm	0.03		0.00	0.02			0.36			0.03		
v/c Ratio	0.55	0.46	0.03	0.25	0.62		0.68	0.42		0.07	0.75	
Uniform Delay, d1	36.7	40.9	31.9	30.6	39.3		13.6	12.2		11.6	19.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.85	0.79	
Incremental Delay, d2	3.3	3.0	0.0	0.5	6.9		6.4	0.7		0.1	2.9	
Delay (s)	40.1	43.9	32.0	31.1	46.2		20.0	12.9		9.9	18.3	
Level of Service	D	D	C	C	D		C	B		A	B	
Approach Delay (s)		38.3			40.7			14.2			18.2	
Approach LOS		D			D			B			B	

Intersection Summary

HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Background Midday Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	35	341	23	40	337	64	10	28	32	131	84	23	
Future Volume (Veh/h)	35	341	23	40	337	64	10	28	32	131	84	23	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	38	371	25	43	366	70	11	30	35	142	91	25	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	436			396			799	982	198	798	959	218	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	436			396			799	982	198	798	959	218	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			96			94	87	96	37	62	97	
cM capacity (veh/h)	1120			1159			179	231	810	226	238	786	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	38	247	149	226	253	41	35	142	116				
Volume Left	38	0	0	43	0	11	0	142	0				
Volume Right	0	0	25	0	70	0	35	0	25				
cSH	1120	1700	1700	1159	1700	214	810	226	280				
Volume to Capacity	0.03	0.15	0.09	0.04	0.15	0.19	0.04	0.63	0.41				
Queue Length 95th (ft)	3	0	0	3	0	17	3	94	49				
Control Delay (s)	8.3	0.0	0.0	1.8	0.0	25.8	9.6	44.6	26.7				
Lane LOS	A			A		D	A	E	D				
Approach Delay (s)	0.7			0.9		18.4		36.5					
Approach LOS						C		E					
Intersection Summary													
Average Delay	9.3												
Intersection Capacity Utilization	46.6%			ICU Level of Service					A				
Analysis Period (min)	15												

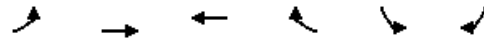
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Background Midday Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	19	10	284	78	13	224	
Future Volume (Veh/h)	19	10	284	78	13	224	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	21	11	309	85	14	243	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	501	197			394		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	501	197			394		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	96	99			99		
cM capacity (veh/h)	493	811			1161		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	21	11	206	188	14	122	122
Volume Left	21	0	0	0	14	0	0
Volume Right	0	11	0	85	0	0	0
cSH	493	811	1700	1700	1161	1700	1700
Volume to Capacity	0.04	0.01	0.12	0.11	0.01	0.07	0.07
Queue Length 95th (ft)	3	1	0	0	1	0	0
Control Delay (s)	12.6	9.5	0.0	0.0	8.1	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.5		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			20.8%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Background Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Volume (veh/h)	0	506	309	0	224	4
Future Volume (Veh/h)	0	506	309	0	224	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	550	336	0	243	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	336				611	168
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	336				611	168
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				43	100
cM capacity (veh/h)	1220				425	847
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	183	367	224	112	243	4
Volume Left	0	0	0	0	243	0
Volume Right	0	0	0	0	0	4
cSH	1220	1700	1700	1700	425	847
Volume to Capacity	0.00	0.22	0.13	0.07	0.57	0.00
Queue Length 95th (ft)	0	0	0	0	87	0
Control Delay (s)	0.0	0.0	0.0	0.0	24.1	9.3
Lane LOS					C	A
Approach Delay (s)	0.0		0.0		23.9	
Approach LOS					C	
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			33.1%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

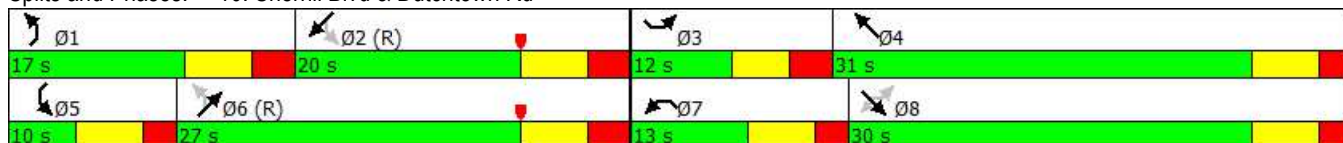
2030 Background Midday Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	94	240	196	143	298	170	208	39	82
Future Volume (vph)	94	240	196	143	298	170	208	39	82
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	12.0	30.0	30.0	13.0	31.0	17.0	27.0	10.0	20.0
Total Split (%)	15.0%	37.5%	37.5%	16.3%	38.8%	21.3%	33.8%	12.5%	25.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effect Green (s)	24.3	18.3	18.3	6.9	21.6	35.9	29.3	26.1	19.9
Actuated g/C Ratio	0.30	0.23	0.23	0.09	0.27	0.45	0.37	0.33	0.25
v/c Ratio	0.34	0.61	0.25	0.52	0.69	0.37	0.29	0.11	0.25
Control Delay	17.9	33.3	1.4	41.8	33.8	17.3	13.2	15.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	33.3	1.4	41.8	33.8	17.3	13.2	15.9	12.7
LOS	B	C	A	D	C	B	B	B	B
Approach Delay		18.8			36.3		14.5		13.2
Approach LOS		B			D		B		B

Intersection Summary










Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 65 (81%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 21.3
 Intersection Capacity Utilization 60.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Background Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	102	261	213	155	345	185	387	42	222
v/c Ratio	0.34	0.61	0.25	0.52	0.69	0.37	0.29	0.11	0.25
Control Delay	17.9	33.3	1.4	41.8	33.8	17.3	13.2	15.9	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	33.3	1.4	41.8	33.8	17.3	13.2	15.9	12.7
Queue Length 50th (ft)	32	116	0	39	157	55	45	11	18
Queue Length 95th (ft)	55	174	7	68	228	110	85	33	50
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	299	558	1046	300	579	506	1319	373	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.47	0.20	0.52	0.60	0.37	0.29	0.11	0.25
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Background Midday Peak w MOB
 Parkwest Medical Center









Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	94	240	196	143	298	19	170	208	148	39	82	122
Future Volume (vph)	94	240	196	143	298	19	170	208	148	39	82	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1846		1770	3318		1770	3221	
Flt Permitted	0.39	1.00	1.00	0.95	1.00		0.45	1.00		0.52	1.00	
Satd. Flow (perm)	727	1863	2787	3433	1846		847	3318		974	3221	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	261	213	155	324	21	185	226	161	42	89	133
RTOR Reduction (vph)	0	0	161	0	3	0	0	109	0	0	102	0
Lane Group Flow (vph)	102	261	52	155	342	0	185	278	0	42	120	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	24.3	19.5	19.5	6.9	21.6		35.1	25.7		22.1	18.7	
Effective Green, g (s)	24.3	19.5	19.5	6.9	21.6		35.1	25.7		22.1	18.7	
Actuated g/C Ratio	0.30	0.24	0.24	0.09	0.27		0.44	0.32		0.28	0.23	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	283	454	679	296	498		485	1065		302	752	
v/s Ratio Prot	0.02	0.14		c0.05	c0.19		c0.05	0.08		0.01	0.04	
v/s Ratio Perm	0.09		0.02				c0.12			0.03		
v/c Ratio	0.36	0.57	0.08	0.52	0.69		0.38	0.26		0.14	0.16	
Uniform Delay, d1	20.8	26.6	23.3	35.0	26.2		14.4	20.1		21.5	24.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.8	0.0	1.7	3.9		0.5	0.6		0.2	0.5	
Delay (s)	21.6	28.4	23.4	36.6	30.1		14.9	20.7		21.7	24.9	
Level of Service	C	C	C	D	C		B	C		C	C	
Approach Delay (s)		25.3			32.1			18.8			24.3	
Approach LOS		C			C			B			C	

Intersection Summary

HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

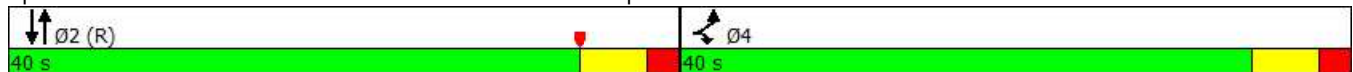
Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	587	438	1380	1234
Future Volume (vph)	587	438	1380	1234
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	26.6	26.6	45.4	45.4
Actuated g/C Ratio	0.33	0.33	0.57	0.57
v/c Ratio	0.67	0.70	0.41	0.46
Control Delay	24.6	28.9	11.1	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.6	28.9	11.1	11.5
LOS	C	C	B	B
Approach Delay	26.0		11.1	11.5
Approach LOS	C		B	B

Intersection Summary





Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 56 (70%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 59.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Background School PM Peak w MOB
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	767	347	1500	1341
v/c Ratio	0.67	0.70	0.41	0.46
Control Delay	24.6	28.9	11.1	11.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.6	28.9	11.1	11.5
Queue Length 50th (ft)	165	157	110	136
Queue Length 95th (ft)	182	214	178	217
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1547	665	3633	2898
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.52	0.41	0.46
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Background School PM Peak w MOB
Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘↘	↗		↑↑↑	↑↑↑	
Traffic Volume (vph)	587	438	0	1380	1234	0
Future Volume (vph)	587	438	0	1380	1234	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.97	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3416	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3416	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	638	476	0	1500	1341	0
RTOR Reduction (vph)	13	13	0	0	0	0
Lane Group Flow (vph)	754	334	0	1500	1341	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	24.6	24.6		43.4	43.4	
Effective Green, g (s)	26.6	26.6		45.4	45.4	
Actuated g/C Ratio	0.33	0.33		0.57	0.57	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1135	483		3636	2900	
v/s Ratio Prot	0.22	c0.23		0.23	c0.26	
v/s Ratio Perm						
v/c Ratio	0.66	0.69		0.41	0.46	
Uniform Delay, d ₁	22.9	23.2		9.8	10.1	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	1.1	3.5		0.3	0.5	
Delay (s)	24.0	26.6		10.1	10.6	
Level of Service	C	C		B	B	
Approach Delay (s)	24.8			10.1	10.6	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

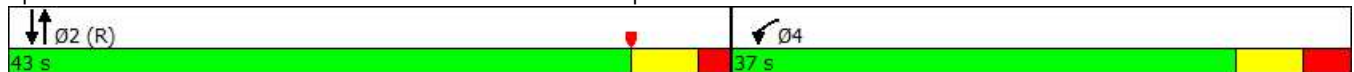
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↘	↑↑↑	↑↑↑
Traffic Volume (vph)	851	1968	905
Future Volume (vph)	851	1968	905
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	37.0	43.0	43.0
Total Split (%)	46.3%	53.8%	53.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	28.6	43.4	43.4
Actuated g/C Ratio	0.36	0.54	0.54
v/c Ratio	0.73	0.59	0.36
Control Delay	25.8	9.8	7.7
Queue Delay	0.0	0.0	0.0
Total Delay	25.8	9.8	7.7
LOS	C	A	A
Approach Delay	25.8	9.8	7.7
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 54 (68%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 13.0
 Intersection Capacity Utilization 59.5%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background School PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	925	2139	984
v/c Ratio	0.73	0.59	0.36
Control Delay	25.8	9.8	7.7
Queue Delay	0.0	0.0	0.0
Total Delay	25.8	9.8	7.7
Queue Length 50th (ft)	201	135	83
Queue Length 95th (ft)	245	144	97
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1456	3608	2729
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.64	0.59	0.36
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Background School PM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	851	0	1968	0	0	905
Future Volume (vph)	851	0	1968	0	0	905
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	925	0	2139	0	0	984
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	925	0	2139	0	0	984
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	25.6		41.4			41.4
Effective Green, g (s)	28.6		43.4			43.4
Actuated g/C Ratio	0.36		0.54			0.54
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1261		3610			2730
v/s Ratio Prot	c0.26		c0.32			0.20
v/s Ratio Perm						
v/c Ratio	0.73		0.59			0.36
Uniform Delay, d1	22.4		12.3			10.4
Progression Factor	1.00		0.70			0.68
Incremental Delay, d2	1.9		0.7			0.3
Delay (s)	24.3		9.3			7.4
Level of Service	C		A			A
Approach Delay (s)	24.3		9.3			7.4
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

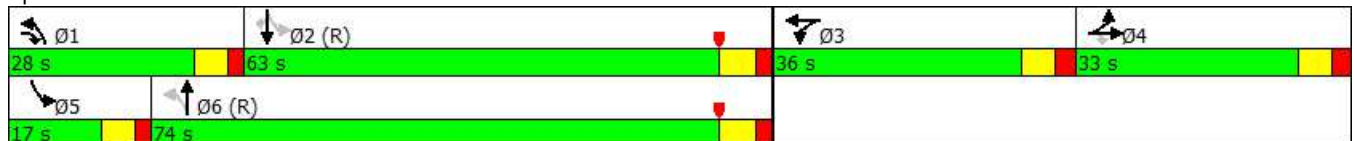
2030 Background School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	127	10	306	214	196	212	817	43	887	33
Future Volume (vph)	127	10	306	214	196	212	817	43	887	33
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	33.0	33.0	28.0	36.0	36.0	28.0	74.0	17.0	63.0	63.0
Total Split (%)	20.6%	20.6%	17.5%	22.5%	22.5%	17.5%	46.3%	10.6%	39.4%	39.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	25.0	25.0	47.3	27.2	27.2	96.3	85.7	84.6	73.6	73.6
Actuated g/C Ratio	0.16	0.16	0.30	0.17	0.17	0.60	0.54	0.53	0.46	0.46
v/c Ratio	0.51	0.73	0.38	0.77	0.69	0.64	0.38	0.14	0.58	0.04
Control Delay	68.1	81.6	45.6	81.1	49.1	36.4	16.1	14.2	28.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	68.1	81.6	45.6	81.1	49.1	36.4	16.2	14.2	28.1	0.1
LOS	E	F	D	F	D	D	B	B	C	A
Approach Delay		65.0			59.2		19.9		26.5	
Approach LOS		E			E		B		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 61 (38%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 35.9
 Intersection Capacity Utilization 68.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Background School PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	138	174	170	210	459	230	1008	47	964	36
v/c Ratio	0.51	0.73	0.38	0.77	0.69	0.64	0.38	0.14	0.58	0.04
Control Delay	68.1	81.6	45.6	81.1	49.1	36.4	16.1	14.2	28.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	68.1	81.6	45.6	81.1	49.1	36.4	16.2	14.2	28.1	0.1
Queue Length 50th (ft)	133	184	147	231	179	156	203	18	388	0
Queue Length 95th (ft)	204	270	207	330	238	266	228	m35	390	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	316	281	496	323	757	405	2682	370	1659	823
Starvation Cap Reductn	0	0	0	0	0	0	569	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.62	0.34	0.65	0.61	0.57	0.48	0.13	0.58	0.04

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Background School PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	10	306	214	196	205	212	817	110	43	887	33
Future Volume (vph)	127	10	306	214	196	205	212	817	110	43	887	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.86	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1529	1512	1618	3256		1770	4994		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.17	1.00		0.26	1.00	1.00
Satd. Flow (perm)	1719	1529	1512	1618	3256		310	4994		469	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	138	11	333	233	213	223	230	888	120	47	964	36
RTOR Reduction (vph)	0	0	0	0	110	0	0	9	0	0	0	19
Lane Group Flow (vph)	138	174	170	210	349	0	230	999	0	47	964	17
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	22.0	22.0	38.7	24.7	24.7		93.8	82.0		76.9	71.1	71.1
Effective Green, g (s)	25.0	25.0	42.7	27.2	27.2		95.8	84.5		82.9	73.6	73.6
Actuated g/C Ratio	0.16	0.16	0.27	0.17	0.17		0.60	0.53		0.52	0.46	0.46
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	268	238	403	275	553		356	2637		313	1660	742
v/s Ratio Prot	0.08	c0.11	0.05	c0.13	0.11		c0.08	0.20		0.01	0.27	
v/s Ratio Perm			0.06				c0.31			0.07		0.01
v/c Ratio	0.51	0.73	0.42	0.76	0.63		0.65	0.38		0.15	0.58	0.02
Uniform Delay, d1	61.9	64.3	48.5	63.3	61.7		21.0	22.3		19.2	31.8	23.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.74	0.68		0.84	0.77	1.00
Incremental Delay, d2	1.2	10.4	0.5	11.4	2.1		2.9	0.3		0.1	1.3	0.0
Delay (s)	63.2	74.7	49.0	74.7	63.8		39.4	15.4		16.2	25.8	23.6
Level of Service	E	E	D	E	E		D	B		B	C	C
Approach Delay (s)		62.3			67.2			19.9			25.3	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Background School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	191	69	0	223	802	15	1253
Future Volume (vph)	108	191	69	0	223	802	15	1253
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		1		4	1	6		2
Permitted Phases	4	4	4		6		2	
Detector Phase	4	1	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	31.0	32.0	31.0	31.0	32.0	129.0	97.0	97.0
Total Split (%)	19.4%	20.0%	19.4%	19.4%	20.0%	80.6%	60.6%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag		Lead			Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	21.1	39.1		21.1	132.4	131.9	114.4	114.4
Actuated g/C Ratio	0.13	0.24		0.13	0.83	0.82	0.72	0.72
v/c Ratio	0.65	0.47		0.21	0.63	0.32	0.04	0.53
Control Delay	81.8	40.9		24.9	28.6	2.8	9.9	12.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	81.8	40.9		24.9	28.6	2.8	9.9	12.8
LOS	F	D		C	C	A	A	B
Approach Delay				24.9		8.1		12.8
Approach LOS				C		A		B

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 84 (53%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 15.9
 Intersection Capacity Utilization 70.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Background School PM Peak w MOB
Parkwest Medical Center



Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	117	208	77	242	927	16	1387
v/c Ratio	0.65	0.47	0.21	0.63	0.32	0.04	0.53
Control Delay	81.8	40.9	24.9	28.6	2.8	9.9	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.8	40.9	24.9	28.6	2.8	9.9	12.8
Queue Length 50th (ft)	118	145	12	69	72	4	319
Queue Length 95th (ft)	183	200	38	174	90	17	515
Internal Link Dist (ft)			642		919		1139
Turn Bay Length (ft)	90			75		85	
Base Capacity (vph)	235	586	472	532	2922	408	2594
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.35	0.16	0.45	0.32	0.04	0.53

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Background School PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	0	191	69	0	2	223	802	51	15	1253	23
Future Volume (vph)	108	0	191	69	0	2	223	802	51	15	1253	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%			1%	
Total Lost time (s)	3.5		3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00		1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00		0.85		1.00		1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849		1655		3232		1906	3543		1761	3629	
Flt Permitted	0.70		1.00		0.74		0.14	1.00		0.31	1.00	
Satd. Flow (perm)	1371		1655		2504		288	3543		571	3629	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	0	208	75	0	2	242	872	55	16	1362	25
RTOR Reduction (vph)	0	0	37	0	44	0	0	2	0	0	1	0
Lane Group Flow (vph)	117	0	171	0	33	0	242	925	0	16	1386	0
Turn Type	Perm		pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	18.6		31.1		18.6		129.9	129.9		112.4	112.4	
Effective Green, g (s)	21.1		35.1		21.1		131.9	131.9		114.4	114.4	
Actuated g/C Ratio	0.13		0.22		0.13		0.82	0.82		0.72	0.72	
Clearance Time (s)	6.0		5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0		2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	180		363		330		384	2920		408	2594	
v/s Ratio Prot			0.04				c0.06	0.26			0.38	
v/s Ratio Perm	c0.09		0.06		0.01		c0.46			0.03		
v/c Ratio	0.65		0.47		0.10		0.63	0.32		0.04	0.53	
Uniform Delay, d1	65.9		54.4		61.1		10.5	3.3		6.7	10.5	
Progression Factor	1.00		1.00		1.00		3.91	0.70		1.00	1.00	
Incremental Delay, d2	8.1		0.7		0.1		2.7	0.3		0.2	0.8	
Delay (s)	74.1		55.1		61.2		43.9	2.6		6.9	11.3	
Level of Service	E		E		E		D	A		A	B	
Approach Delay (s)		61.9			61.2			11.2			11.3	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			70.4%				ICU Level of Service				C	
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center

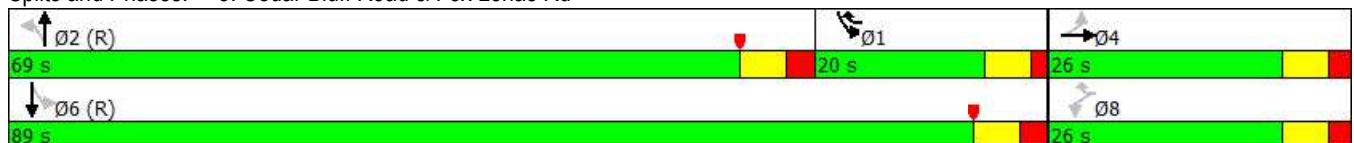
	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↑↑	
Traffic Volume (vph)	99	28	896	130	761	
Future Volume (vph)	99	28	896	130	761	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	9.5	10.5	9.5	10.5	10.0
Total Split (s)	26.0	20.0	69.0	20.0	89.0	26.0
Total Split (%)	22.6%	17.4%	60.0%	17.4%	77.4%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lag	Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	14.1	26.0	77.0	89.4	88.4	
Actuated g/C Ratio	0.12	0.23	0.67	0.78	0.77	
v/c Ratio	0.63	0.08	0.51	0.39	0.31	
Control Delay	63.1	9.8	6.6	10.0	4.7	
Queue Delay	0.0	0.0	0.2	0.0	0.0	
Total Delay	63.1	9.8	6.8	10.0	4.7	
LOS	E	A	A	A	A	
Approach Delay			6.8		5.5	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 61 (53%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 8.9
 Intersection Capacity Utilization 57.0%
 Analysis Period (min) 15






Intersection LOS: A
ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	108	30	1185	141	827
v/c Ratio	0.63	0.08	0.51	0.39	0.31
Control Delay	63.1	9.8	6.6	10.0	4.7
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	63.1	9.8	6.8	10.0	4.7
Queue Length 50th (ft)	77	0	46	21	81
Queue Length 95th (ft)	131	21	399	46	132
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	245	384	2316	489	2708
Starvation Cap Reductn	0	0	354	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.08	0.60	0.29	0.31
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	99	0	28	0	896	194	130	761	0
Future Volume (vph)	0	0	0	99	0	28	0	896	194	130	761	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3445		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.20	1.00	
Satd. Flow (perm)				1410		1583		3445		369	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	108	0	30	0	974	211	141	827	0
RTOR Reduction (vph)	0	0	0	0	0	25	0	12	0	0	0	0
Lane Group Flow (vph)	0	0	0	108	0	5	0	1173	0	141	827	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				14.1		20.1		76.9		89.4	88.4	
Effective Green, g (s)				14.1		20.1		76.9		89.4	88.4	
Actuated g/C Ratio				0.12		0.17		0.67		0.78	0.77	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				172		352		2303		359	2707	
v/s Ratio Prot						0.00		c0.34		c0.02	0.23	
v/s Ratio Perm				c0.08		0.00				0.28		
v/c Ratio				0.63		0.01		0.51		0.39	0.31	
Uniform Delay, d ₁				48.0		39.3		9.6		9.9	4.0	
Progression Factor				1.00		1.00		0.58		1.00	1.00	
Incremental Delay, d ₂				7.0		0.0		0.8		0.7	0.3	
Delay (s)				54.9		39.3		6.3		10.6	4.3	
Level of Service				D		D		A		B	A	
Approach Delay (s)		0.0			51.5			6.3			5.2	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.6									
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			115.0						18.0			
Intersection Capacity Utilization			57.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	118	81	103	26	172	234	756	21	685
Future Volume (vph)	118	81	103	26	172	234	756	21	685
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.6	12.0	26.5
Total Split (s)	14.0	28.0	25.0	12.0	26.0	25.0	63.0	12.0	50.0
Total Split (%)	12.2%	24.3%	21.7%	10.4%	22.6%	21.7%	54.8%	10.4%	43.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	33.0	26.2	46.1	23.5	17.1	69.1	61.4	55.3	48.8
Actuated g/C Ratio	0.29	0.23	0.40	0.20	0.15	0.60	0.53	0.48	0.42
v/c Ratio	0.46	0.21	0.16	0.10	0.77	0.70	0.46	0.07	0.62
Control Delay	36.4	38.6	4.4	29.0	63.9	24.0	18.9	10.3	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	36.4	38.6	4.4	29.0	63.9	24.0	18.9	10.3	24.5
LOS	D	D	A	C	E	C	B	B	C
Approach Delay		26.1			59.8		20.1		24.2
Approach LOS		C			E		C		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 14 (12%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 25.9
 Intersection Capacity Utilization 74.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center























									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	88	112	28	211	254	859	23	913
v/c Ratio	0.46	0.21	0.16	0.10	0.77	0.70	0.46	0.07	0.62
Control Delay	36.4	38.6	4.4	29.0	63.9	24.0	18.9	10.3	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	36.4	38.6	4.4	29.0	63.9	24.0	18.9	10.3	24.5
Queue Length 50th (ft)	69	55	0	14	147	88	228	6	284
Queue Length 95th (ft)	123	104	34	37	228	149	272	m15	230
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	278	425	767	292	322	427	1931	338	1485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	61
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.21	0.15	0.10	0.66	0.59	0.44	0.07	0.64

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

























2030 Background School PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	81	103	26	172	22	234	756	34	21	685	155
Future Volume (vph)	118	81	103	26	172	22	234	756	34	21	685	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1831		1770	3516		1761	3424	
Flt Permitted	0.31	1.00	1.00	0.70	1.00		0.17	1.00		0.31	1.00	
Satd. Flow (perm)	583	1863	1583	1304	1831		310	3516		575	3424	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	88	112	28	187	24	254	822	37	23	745	168
RTOR Reduction (vph)	0	0	73	0	4	0	0	3	0	0	16	0
Lane Group Flow (vph)	128	88	39	28	207	0	254	856	0	23	897	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	36.2	26.2	40.1	23.4	19.4		66.3	56.7		50.0	46.4	
Effective Green, g (s)	36.2	26.2	40.1	23.4	19.4		66.3	56.7		50.0	46.4	
Actuated g/C Ratio	0.31	0.23	0.35	0.20	0.17		0.58	0.49		0.43	0.40	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	424	634	281	308		355	1733		287	1381	
v/s Ratio Prot	c0.04	0.05	0.01	0.00	c0.11		c0.09	0.24		0.00	0.26	
v/s Ratio Perm	0.10		0.02	0.02			c0.33			0.03		
v/c Ratio	0.44	0.21	0.06	0.10	0.67		0.72	0.49		0.08	0.65	
Uniform Delay, d1	29.9	36.0	24.9	37.1	44.8		16.7	19.5		18.6	27.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.85	0.84	
Incremental Delay, d2	1.0	0.2	0.0	0.2	5.7		6.7	1.0		0.1	2.3	
Delay (s)	30.9	36.2	25.0	37.2	50.5		23.4	20.5		16.0	25.6	
Level of Service	C	D	C	D	D		C	C		B	C	
Approach Delay (s)		30.3			48.9			21.2			25.4	
Approach LOS		C			D			C			C	












Intersection Summary

HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

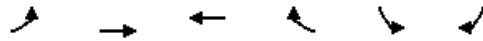
HCM Unsignalized Intersection Capacity Analysis 2030 Background School PM Peak w MOB
 7: Park 40 Blvd & Sherrill Blvd Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	39	248	11	23	269	97	7	41	25	161	113	22	
Future Volume (Veh/h)	39	248	11	23	269	97	7	41	25	161	113	22	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	42	270	12	25	292	105	8	45	27	175	123	24	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	397			282			642	807	141	663	760	198	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	397			282			642	807	141	663	760	198	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	96			98			97	85	97	39	61	97	
cM capacity (veh/h)	1158			1277			233	296	881	285	315	809	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	42	180	102	171	251	53	27	175	147				
Volume Left	42	0	0	25	0	8	0	175	0				
Volume Right	0	0	12	0	105	0	27	0	24				
cSH	1158	1700	1700	1277	1700	285	881	285	350				
Volume to Capacity	0.04	0.11	0.06	0.02	0.15	0.19	0.03	0.61	0.42				
Queue Length 95th (ft)	3	0	0	1	0	17	2	94	50				
Control Delay (s)	8.2	0.0	0.0	1.3	0.0	20.5	9.2	35.9	22.5				
Lane LOS	A			A		C	A	E	C				
Approach Delay (s)	1.1			0.5		16.7		29.8					
Approach LOS						C		D					
Intersection Summary													
Average Delay	10.0												
Intersection Capacity Utilization	44.0%			ICU Level of Service					A				
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis 2030 Background School PM Peak w MOB
 8: Sherrill Blvd & Park West Blvd Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	17	8	251	61	10	192	
Future Volume (Veh/h)	17	8	251	61	10	192	
Sign Control	Stop		Free		Free		
Grade	0%		-9%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	18	9	273	66	11	209	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	432	170			339		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	432	170			339		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	97	99			99		
cM capacity (veh/h)	546	845			1217		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	18	9	182	157	11	104	104
Volume Left	18	0	0	0	11	0	0
Volume Right	0	9	0	66	0	0	0
cSH	546	845	1700	1700	1217	1700	1700
Volume to Capacity	0.03	0.01	0.11	0.09	0.01	0.06	0.06
Queue Length 95th (ft)	3	1	0	0	1	0	0
Control Delay (s)	11.8	9.3	0.0	0.0	8.0	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.0		0.0		0.4		
Approach LOS	B						
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			18.9%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis 2030 Background School PM Peak w MOB
 9: Park West Blvd & Park 40 Blvd Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Volume (veh/h)	4	503	345	0	123	3
Future Volume (Veh/h)	4	503	345	0	123	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	547	375	0	134	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	375				656	188
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	375				656	188
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				66	100
cM capacity (veh/h)	1180				397	823
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	186	365	250	125	134	3
Volume Left	4	0	0	0	134	0
Volume Right	0	0	0	0	0	3
cSH	1180	1700	1700	1700	397	823
Volume to Capacity	0.00	0.21	0.15	0.07	0.34	0.00
Queue Length 95th (ft)	0	0	0	0	37	0
Control Delay (s)	0.2	0.0	0.0	0.0	18.6	9.4
Lane LOS	A				C	A
Approach Delay (s)	0.1		0.0		18.4	
Approach LOS					C	
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			30.2%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	198	279	109	334	172	139	205	48	248
Future Volume (vph)	198	279	109	334	172	139	205	48	248
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.5	14.5	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	20.0	40.0	40.0	27.0	47.0	21.0	43.0	10.0	32.0
Total Split (%)	16.7%	33.3%	33.3%	22.5%	39.2%	17.5%	35.8%	8.3%	26.7%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	38.5	25.1	25.1	17.6	29.2	57.6	48.6	48.0	41.0
Actuated g/C Ratio	0.32	0.21	0.21	0.15	0.24	0.48	0.40	0.40	0.34
v/c Ratio	0.50	0.78	0.15	0.72	0.44	0.32	0.25	0.12	0.31
Control Delay	27.5	58.3	0.4	57.3	39.4	21.3	18.9	20.6	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	58.3	0.4	57.3	39.4	21.3	18.9	20.6	29.3
LOS	C	E	A	E	D	C	B	C	C
Approach Delay		37.1			51.0		19.6		28.3
Approach LOS		D			D		B		C

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 34.8
 Intersection Capacity Utilization 62.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Background School PM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	215	303	118	363	199	151	359	52	371
v/c Ratio	0.50	0.78	0.15	0.72	0.44	0.32	0.25	0.12	0.31
Control Delay	27.5	58.3	0.4	57.3	39.4	21.3	18.9	20.6	29.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	58.3	0.4	57.3	39.4	21.3	18.9	20.6	29.3
Queue Length 50th (ft)	111	224	0	139	130	63	67	20	97
Queue Length 95th (ft)	142	299	0	186	177	126	117	51	168
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	441	527	972	600	632	508	1418	441	1186
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.57	0.12	0.60	0.31	0.30	0.25	0.12	0.31
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Background School PM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	198	279	109	334	172	11	139	205	125	48	248	93
Future Volume (vph)	198	279	109	334	172	11	139	205	125	48	248	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1846		1770	3338		1770	3395	
Flt Permitted	0.60	1.00	1.00	0.95	1.00		0.42	1.00		0.54	1.00	
Satd. Flow (perm)	1123	1863	2787	3433	1846		791	3338		1001	3395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	303	118	363	187	12	151	223	136	52	270	101
RTOR Reduction (vph)	0	0	93	0	2	0	0	67	0	0	27	0
Lane Group Flow (vph)	215	303	25	363	197	0	151	292	0	52	344	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	38.6	25.1	25.1	17.6	29.2		58.7	47.4		46.4	41.0	
Effective Green, g (s)	38.6	25.1	25.1	17.6	29.2		58.7	47.4		46.4	41.0	
Actuated g/C Ratio	0.32	0.21	0.21	0.15	0.24		0.49	0.39		0.39	0.34	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	434	389	582	503	449		479	1318		421	1159	
v/s Ratio Prot	0.06	c0.16		c0.11	c0.11		c0.03	0.09		0.01	0.10	
v/s Ratio Perm	0.10		0.01				c0.12			0.04		
v/c Ratio	0.50	0.78	0.04	0.72	0.44		0.32	0.22		0.12	0.30	
Uniform Delay, d1	31.4	44.8	37.9	48.9	38.5		17.6	24.1		23.3	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	9.5	0.0	5.1	0.7		0.4	0.4		0.1	0.7	
Delay (s)	32.3	54.3	37.9	53.9	39.1		17.9	24.5		23.4	29.6	
Level of Service	C	D	D	D	D		B	C		C	C	
Approach Delay (s)		43.8			48.7			22.5			28.8	
Approach LOS		D			D			C			C	

Intersection Summary

HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected AM Peak w MOB
Parkwest Medical Center

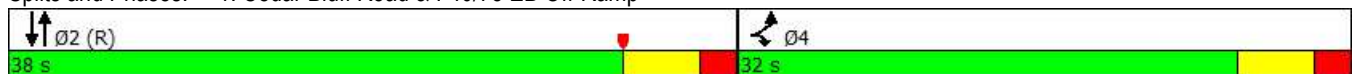
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	902	313	1306	1549
Future Volume (vph)	902	313	1306	1549
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	32.0	32.0	38.0	38.0
Total Split (%)	45.7%	45.7%	54.3%	54.3%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	26.2	26.2	35.8	35.8
Actuated g/C Ratio	0.37	0.37	0.51	0.51
v/c Ratio	0.78	0.56	0.43	0.64
Control Delay	23.8	20.8	11.6	16.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.8	20.8	11.6	16.4
LOS	C	C	B	B
Approach Delay	23.1		11.6	16.4
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 41 (59%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 65.6%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp







Queues

2030 Projected AM Peak w MOB











1: Cedar Bluff Road & I-40/75 EB Off-Ramp

Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	1014	306	1420	1684
v/c Ratio	0.78	0.56	0.43	0.64
Control Delay	23.8	20.8	11.6	16.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.8	20.8	11.6	16.4
Queue Length 50th (ft)	185	103	109	241
Queue Length 95th (ft)	251	181	137	286
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1389	587	3273	2611
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.73	0.52	0.43	0.64
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected AM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	902	313	0	1306	1549	0
Future Volume (vph)	902	313	0	1306	1549	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.99	0.85		1.00	1.00	
Fl _t Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3464	1455		6408	5111	
Fl _t Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3464	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	980	340	0	1420	1684	0
RTOR Reduction (vph)	4	6	0	0	0	0
Lane Group Flow (vph)	1010	300	0	1420	1684	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	24.2	24.2		33.8	33.8	
Effective Green, g (s)	26.2	26.2		35.8	35.8	
Actuated g/C Ratio	0.37	0.37		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1296	544		3277	2613	
v/s Ratio Prot	c0.29	0.21		0.22	c0.33	
v/s Ratio Perm						
v/c Ratio	0.78	0.55		0.43	0.64	
Uniform Delay, d ₁	19.3	17.3		10.7	12.5	
Progression Factor	1.00	1.00		1.00	1.19	
Incremental Delay, d ₂	2.8	0.7		0.4	1.1	
Delay (s)	22.1	18.0		11.2	15.9	
Level of Service	C	B		B	B	
Approach Delay (s)	21.2			11.2	15.9	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			15.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.70			
Actuated Cycle Length (s)			70.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			65.6%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected AM Peak w MOB
Parkwest Medical Center

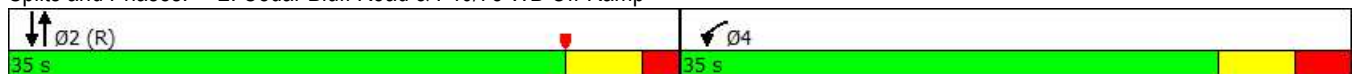
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↘	↑↑↑	↑↑↑
Traffic Volume (vph)	991	1884	701
Future Volume (vph)	991	1884	701
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	28.3	33.7	33.7
Actuated g/C Ratio	0.40	0.48	0.48
v/c Ratio	0.75	0.64	0.31
Control Delay	21.4	10.8	6.3
Queue Delay	0.0	0.1	0.0
Total Delay	21.4	10.9	6.3
LOS	C	B	A
Approach Delay	21.4	10.9	6.3
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 36 (51%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 12.9
 Intersection Capacity Utilization 65.6%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected AM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1077	2048	762
v/c Ratio	0.75	0.64	0.31
Control Delay	21.4	10.8	6.3
Queue Delay	0.0	0.1	0.0
Total Delay	21.4	10.9	6.3
Queue Length 50th (ft)	192	146	47
Queue Length 95th (ft)	248	172	m91
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1563	3202	2422
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	204	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.69	0.68	0.31

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected AM Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	991	0	1884	0	0	701
Future Volume (vph)	991	0	1884	0	0	701
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1077	0	2048	0	0	762
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1077	0	2048	0	0	762
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	25.3		31.7			31.7
Effective Green, g (s)	28.3		33.7			33.7
Actuated g/C Ratio	0.40		0.48			0.48
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1427		3203			2423
v/s Ratio Prot	c0.31		c0.31			0.15
v/s Ratio Perm						
v/c Ratio	0.75		0.64			0.31
Uniform Delay, d1	17.9		13.6			11.1
Progression Factor	1.00		0.70			0.52
Incremental Delay, d2	2.1		0.8			0.2
Delay (s)	19.9		10.3			6.1
Level of Service	B		B			A
Approach Delay (s)	19.9		10.3			6.1
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay		12.2	HCM 2000 Level of Service B
HCM 2000 Volume to Capacity ratio		0.69	
Actuated Cycle Length (s)		70.0	Sum of lost time (s) 8.0
Intersection Capacity Utilization		65.6%	ICU Level of Service C
Analysis Period (min)		15	

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

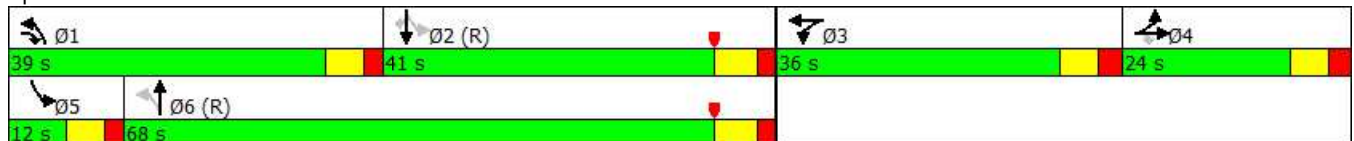
2030 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	54	87	279	179	463	427	802	44	713	87
Future Volume (vph)	54	87	279	179	463	427	802	44	713	87
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	24.0	24.0	39.0	36.0	36.0	39.0	68.0	12.0	41.0	41.0
Total Split (%)	17.1%	17.1%	27.9%	25.7%	25.7%	27.9%	48.6%	8.6%	29.3%	29.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	20.3	20.3	58.0	32.0	32.0	76.2	66.6	48.0	38.0	38.0
Actuated g/C Ratio	0.14	0.14	0.41	0.23	0.23	0.54	0.48	0.34	0.27	0.27
v/c Ratio	0.24	0.88	0.31	0.47	0.94	0.95	0.47	0.20	0.79	0.17
Control Delay	55.6	91.9	28.8	51.7	70.6	77.5	14.7	16.4	41.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	26.4	0.1	0.0	0.0	0.0
Total Delay	55.6	91.9	28.8	51.7	70.6	103.9	14.9	16.4	41.8	2.3
LOS	E	F	C	D	E	F	B	B	D	A
Approach Delay		60.8			67.0		41.1		36.4	
Approach LOS		E			E		D		D	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 48.5
 Intersection Capacity Utilization 83.5%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected AM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	59	207	191	175	753	464	1114	48	775	95
v/c Ratio	0.24	0.88	0.31	0.47	0.94	0.95	0.47	0.20	0.79	0.17
Control Delay	55.6	91.9	28.8	51.7	70.6	77.5	14.7	16.4	41.8	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	26.4	0.1	0.0	0.0	0.0
Total Delay	55.6	91.9	28.8	51.7	70.6	103.9	14.9	16.4	41.8	2.3
Queue Length 50th (ft)	48	196	120	152	356	419	198	16	357	4
Queue Length 95th (ft)	m92	#348	184	237	#486	#592	232	m22	426	m14
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	251	239	635	369	799	496	2374	236	981	563
Starvation Cap Reductn	0	0	0	0	0	54	392	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.87	0.30	0.47	0.94	1.05	0.56	0.20	0.79	0.17

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Projected AM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	87	279	179	463	212	427	802	223	44	713	87
Future Volume (vph)	54	87	279	179	463	212	427	802	223	44	713	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1634	1512	1618	3355		1770	4920		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.10	1.00		0.24	1.00	1.00
Satd. Flow (perm)	1719	1634	1512	1618	3355		187	4920		447	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	95	303	195	503	230	464	872	242	48	775	95
RTOR Reduction (vph)	0	0	0	0	32	0	0	35	0	0	0	69
Lane Group Flow (vph)	59	207	191	175	721	0	464	1079	0	48	775	26
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	17.3	17.3	49.5	29.5	29.5		73.7	62.9		40.3	35.5	35.5
Effective Green, g (s)	20.3	20.3	53.5	32.0	32.0		75.7	65.4		46.3	38.0	38.0
Actuated g/C Ratio	0.15	0.15	0.38	0.23	0.23		0.54	0.47		0.33	0.27	0.27
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	249	236	577	369	766		487	2298		220	979	438
v/s Ratio Prot	0.03	c0.13	0.08	0.11	c0.21		c0.23	0.22		0.01	0.21	
v/s Ratio Perm			0.05				c0.28			0.06		0.02
v/c Ratio	0.24	0.88	0.33	0.47	0.94		0.95	0.47		0.22	0.79	0.06
Uniform Delay, d1	53.0	58.6	30.6	46.7	53.1		41.7	25.5		32.2	47.3	37.8
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.34	0.60		0.81	0.77	1.00
Incremental Delay, d2	0.4	28.3	0.2	0.7	19.5		24.4	0.5		0.3	5.0	0.2
Delay (s)	53.3	86.7	30.8	47.4	72.6		80.1	15.8		26.4	41.4	38.0
Level of Service	D	F	C	D	E		F	B		C	D	D
Approach Delay (s)		59.0			67.8			34.7			40.3	
Approach LOS		E			E			C			D	

Intersection Summary

HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

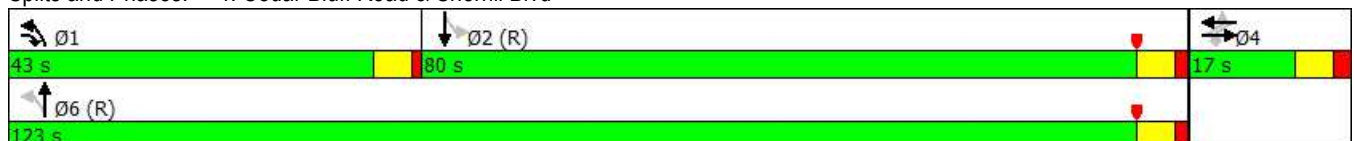
2030 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	64	21	208	17	1	407	829	44	1226
Future Volume (vph)	64	21	208	17	1	407	829	44	1226
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	17.0	17.0	43.0	17.0	17.0	43.0	123.0	80.0	80.0
Total Split (%)	12.1%	12.1%	30.7%	12.1%	12.1%	30.7%	87.9%	57.1%	57.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.7	12.7	46.5		12.7	123.6	123.8	87.0	87.0
Actuated g/C Ratio	0.09	0.09	0.33		0.09	0.88	0.88	0.62	0.62
v/c Ratio	0.54	0.13	0.39		0.12	0.80	0.36	0.16	0.71
Control Delay	76.3	59.9	29.0		42.7	36.8	0.7	16.6	22.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	59.9	29.0		42.7	36.8	0.7	16.6	22.1
LOS	E	E	C		D	D	A	B	C
Approach Delay		41.6			42.7		10.9		22.0
Approach LOS		D			D		B		C

Intersection Summary

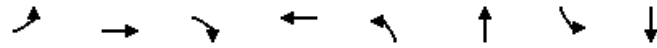
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 16 (11%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 19.1
 Intersection Capacity Utilization 83.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected AM Peak w MOB
Parkwest Medical Center


























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	70	23	226	30	442	1112	48	1568
v/c Ratio	0.54	0.13	0.39	0.12	0.80	0.36	0.16	0.71
Control Delay	76.3	59.9	29.0	42.7	36.8	0.7	16.6	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.3	59.9	29.0	42.7	36.8	0.7	16.6	22.1
Queue Length 50th (ft)	62	20	122	8	277	10	19	520
Queue Length 95th (ft)	116	49	180	25	m390	m12	48	680
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	138	187	656	260	639	3084	294	2220
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.12	0.34	0.12	0.69	0.36	0.16	0.71

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	21	208	17	1	10	407	829	194	44	1226	216
Future Volume (vph)	64	21	208	17	1	10	407	829	194	44	1226	216
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Flt	1.00	1.00	0.85		0.94		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3122		1906	3473		1761	3557	
Flt Permitted	0.74	1.00	1.00		0.81		0.08	1.00		0.26	1.00	
Satd. Flow (perm)	1434	1947	1655		2598		159	3473		475	3557	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	23	226	18	1	11	442	901	211	48	1333	235
RTOR Reduction (vph)	0	0	28	0	10	0	0	13	0	0	9	0
Lane Group Flow (vph)	70	23	198	0	20	0	442	1099	0	48	1559	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	8.6	8.6	39.7		8.6		119.9	119.9		83.8	83.8	
Effective Green, g (s)	11.1	11.1	43.7		11.1		121.9	121.9		85.8	85.8	
Actuated g/C Ratio	0.08	0.08	0.31		0.08		0.87	0.87		0.61	0.61	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	113	154	516		205		551	3023		291	2179	
v/s Ratio Prot		0.01	0.09				c0.19	0.32				0.44
v/s Ratio Perm	c0.05		0.03		0.01		c0.51			0.10		
v/c Ratio	0.62	0.15	0.38		0.10		0.80	0.36		0.16	0.72	
Uniform Delay, d1	62.4	60.1	37.6		59.8		37.8	1.7		11.7	18.7	
Progression Factor	1.00	1.00	1.00		1.00		0.81	0.21		1.00	1.00	
Incremental Delay, d2	9.7	0.5	0.3		0.2		7.5	0.3		1.2	2.0	
Delay (s)	72.1	60.5	38.0		60.0		38.2	0.7		12.9	20.7	
Level of Service	E	E	D		E		D	A		B	C	
Approach Delay (s)		47.1			60.0			11.4			20.5	
Approach LOS		D			E			B			C	
Intersection Summary												
HCM 2000 Control Delay			19.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			83.5%				ICU Level of Service			E		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center

	↙	↖	↗	↑	↘	↓	Ø4
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↗	↑↓	↘	↗	
Traffic Volume (vph)	207	153	3	1005	494	775	
Future Volume (vph)	207	153	3	1005	494	775	
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	
Protected Phases		1		2	1	6	4
Permitted Phases	8	8	2		6		
Detector Phase	8	1	2	2	1	6	
Switch Phase							
Minimum Initial (s)	8.0	6.0	20.0	20.0	6.0	20.0	8.0
Minimum Split (s)	22.0	11.5	26.5	26.5	11.5	26.5	22.0
Total Split (s)	22.0	29.9	48.1	48.1	29.9	78.0	22.0
Total Split (%)	22.0%	29.9%	48.1%	48.1%	29.9%	78.0%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes	Yes		
Recall Mode	None	None	C-Min	C-Min	None	C-Min	None
Act Effect Green (s)	16.0	46.4	41.6	41.6	72.5	71.5	
Actuated g/C Ratio	0.16	0.46	0.42	0.42	0.72	0.72	
v/c Ratio	1.00	0.22	0.01	1.08	1.06	0.34	
Control Delay	103.9	13.1	14.0	71.9	87.2	5.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	103.9	13.1	14.0	71.9	87.2	5.8	
LOS	F	B	B	E	F	A	
Approach Delay				71.8		37.4	
Approach LOS				E		D	

Intersection Summary







Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 11 (11%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.08
 Intersection Signal Delay: 56.8
 Intersection Capacity Utilization 94.2%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service F

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center























						
Lane Group	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	225	166	3	1576	537	845
v/c Ratio	1.00	0.22	0.01	1.08	1.06	0.34
Control Delay	103.9	13.1	14.0	71.9	87.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.9	13.1	14.0	71.9	87.2	5.8
Queue Length 50th (ft)	145	46	1	~583	~327	91
Queue Length 95th (ft)	#298	88	m2	m#722	#534	118
Internal Link Dist (ft)				493		1729
Turn Bay Length (ft)	200		100		100	
Base Capacity (vph)	225	754	258	1454	505	2515
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.22	0.01	1.08	1.06	0.34

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	0	0	0	207	0	153	3	1005	445	494	775	3	
Future Volume (vph)	0	0	0	207	0	153	3	1005	445	494	775	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		0%			0%			0%			1%		
Total Lost time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Lane Util. Factor				1.00		1.00	1.00	0.95		1.00	0.95		
Fr _t				1.00		0.85	1.00	0.95		1.00	1.00		
Fl _t Protected				0.95		1.00	0.95	1.00		0.95	1.00		
Satd. Flow (prot)				1770		1583	1770	3376		1761	3520		
Fl _t Permitted				0.76		1.00	0.33	1.00		0.08	1.00		
Satd. Flow (perm)				1410		1583	623	3376		157	3520		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	0	0	0	225	0	166	3	1092	484	537	842	3	
RTOR Reduction (vph)	0	0	0	0	0	23	0	50	0	0	0	0	
Lane Group Flow (vph)	0	0	0	225	0	143	3	1526	0	537	845	0	
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA		
Protected Phases		4				1		2		1	6		
Permitted Phases	4			8		8	2			6			
Actuated Green, G (s)				16.0		40.4	41.6	41.6		71.5	71.5		
Effective Green, g (s)				16.0		40.4	41.6	41.6		71.5	71.5		
Actuated g/C Ratio				0.16		0.40	0.42	0.42		0.72	0.72		
Clearance Time (s)				6.0		5.5	6.5	6.5		5.5	6.5		
Vehicle Extension (s)				3.0		3.0	3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)				225		639	259	1404		503	2516		
v/s Ratio Prot						0.05		0.45		c0.26	0.24		
v/s Ratio Perm				c0.16		0.04	0.00			c0.50			
v/c Ratio				1.00		0.22	0.01	1.09		1.07	0.34		
Uniform Delay, d ₁				42.0		19.5	17.1	29.2		31.5	5.3		
Progression Factor				1.00		1.00	0.79	0.76		1.00	1.00		
Incremental Delay, d ₂				60.0		0.2	0.1	50.7		59.4	0.4		
Delay (s)				102.0		19.7	13.7	72.8		90.9	5.7		
Level of Service				F		B	B	E		F	A		
Approach Delay (s)		0.0			67.1			72.7			38.8		
Approach LOS		A			E			E			D		
Intersection Summary													
HCM 2000 Control Delay			58.1									HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.09										
Actuated Cycle Length (s)			100.0									Sum of lost time (s)	18.0
Intersection Capacity Utilization			94.2%									ICU Level of Service	F
Analysis Period (min)			15										
c Critical Lane Group													

Timings
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	142	85	83	62	221	364	823	39	760
Future Volume (vph)	142	85	83	62	221	364	823	39	760
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	32.5	12.0	29.5
Total Split (s)	12.0	21.0	25.0	12.0	21.0	25.0	55.0	12.0	42.0
Total Split (%)	12.0%	21.0%	25.0%	12.0%	21.0%	25.0%	55.0%	12.0%	42.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	23.3	18.4	43.4	21.2	15.2	59.9	52.2	40.9	34.4
Actuated g/C Ratio	0.23	0.18	0.43	0.21	0.15	0.60	0.52	0.41	0.34
v/c Ratio	0.78	0.27	0.12	0.22	0.95	0.96	0.49	0.14	0.92
Control Delay	59.4	40.0	3.4	30.0	84.3	62.4	17.1	9.1	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	59.4	40.0	3.4	30.0	84.3	62.4	17.5	9.1	43.8
LOS	E	D	A	C	F	E	B	A	D
Approach Delay		39.1			73.4		31.2		42.5
Approach LOS		D			E		C		D

Intersection Summary










Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 16 (16%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 40.7
 Intersection Capacity Utilization 90.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	154	92	90	67	267	396	907	42	1099
v/c Ratio	0.78	0.27	0.12	0.22	0.95	0.96	0.49	0.14	0.92
Control Delay	59.4	40.0	3.4	30.0	84.3	62.4	17.1	9.1	43.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	59.4	40.0	3.4	30.0	84.3	62.4	17.5	9.1	43.8
Queue Length 50th (ft)	79	53	0	32	168	194	202	8	346
Queue Length 95th (ft)	#165	101	24	67	#327	#381	260	m17	m#421
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	198	343	746	303	282	414	1845	309	1236
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	431	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.27	0.12	0.22	0.95	0.96	0.64	0.14	0.89

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd























2030 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	85	83	62	221	25	364	823	11	39	760	251
Future Volume (vph)	142	85	83	62	221	25	364	823	11	39	760	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1834		1770	3532		1761	3390	
Flt Permitted	0.25	1.00	1.00	0.70	1.00		0.10	1.00		0.31	1.00	
Satd. Flow (perm)	465	1863	1583	1299	1834		190	3532		583	3390	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	154	92	90	67	240	27	396	895	12	42	826	273
RTOR Reduction (vph)	0	0	56	0	4	0	0	1	0	0	33	0
Lane Group Flow (vph)	154	92	34	67	263	0	396	906	0	42	1066	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	25.3	18.4	37.4	21.1	16.3		58.3	48.7		36.9	33.3	
Effective Green, g (s)	25.3	18.4	37.4	21.1	16.3		58.3	48.7		36.9	33.3	
Actuated g/C Ratio	0.25	0.18	0.37	0.21	0.16		0.58	0.49		0.37	0.33	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	207	342	687	296	298		410	1720		257	1128	
v/s Ratio Prot	c0.05	0.05	0.01	0.01	c0.14		c0.18	0.26		0.01	0.31	
v/s Ratio Perm	0.14		0.01	0.04			c0.38			0.05		
v/c Ratio	0.74	0.27	0.05	0.23	0.88		0.97	0.53		0.16	0.94	
Uniform Delay, d1	31.5	35.0	20.0	32.4	40.9		29.8	17.7		20.4	32.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.83	1.07	
Incremental Delay, d2	13.5	0.4	0.0	0.4	24.8		35.3	1.2		0.3	15.4	
Delay (s)	45.0	35.5	20.0	32.7	65.8		65.0	18.9		17.2	50.1	
Level of Service	D	D	B	C	E		E	B		B	D	
Approach Delay (s)		35.7			59.1			32.9			48.9	
Approach LOS		D			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	41.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected AM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	62	152	19	51	528	244	6	32	6	109	290	38
Future Volume (Veh/h)	62	152	19	51	528	244	6	32	6	109	290	38
Sign Control		Free			Free			Stop			Stop	
Grade		-9%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	67	165	21	55	574	265	7	35	7	118	315	41
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)									40			
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)					1142							
pX, platoon unblocked												
vC, conflicting volume	839			186			905	1258	93	1050	1136	420
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	839			186			905	1258	93	1050	1136	420
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			96			0	77	99	12	0	93
cM capacity (veh/h)	791			1386			0	149	946	134	176	582
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1	SB 2				
Volume Total	67	110	76	342	552	49	118	356				
Volume Left	67	0	0	55	0	7	118	0				
Volume Right	0	0	21	0	265	7	0	41				
cSH	791	1700	1700	1386	1700	145	134	192				
Volume to Capacity	0.08	0.06	0.04	0.04	0.32	0.34	0.88	1.86				
Queue Length 95th (ft)	7	0	0	3	0	34	143	643				
Control Delay (s)	10.0	0.0	0.0	1.5	0.0	42.5	111.1	446.6				
Lane LOS	A			A		E	F	F				
Approach Delay (s)	2.6			0.6		42.5	363.1					
Approach LOS						E	F					
Intersection Summary												
Average Delay			105.0									
Intersection Capacity Utilization			56.3%		ICU Level of Service				B			
Analysis Period (min)			15									

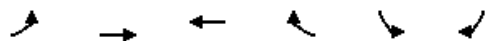
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Projected AM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	36	14	229	46	26	414	
Future Volume (Veh/h)	36	14	229	46	26	414	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	39	15	249	50	28	450	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	555	150			299		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	555	150			299		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	91	98			98		
cM capacity (veh/h)	451	870			1259		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	39	15	166	133	28	225	225
Volume Left	39	0	0	0	28	0	0
Volume Right	0	15	0	50	0	0	0
cSH	451	870	1700	1700	1259	1700	1700
Volume to Capacity	0.09	0.02	0.10	0.08	0.02	0.13	0.13
Queue Length 95th (ft)	7	1	0	0	2	0	0
Control Delay (s)	13.7	9.2	0.0	0.0	7.9	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	12.5		0.0		0.5		
Approach LOS	B						
Intersection Summary							
Average Delay			1.1				
Intersection Capacity Utilization			24.5%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Projected AM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	3	397	692	22	453	55
Future Volume (Veh/h)	3	397	692	22	453	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	432	752	24	492	60
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)	968					
pX, platoon unblocked						
vC, conflicting volume	776			986	388	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	776			986	388	
tC, single (s)	4.1			6.8	6.9	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			0	90	
cM capacity (veh/h)	836			244	611	
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	147	288	501	275	492	60
Volume Left	3	0	0	0	492	0
Volume Right	0	0	0	24	0	60
cSH	836	1700	1700	1700	244	611
Volume to Capacity	0.00	0.17	0.29	0.16	2.02	0.10
Queue Length 95th (ft)	0	0	0	0	903	8
Control Delay (s)	0.2	0.0	0.0	0.0	505.0	11.5
Lane LOS	A				F	B
Approach Delay (s)	0.1	0.0			451.4	
Approach LOS					F	
Intersection Summary						
Average Delay			141.4			
Intersection Capacity Utilization			51.6%	ICU Level of Service	A	
Analysis Period (min)	15					

Timings
10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	399	445	357	271	105	136	379	18	445
Future Volume (vph)	399	445	357	271	105	136	379	18	445
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	29.0	41.0	41.0	18.0	30.0	16.0	41.0	10.0	35.0
Total Split (%)	26.4%	37.3%	37.3%	16.4%	27.3%	14.5%	37.3%	9.1%	31.8%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	50.4	32.6	32.6	11.8	22.6	46.9	43.1	36.6	31.5
Actuated g/C Ratio	0.46	0.30	0.30	0.11	0.21	0.43	0.39	0.33	0.29
v/c Ratio	0.72	0.88	0.38	0.80	0.33	0.56	0.46	0.07	0.69
Control Delay	28.6	54.6	8.8	65.0	38.1	29.4	23.7	20.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	54.6	8.8	65.0	38.1	29.4	23.7	20.7	36.8
LOS	C	D	A	E	D	C	C	C	D
Approach Delay		32.4			57.0		24.8		36.3
Approach LOS		C			E		C		D

Intersection Summary










Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 34.6
 Intersection Capacity Utilization 78.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak w MOB
Parkwest Medical Center























									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	434	484	388	295	125	148	636	20	695
v/c Ratio	0.72	0.88	0.38	0.80	0.33	0.56	0.46	0.07	0.69
Control Delay	28.6	54.6	8.8	65.0	38.1	29.4	23.7	20.7	36.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	54.6	8.8	65.0	38.1	29.4	23.7	20.7	36.8
Queue Length 50th (ft)	204	313	28	106	72	67	142	8	219
Queue Length 95th (ft)	296	#480	68	#170	127	113	226	24	288
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	612	592	1083	374	404	268	1370	285	1008
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.82	0.36	0.79	0.31	0.55	0.46	0.07	0.69

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak w MOB
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	399	445	357	271	105	10	136	379	206	18	445	194
Future Volume (vph)	399	445	357	271	105	10	136	379	206	18	445	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1838		1770	3352		1770	3378	
Flt Permitted	0.52	1.00	1.00	0.95	1.00		0.18	1.00		0.39	1.00	
Satd. Flow (perm)	973	1863	2787	3433	1838		341	3352		726	3378	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	434	484	388	295	114	11	148	412	224	20	484	211
RTOR Reduction (vph)	0	0	203	0	3	0	0	62	0	0	43	0
Lane Group Flow (vph)	434	484	185	295	122	0	148	574	0	20	652	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	50.4	32.6	32.6	11.8	22.6		47.1	39.5		33.1	31.5	
Effective Green, g (s)	50.4	32.6	32.6	11.8	22.6		47.1	39.5		33.1	31.5	
Actuated g/C Ratio	0.46	0.30	0.30	0.11	0.21		0.43	0.36		0.30	0.29	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	603	552	825	368	377		264	1203		233	967	
v/s Ratio Prot	c0.14	c0.26		0.09	0.07		c0.05	0.17		0.00	c0.19	
v/s Ratio Perm	0.19		0.07				0.19			0.02		
v/c Ratio	0.72	0.88	0.22	0.80	0.32		0.56	0.48		0.09	0.67	
Uniform Delay, d1	21.7	36.8	29.2	48.0	37.2		21.9	27.3		27.2	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	14.6	0.1	11.9	0.5		2.7	1.4		0.2	3.8	
Delay (s)	25.8	51.3	29.3	59.8	37.7		24.6	28.6		27.4	38.5	
Level of Service	C	D	C	E	D		C	C		C	D	
Approach Delay (s)		36.3			53.2			27.9			38.2	
Approach LOS		D			D			C			D	

Intersection Summary

HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected PM Peak w MOB
Parkwest Medical Center

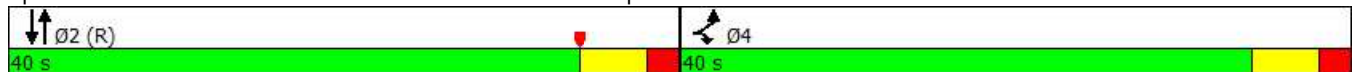
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	634	572	1584	1443
Future Volume (vph)	634	572	1584	1443
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	30.1	30.1	41.9	41.9
Actuated g/C Ratio	0.38	0.38	0.52	0.52
v/c Ratio	0.70	0.74	0.51	0.59
Control Delay	23.6	29.3	13.9	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	29.3	13.9	11.7
LOS	C	C	B	B
Approach Delay	25.4		13.9	11.7
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 51 (64%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 58.6%
 Analysis Period (min) 15





Intersection LOS: B
ICU Level of Service B

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	900	411	1722	1568
v/c Ratio	0.70	0.74	0.51	0.59
Control Delay	23.6	29.3	13.9	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	23.6	29.3	13.9	11.7
Queue Length 50th (ft)	188	185	154	189
Queue Length 95th (ft)	221	269	217	219
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1531	659	3352	2674
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.59	0.62	0.51	0.59
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected PM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	634	572	0	1584	1443	0
Future Volume (vph)	634	572	0	1584	1443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Flt	0.96	0.85		1.00	1.00	
Flt Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3392	1455		6408	5111	
Flt Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3392	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	689	622	0	1722	1568	0
RTOR Reduction (vph)	6	6	0	0	0	0
Lane Group Flow (vph)	894	405	0	1722	1568	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	28.1	28.1		39.9	39.9	
Effective Green, g (s)	30.1	30.1		41.9	41.9	
Actuated g/C Ratio	0.38	0.38		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1276	547		3356	2676	
v/s Ratio Prot	0.26	c0.28		0.27	c0.31	
v/s Ratio Perm						
v/c Ratio	0.70	0.74		0.51	0.59	
Uniform Delay, d1	21.1	21.6		12.4	13.1	
Progression Factor	1.00	1.00		1.00	0.78	
Incremental Delay, d2	1.4	4.7		0.6	0.8	
Delay (s)	22.6	26.3		13.0	11.0	
Level of Service	C	C		B	B	
Approach Delay (s)	23.7			13.0	11.0	
Approach LOS	C			B	B	
Intersection Summary						
HCM 2000 Control Delay			15.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.65			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			58.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected PM Peak w MOB
Parkwest Medical Center

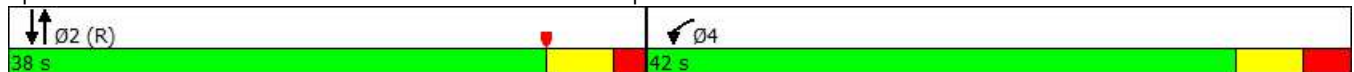
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	969	1605	924
Future Volume (vph)	969	1605	924
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	42.0	38.0	38.0
Total Split (%)	52.5%	47.5%	47.5%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	32.3	39.7	39.7
Actuated g/C Ratio	0.40	0.50	0.50
v/c Ratio	0.74	0.53	0.40
Control Delay	23.3	10.2	10.1
Queue Delay	0.0	0.0	0.0
Total Delay	23.3	10.2	10.1
LOS	C	B	B
Approach Delay	23.3	10.2	10.1
Approach LOS	C	B	B

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 55 (69%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 58.6%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service B

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp

















Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1053	1745	1004
v/c Ratio	0.74	0.53	0.40
Control Delay	23.3	10.2	10.1
Queue Delay	0.0	0.0	0.0
Total Delay	23.3	10.2	10.1
Queue Length 50th (ft)	222	92	74
Queue Length 95th (ft)	256	105	128
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1676	3299	2495
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.63	0.53	0.40
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected PM Peak w MOB
 Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		  			  
Traffic Volume (vph)	969	0	1605	0	0	924
Future Volume (vph)	969	0	1605	0	0	924
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Flt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1053	0	1745	0	0	1004
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1053	0	1745	0	0	1004
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	29.3		37.7			37.7
Effective Green, g (s)	32.3		39.7			39.7
Actuated g/C Ratio	0.40		0.50			0.50
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1425		3302			2498
v/s Ratio Prot	c0.30		c0.26			0.20
v/s Ratio Perm						
v/c Ratio	0.74		0.53			0.40
Uniform Delay, d1	20.3		13.8			12.7
Progression Factor	1.00		0.66			0.73
Incremental Delay, d2	1.8		0.5			0.3
Delay (s)	22.0		9.6			9.6
Level of Service	C		A			A
Approach Delay (s)	22.0		9.6			9.6
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			13.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			58.6%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

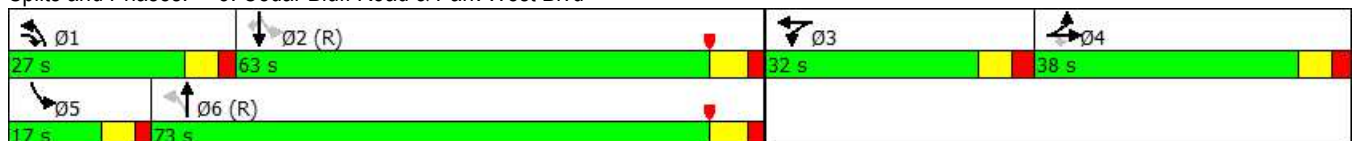
2030 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	83	38	437	318	93	220	694	55	1046	36
Future Volume (vph)	83	38	437	318	93	220	694	55	1046	36
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	38.0	38.0	27.0	32.0	32.0	27.0	73.0	17.0	63.0	63.0
Total Split (%)	23.8%	23.8%	16.9%	20.0%	20.0%	16.9%	45.6%	10.6%	39.4%	39.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	31.9	31.9	56.6	26.2	26.2	90.4	79.1	76.8	65.2	65.2
Actuated g/C Ratio	0.20	0.20	0.35	0.16	0.16	0.56	0.49	0.48	0.41	0.41
v/c Ratio	0.26	0.84	0.48	0.83	0.68	0.80	0.34	0.17	0.77	0.05
Control Delay	55.7	84.5	42.9	90.0	50.1	64.9	17.0	15.3	36.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	55.7	84.5	42.9	90.0	50.1	64.9	17.1	15.3	36.0	0.1
LOS	E	F	D	F	D	E	B	B	D	A
Approach Delay		62.6			63.7		27.7		33.8	
Approach LOS		E			E		C		C	

Intersection Summary

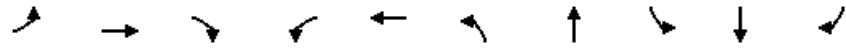
Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 52 (33%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 42.3
 Intersection Capacity Utilization 77.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	260	256	221	428	239	837	60	1137	39
v/c Ratio	0.26	0.84	0.48	0.83	0.68	0.80	0.34	0.17	0.77	0.05
Control Delay	55.7	84.5	42.9	90.0	50.1	64.9	17.0	15.3	36.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	55.7	84.5	42.9	90.0	50.1	64.9	17.1	15.3	36.0	0.1
Queue Length 50th (ft)	79	272	209	246	166	232	183	23	591	0
Queue Length 95th (ft)	134	#409	300	#384	231	#351	212	41	471	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	370	335	552	283	665	315	2484	399	1470	746
Starvation Cap Reductn	0	0	0	0	0	0	625	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.78	0.46	0.78	0.64	0.76	0.45	0.15	0.77	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	38	437	318	93	186	220	694	76	55	1046	36
Future Volume (vph)	83	38	437	318	93	186	220	694	76	55	1046	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1554	1512	1618	3224		1770	5010		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.99		0.08	1.00		0.32	1.00	1.00
Satd. Flow (perm)	1719	1554	1512	1618	3224		146	5010		596	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	41	475	346	101	202	239	754	83	60	1137	39
RTOR Reduction (vph)	0	0	0	0	102	0	0	8	0	0	0	23
Lane Group Flow (vph)	90	260	256	221	326	0	239	829	0	60	1137	16
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	28.9	28.9	48.1	23.7	23.7		87.9	75.5		69.1	62.7	62.7
Effective Green, g (s)	31.9	31.9	52.1	26.2	26.2		89.9	78.0		75.1	65.2	65.2
Actuated g/C Ratio	0.20	0.20	0.33	0.16	0.16		0.56	0.49		0.47	0.41	0.41
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	342	309	492	264	527		297	2442		347	1471	658
v/s Ratio Prot	0.05	c0.17	0.07	c0.14	0.10		c0.11	0.17		0.01	0.31	
v/s Ratio Perm			0.10				c0.35			0.07		0.01
v/c Ratio	0.26	0.84	0.52	0.84	0.62		0.80	0.34		0.17	0.77	0.02
Uniform Delay, d1	54.1	61.6	43.8	64.8	62.3		43.6	25.2		23.3	41.0	28.4
Progression Factor	1.01	1.00	1.00	1.00	1.00		1.26	0.65		0.82	0.76	1.00
Incremental Delay, d2	0.3	18.1	0.8	19.7	1.9		12.4	0.3		0.2	3.5	0.1
Delay (s)	54.8	79.9	44.7	84.5	64.1		67.5	16.7		19.3	34.5	28.4
Level of Service	D	E	D	F	E		E	B		B	C	C
Approach Delay (s)		61.3			71.1			28.0			33.6	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			43.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			77.3%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	202	3	171	83	0	125	905	7	1197
Future Volume (vph)	202	3	171	83	0	125	905	7	1197
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	51.0	51.0	20.0	51.0	51.0	20.0	109.0	89.0	89.0
Total Split (%)	31.9%	31.9%	12.5%	31.9%	31.9%	12.5%	68.1%	55.6%	55.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	34.0	34.0	47.9		34.0	119.5	119.0	105.6	105.6
Actuated g/C Ratio	0.21	0.21	0.30		0.21	0.75	0.74	0.66	0.66
v/c Ratio	0.77	0.01	0.35		0.17	0.43	0.38	0.02	0.55
Control Delay	76.5	44.3	33.9		23.8	16.0	7.1	13.0	16.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	44.3	33.9		23.8	16.0	7.1	13.0	16.9
LOS	E	D	C		C	B	A	B	B
Approach Delay		56.9			23.8		8.2		16.9
Approach LOS		E			C		A		B

Intersection Summary

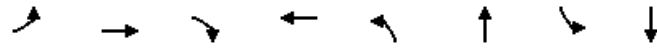
Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 72 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 19.3
 Intersection Capacity Utilization 70.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center

























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	220	3	186	95	136	1001	8	1321
v/c Ratio	0.77	0.01	0.35	0.17	0.43	0.38	0.02	0.55
Control Delay	76.5	44.3	33.9	23.8	16.0	7.1	13.0	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.5	44.3	33.9	23.8	16.0	7.1	13.0	16.9
Queue Length 50th (ft)	219	3	119	19	26	138	3	365
Queue Length 95th (ft)	297	12	168	43	86	193	12	543
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	398	578	590	772	386	2651	349	2397
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.01	0.32	0.12	0.35	0.38	0.02	0.55

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	3	171	83	0	5	125	905	16	7	1197	18
Future Volume (vph)	202	3	171	83	0	5	125	905	16	7	1197	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3223		1906	3566		1761	3631	
Flt Permitted	0.69	1.00	1.00		0.74		0.14	1.00		0.29	1.00	
Satd. Flow (perm)	1344	1947	1655		2483		287	3566		530	3631	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	3	186	90	0	5	136	984	17	8	1301	20
RTOR Reduction (vph)	0	0	30	0	40	0	0	1	0	0	0	0
Lane Group Flow (vph)	220	3	156	0	55	0	136	1000	0	8	1321	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	31.5	31.5	39.9		31.5		117.0	117.0		103.6	103.6	
Effective Green, g (s)	34.0	34.0	43.9		34.0		119.0	119.0		105.6	105.6	
Actuated g/C Ratio	0.21	0.21	0.27		0.21		0.74	0.74		0.66	0.66	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	285	413	454		527		318	2652		349	2396	
v/s Ratio Prot		0.00	0.02				c0.03	0.28				c0.36
v/s Ratio Perm	c0.16		0.07		0.02		0.29			0.02		
v/c Ratio	0.77	0.01	0.34		0.10		0.43	0.38		0.02	0.55	
Uniform Delay, d1	59.3	49.7	46.5		50.7		10.9	7.3		9.4	14.5	
Progression Factor	1.00	1.00	1.00		1.00		1.86	0.84		1.00	1.00	
Incremental Delay, d2	12.2	0.0	0.3		0.1		0.6	0.4		0.1	0.9	
Delay (s)	71.5	49.7	46.8		50.8		20.9	6.5		9.5	15.5	
Level of Service	E	D	D		D		C	A		A	B	
Approach Delay (s)		60.1			50.8			8.2			15.4	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.0				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			70.0%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↕	
Traffic Volume (vph)	95	61	1060	69	1213	
Future Volume (vph)	95	61	1060	69	1213	
Turn Type	Perm	Over	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8			6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	14.0	11.5	26.5	11.5	26.5	14.0
Total Split (s)	24.0	14.0	77.0	14.0	91.0	24.0
Total Split (%)	20.9%	12.2%	67.0%	12.2%	79.1%	21%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	13.7	6.8	78.8	89.8	88.8	
Actuated g/C Ratio	0.12	0.06	0.69	0.78	0.77	
v/c Ratio	0.62	0.37	0.62	0.28	0.48	
Control Delay	63.1	11.1	9.6	6.1	5.9	
Queue Delay	0.0	0.0	0.1	0.0	0.1	
Total Delay	63.1	11.1	9.7	6.1	5.9	
LOS	E	B	A	A	A	
Approach Delay			9.7		6.0	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 52 (45%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 69.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center


























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	103	66	1462	75	1318
v/c Ratio	0.62	0.37	0.62	0.28	0.48
Control Delay	63.1	11.1	9.6	6.1	5.9
Queue Delay	0.0	0.0	0.1	0.0	0.1
Total Delay	63.1	11.1	9.7	6.1	5.9
Queue Length 50th (ft)	74	0	176	10	155
Queue Length 95th (ft)	125	27	m479	26	244
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	223	200	2372	289	2728
Starvation Cap Reductn	0	0	126	0	0
Spillback Cap Reductn	0	0	0	0	272
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.33	0.65	0.26	0.54

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (vph)	0	0	0	95	0	61	0	1060	285	69	1213	0
Future Volume (vph)	0	0	0	95	0	61	0	1060	285	69	1213	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3427		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.12	1.00	
Satd. Flow (perm)				1410		1583		3427		226	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	103	0	66	0	1152	310	75	1318	0
RTOR Reduction (vph)	0	0	0	0	0	63	0	18	0	0	0	0
Lane Group Flow (vph)	0	0	0	103	0	3	0	1444	0	75	1318	0
Turn Type	Perm			Perm		Over	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)				13.7		5.6		77.7		88.8	88.8	
Effective Green, g (s)				13.7		5.6		77.7		88.8	88.8	
Actuated g/C Ratio				0.12		0.05		0.68		0.77	0.77	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				167		77		2315		249	2719	
v/s Ratio Prot						0.00		c0.42		0.01	c0.37	
v/s Ratio Perm				c0.07						0.22		
v/c Ratio				0.62		0.04		0.62		0.30	0.48	
Uniform Delay, d ₁				48.2		52.1		10.5		7.2	4.8	
Progression Factor				1.00		1.00		0.78		1.00	1.00	
Incremental Delay, d ₂				6.6		0.2		1.1		0.7	0.6	
Delay (s)				54.8		52.4		9.3		7.8	5.4	
Level of Service				D		D		A		A	A	
Approach Delay (s)		0.0			53.8			9.3			5.5	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.0									B
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			115.0							18.0		
Intersection Capacity Utilization			69.6%									C
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	241	114	66	28	183	262	782	26	1108
Future Volume (vph)	241	114	66	28	183	262	782	26	1108
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	20.0	29.0	21.0	12.0	21.0	21.0	62.0	12.0	53.0
Total Split (%)	17.4%	25.2%	18.3%	10.4%	18.3%	18.3%	53.9%	10.4%	46.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	35.0	27.8	48.8	21.0	15.0	68.0	60.3	53.0	46.5
Actuated g/C Ratio	0.30	0.24	0.42	0.18	0.13	0.59	0.52	0.46	0.40
v/c Ratio	0.90	0.28	0.10	0.12	0.99	0.95	0.48	0.09	0.95
Control Delay	68.1	39.5	3.4	30.4	103.9	72.3	19.3	10.2	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	68.1	39.5	3.4	30.4	103.9	72.3	19.3	10.2	45.2
LOS	E	D	A	C	F	E	B	B	D
Approach Delay		50.2			95.7		32.1		44.5
Approach LOS		D			F		C		D

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 12 (10%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.99
 Intersection Signal Delay: 45.1
 Intersection Capacity Utilization 94.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	262	124	72	30	239	285	893	28	1341
v/c Ratio	0.90	0.28	0.10	0.12	0.99	0.95	0.48	0.09	0.95
Control Delay	68.1	39.5	3.4	30.4	103.9	72.3	19.3	10.2	44.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
Total Delay	68.1	39.5	3.4	30.4	103.9	72.3	19.3	10.2	45.2
Queue Length 50th (ft)	158	79	0	16	174	156	232	5	502
Queue Length 95th (ft)	#287	136	21	39	#340	#328	291	m15	#653
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	290	450	723	256	242	299	1845	316	1410
Starvation Cap Reductn	0	0	0	0	0	0	0	0	14
Spillback Cap Reductn	0	0	0	0	0	0	101	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.28	0.10	0.12	0.99	0.95	0.51	0.09	0.96

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

























2030 Projected PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	114	66	28	183	37	262	782	40	26	1108	126
Future Volume (vph)	241	114	66	28	183	37	262	782	40	26	1108	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1816		1770	3514		1761	3468	
Flt Permitted	0.22	1.00	1.00	0.68	1.00		0.08	1.00		0.30	1.00	
Satd. Flow (perm)	411	1863	1583	1262	1816		149	3514		549	3468	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	124	72	30	199	40	285	850	43	28	1204	137
RTOR Reduction (vph)	0	0	45	0	6	0	0	3	0	0	8	0
Lane Group Flow (vph)	262	124	27	30	233	0	285	890	0	28	1333	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	37.4	27.8	42.8	21.0	17.4		65.1	55.5		47.7	44.1	
Effective Green, g (s)	37.4	27.8	42.8	21.0	17.4		65.1	55.5		47.7	44.1	
Actuated g/C Ratio	0.33	0.24	0.37	0.18	0.15		0.57	0.48		0.41	0.38	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	299	450	671	246	274		295	1695		265	1329	
v/s Ratio Prot	c0.11	0.07	0.01	0.00	0.13		c0.13	0.25		0.00	0.38	
v/s Ratio Perm	c0.18		0.01	0.02			c0.42			0.04		
v/c Ratio	0.88	0.28	0.04	0.12	0.85		0.97	0.53		0.11	1.00	
Uniform Delay, d1	32.0	35.4	23.0	39.1	47.5		36.1	20.6		20.1	35.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.88	0.91	
Incremental Delay, d2	23.7	0.3	0.0	0.2	21.5		42.8	1.2		0.2	24.0	
Delay (s)	55.7	35.8	23.0	39.3	69.1		78.9	21.8		17.9	56.4	
Level of Service	E	D	C	D	E		E	C		B	E	
Approach Delay (s)		45.2			65.7			35.6			55.6	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected PM Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	40	433	10	25	220	89	23	45	21	174	127	17	
Future Volume (Veh/h)	40	433	10	25	220	89	23	45	21	174	127	17	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	43	471	11	27	239	97	25	49	23	189	138	18	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	336			482			823	952	241	710	910	168	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	336			482			823	952	241	710	910	168	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	96			97			83	80	97	25	46	98	
cM capacity (veh/h)	1220			1077			144	242	760	251	257	847	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	43	314	168	146	216	74	23	189	156				
Volume Left	43	0	0	27	0	25	0	189	0				
Volume Right	0	0	11	0	97	0	23	0	18				
cSH	1220	1700	1700	1077	1700	197	760	251	279				
Volume to Capacity	0.04	0.18	0.10	0.03	0.13	0.38	0.03	0.75	0.56				
Queue Length 95th (ft)	3	0	0	2	0	41	2	135	79				
Control Delay (s)	8.1	0.0	0.0	1.7	0.0	33.9	9.9	53.0	33.0				
Lane LOS	A			A		D	A	F	D				
Approach Delay (s)	0.7			0.7		28.2		44.0					
Approach LOS						D		E					
Intersection Summary													
Average Delay	13.9												
Intersection Capacity Utilization	48.6%			ICU Level of Service					A				
Analysis Period (min)	15												

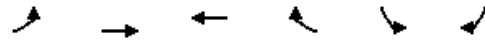
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Projected PM Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	29	17	313	163	19	167	
Future Volume (Veh/h)	29	17	313	163	19	167	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	32	18	340	177	21	182	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	562	258			517		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	562	258			517		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	93	98			98		
cM capacity (veh/h)	448	740			1045		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	32	18	227	290	21	91	91
Volume Left	32	0	0	0	21	0	0
Volume Right	0	18	0	177	0	0	0
cSH	448	740	1700	1700	1045	1700	1700
Volume to Capacity	0.07	0.02	0.13	0.17	0.02	0.05	0.05
Queue Length 95th (ft)	6	2	0	0	2	0	0
Control Delay (s)	13.7	10.0	0.0	0.0	8.5	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	12.3		0.0		0.9		
Approach LOS	B						
Intersection Summary							
Average Delay			1.0				
Intersection Capacity Utilization			25.8%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd



















2030 Projected PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	528	346	0	32	0
Future Volume (Veh/h)	0	528	346	0	32	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	574	376	0	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	376				663	188
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376				663	188
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	100
cM capacity (veh/h)	1179				394	822
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	191	383	251	125	35	0
Volume Left	0	0	0	0	35	0
Volume Right	0	0	0	0	0	0
cSH	1179	1700	1700	1700	394	1700
Volume to Capacity	0.00	0.23	0.15	0.07	0.09	0.00
Queue Length 95th (ft)	0	0	0	0	7	0
Control Delay (s)	0.0	0.0	0.0	0.0	15.0	0.0
Lane LOS					C	A
Approach Delay (s)	0.0		0.0		15.0	
Approach LOS					C	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			24.6%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

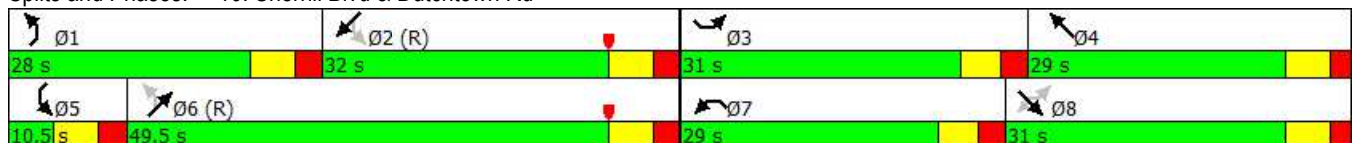
2030 Projected PM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	401	218	134	521	304	327	744	15	540
Future Volume (vph)	401	218	134	521	304	327	744	15	540
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	31.0	31.0	31.0	29.0	29.0	28.0	49.5	10.5	32.0
Total Split (%)	25.8%	25.8%	25.8%	24.2%	24.2%	23.3%	41.3%	8.8%	26.7%
Yellow Time (s)	3.5	4.0	4.0	3.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	50.6	25.6	25.6	22.4	23.0	53.5	49.3	29.9	25.9
Actuated g/C Ratio	0.42	0.21	0.21	0.19	0.19	0.45	0.41	0.25	0.22
v/c Ratio	1.01	0.60	0.19	0.89	0.99	0.95	0.67	0.10	0.86
Control Delay	81.2	49.9	1.9	64.3	92.9	67.7	31.8	22.5	57.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	49.9	1.9	64.3	92.9	67.7	31.8	22.5	57.4
LOS	F	D	A	E	F	E	C	C	E
Approach Delay		58.0			75.2		41.5		56.6
Approach LOS		E			E		D		E

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 56.2
 Intersection Capacity Utilization 95.1%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service F

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected PM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	436	237	146	566	350	355	957	16	653
v/c Ratio	1.01	0.60	0.19	0.89	0.99	0.95	0.67	0.10	0.86
Control Delay	81.2	49.9	1.9	64.3	92.9	67.7	31.8	22.5	57.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.2	49.9	1.9	64.3	92.9	67.7	31.8	22.5	57.4
Queue Length 50th (ft)	~298	168	0	220	271	219	286	7	255
Queue Length 95th (ft)	#513	255	9	#309	#468	#406	417	20	#354
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	431	398	756	657	355	380	1432	165	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.60	0.19	0.86	0.99	0.93	0.67	0.10	0.86

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected PM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	401	218	134	521	304	18	327	744	136	15	540	61
Future Volume (vph)	401	218	134	521	304	18	327	744	136	15	540	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3457		1770	3486	
Flt Permitted	0.16	1.00	1.00	0.95	1.00		0.13	1.00		0.26	1.00	
Satd. Flow (perm)	291	1863	2787	3433	1847		237	3457		493	3486	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	237	146	566	330	20	355	809	148	16	587	66
RTOR Reduction (vph)	0	0	115	0	2	0	0	12	0	0	7	0
Lane Group Flow (vph)	436	237	31	566	348	0	355	945	0	16	646	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	50.6	25.6	25.6	22.4	23.0		53.5	45.4		27.5	25.9	
Effective Green, g (s)	50.6	25.6	25.6	22.4	23.0		53.5	45.4		27.5	25.9	
Actuated g/C Ratio	0.42	0.21	0.21	0.19	0.19		0.45	0.38		0.23	0.22	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	430	397	594	640	354		375	1307		130	752	
v/s Ratio Prot	c0.21	0.13		0.16	0.19		c0.17	0.27		0.00	0.19	
v/s Ratio Perm	c0.22		0.01				c0.26			0.03		
v/c Ratio	1.01	0.60	0.05	0.88	0.98		0.95	0.72		0.12	0.86	
Uniform Delay, d1	35.2	42.5	37.6	47.5	48.3		34.1	31.9		36.0	45.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	47.0	2.4	0.0	13.7	43.3		32.6	3.5		0.4	12.2	
Delay (s)	82.2	45.0	37.6	61.3	91.6		66.8	35.4		36.4	57.5	
Level of Service	F	D	D	E	F		E	D		D	E	
Approach Delay (s)		63.5			72.9			43.9			57.0	
Approach LOS		E			E			D			E	

Intersection Summary

HCM 2000 Control Delay	57.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

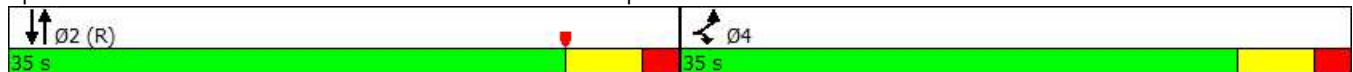
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	513	551	1601	1352
Future Volume (vph)	513	551	1601	1352
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	35.0	35.0	35.0	35.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	24.8	24.8	37.2	37.2
Actuated g/C Ratio	0.35	0.35	0.53	0.53
v/c Ratio	0.66	0.70	0.51	0.54
Control Delay	21.0	25.7	12.1	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.0	25.7	12.1	11.0
LOS	C	C	B	B
Approach Delay	22.5		12.1	11.0
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 37 (53%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 14.5
 Intersection Capacity Utilization 65.1%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp



Queues

1: Cedar Bluff Road & I-40/75 EB Off-Ramp

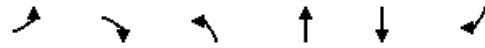


Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	792	365	1740	1470
v/c Ratio	0.66	0.70	0.51	0.54
Control Delay	21.0	25.7	12.1	11.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.0	25.7	12.1	11.0
Queue Length 50th (ft)	141	138	131	171
Queue Length 95th (ft)	169	205	195	236
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1499	650	3407	2717
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.53	0.56	0.51	0.54

Intersection Summary

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶↶	↷		↑↑↑	↑↑↑	
Traffic Volume (vph)	513	551	0	1601	1352	0
Future Volume (vph)	513	551	0	1601	1352	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.96	0.85		1.00	1.00	
Fl _t Protected	0.97	1.00		1.00	1.00	
Satd. Flow (prot)	3369	1455		6408	5111	
Fl _t Permitted	0.97	1.00		1.00	1.00	
Satd. Flow (perm)	3369	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	558	599	0	1740	1470	0
RTOR Reduction (vph)	7	7	0	0	0	0
Lane Group Flow (vph)	785	358	0	1740	1470	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	22.8	22.8		35.2	35.2	
Effective Green, g (s)	24.8	24.8		37.2	37.2	
Actuated g/C Ratio	0.35	0.35		0.53	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1193	515		3405	2716	
v/s Ratio Prot	0.23	c0.25		0.27	c0.29	
v/s Ratio Perm						
v/c Ratio	0.66	0.69		0.51	0.54	
Uniform Delay, d ₁	19.0	19.4		10.5	10.8	
Progression Factor	1.00	1.00		1.00	0.89	
Incremental Delay, d ₂	1.0	3.3		0.6	0.7	
Delay (s)	20.0	22.6		11.1	10.3	
Level of Service	C	C		B	B	
Approach Delay (s)	20.9			11.1	10.3	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected Midday Peak w MOB
Parkwest Medical Center

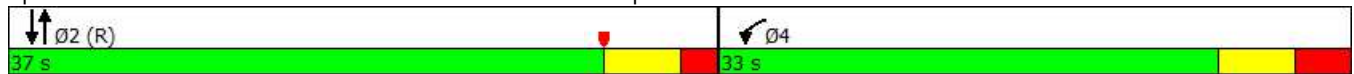
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	975	2113	688
Future Volume (vph)	975	2113	688
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	33.0	37.0	37.0
Total Split (%)	47.1%	52.9%	52.9%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	27.2	34.8	34.8
Actuated g/C Ratio	0.39	0.50	0.50
v/c Ratio	0.77	0.69	0.30
Control Delay	23.0	9.9	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	23.0	9.9	5.4
LOS	C	A	A
Approach Delay	23.0	9.9	5.4
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 40 (57%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 45
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 12.5
 Intersection Capacity Utilization 65.1%
 Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service C

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp



Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected Midday Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1060	2297	748
v/c Ratio	0.77	0.69	0.30
Control Delay	23.0	9.9	5.4
Queue Delay	0.0	0.0	0.0
Total Delay	23.0	9.9	5.4
Queue Length 50th (ft)	191	99	38
Queue Length 95th (ft)	258	109	51
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1462	3310	2504
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	83	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.73	0.71	0.30
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected Midday Peak w MOB
Parkwest Medical Center



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔↔		↑↑↑			↑↑↑
Traffic Volume (vph)	975	0	2113	0	0	688
Future Volume (vph)	975	0	2113	0	0	688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1060	0	2297	0	0	748
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1060	0	2297	0	0	748
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	24.2		32.8			32.8
Effective Green, g (s)	27.2		34.8			34.8
Actuated g/C Ratio	0.39		0.50			0.50
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1371		3308			2502
v/s Ratio Prot	c0.30		c0.35			0.15
v/s Ratio Perm						
v/c Ratio	0.77		0.69			0.30
Uniform Delay, d1	18.7		13.5			10.4
Progression Factor	1.00		0.63			0.48
Incremental Delay, d2	2.5		1.1			0.3
Delay (s)	21.2		9.6			5.3
Level of Service	C		A			A
Approach Delay (s)	21.2		9.6			5.3
Approach LOS	C		A			A

Intersection Summary

HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

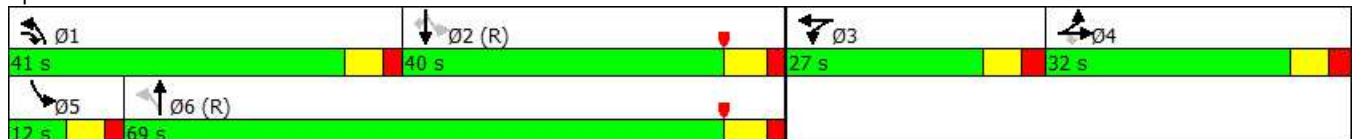
2030 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	101	54	362	143	278	415	902	56	616	61
Future Volume (vph)	101	54	362	143	278	415	902	56	616	61
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	32.0	32.0	41.0	27.0	27.0	41.0	69.0	12.0	40.0	40.0
Total Split (%)	22.9%	22.9%	29.3%	19.3%	19.3%	29.3%	49.3%	8.6%	28.6%	28.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	26.0	26.0	62.2	22.4	22.4	80.1	70.4	53.6	43.5	43.5
Actuated g/C Ratio	0.19	0.19	0.44	0.16	0.16	0.57	0.50	0.38	0.31	0.31
v/c Ratio	0.34	0.79	0.33	0.54	0.83	0.84	0.43	0.24	0.60	0.11
Control Delay	52.0	73.5	25.3	62.4	64.5	51.0	15.8	19.8	37.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	8.0	0.2	0.0	0.0	0.0
Total Delay	52.0	73.5	25.3	62.4	64.5	59.0	16.0	19.8	37.2	0.5
LOS	D	E	C	E	E	E	B	B	D	A
Approach Delay		50.4			64.0		28.6		32.8	
Approach LOS		D			E		C		C	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 107 (76%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 39.2
 Intersection Capacity Utilization 74.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service D

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	110	232	220	139	473	451	1091	61	670	66
v/c Ratio	0.34	0.79	0.33	0.54	0.83	0.84	0.43	0.24	0.60	0.11
Control Delay	52.0	73.5	25.3	62.4	64.5	51.0	15.8	19.8	37.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	8.0	0.2	0.0	0.0	0.0
Total Delay	52.0	73.5	25.3	62.4	64.5	59.0	16.0	19.8	37.2	0.5
Queue Length 50th (ft)	85	208	122	128	209	381	213	23	306	0
Queue Length 95th (ft)	m144	#314	182	207	#280	492	265	m25	338	m1
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	349	321	718	265	586	581	2529	259	1121	619
Starvation Cap Reductn	0	0	0	0	0	97	578	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.72	0.31	0.52	0.81	0.93	0.56	0.24	0.60	0.11

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	54	362	143	278	143	415	902	102	56	616	61
Future Volume (vph)	101	54	362	143	278	143	415	902	102	56	616	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1580	1512	1618	3342		1770	5008		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.20	1.00		0.25	1.00	1.00
Satd. Flow (perm)	1719	1580	1512	1618	3342		370	5008		458	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	59	393	155	302	155	451	980	111	61	670	66
RTOR Reduction (vph)	0	0	0	0	38	0	0	9	0	0	0	45
Lane Group Flow (vph)	110	232	220	139	435	0	451	1082	0	61	670	21
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	23.0	23.0	53.6	19.9	19.9		77.6	66.7		45.9	41.0	41.0
Effective Green, g (s)	26.0	26.0	57.6	22.4	22.4		79.6	69.2		51.9	43.5	43.5
Actuated g/C Ratio	0.19	0.19	0.41	0.16	0.16		0.57	0.49		0.37	0.31	0.31
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	319	293	622	258	534		536	2475		242	1121	501
v/s Ratio Prot	0.06	c0.15	0.08	0.09	c0.13		c0.20	0.22		0.01	0.19	
v/s Ratio Perm			0.06				c0.28			0.08		0.01
v/c Ratio	0.34	0.79	0.35	0.54	0.81		0.84	0.44		0.25	0.60	0.04
Uniform Delay, d1	49.6	54.4	28.4	54.1	56.8		27.1	22.8		28.7	40.8	33.7
Progression Factor	1.00	1.00	0.99	1.00	1.00		1.62	0.67		1.00	0.82	1.00
Incremental Delay, d2	0.5	13.2	0.3	1.7	9.1		8.3	0.4		0.3	1.9	0.1
Delay (s)	50.1	67.4	28.4	55.7	65.9		52.4	15.8		28.9	35.3	33.8
Level of Service	D	E	C	E	E		D	B		C	D	C
Approach Delay (s)		48.7			63.6			26.5			34.7	
Approach LOS		D			E			C			C	

Intersection Summary

HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

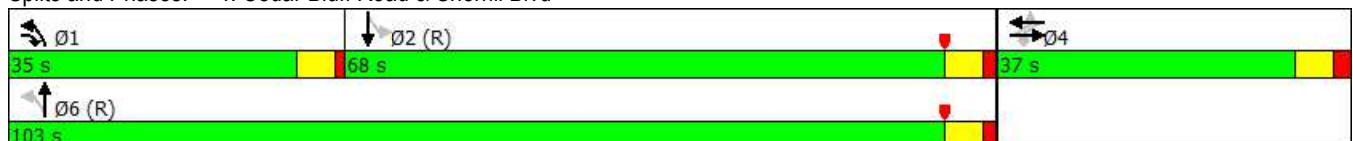
2030 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	179	18	305	105	9	322	1005	22	1116
Future Volume (vph)	179	18	305	105	9	322	1005	22	1116
Turn Type	Perm	NA	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		4	1		4	1	6		2
Permitted Phases	4		4	4		6		2	
Detector Phase	4	4	1	4	4	1	6	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	37.0	37.0	35.0	37.0	37.0	35.0	103.0	68.0	68.0
Total Split (%)	26.4%	26.4%	25.0%	26.4%	26.4%	25.0%	73.6%	48.6%	48.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag			Lead			Lead		Lag	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	28.4	28.4	57.9		28.4	105.1	104.6	75.6	75.6
Actuated g/C Ratio	0.20	0.20	0.41		0.20	0.75	0.75	0.54	0.54
v/c Ratio	0.80	0.05	0.47		0.28	0.74	0.43	0.10	0.67
Control Delay	75.3	42.5	27.8		42.4	34.6	6.1	21.5	27.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	42.5	27.8		42.4	34.6	6.1	21.5	27.4
LOS	E	D	C		D	C	A	C	C
Approach Delay		45.3			42.4		12.8		27.3
Approach LOS		D			D		B		C

Intersection Summary

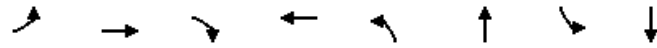
Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 88 (63%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 24.6
 Intersection Capacity Utilization 78.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected Midday Peak w MOB
Parkwest Medical Center
























Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	20	332	148	350	1140	24	1313
v/c Ratio	0.80	0.05	0.47	0.28	0.74	0.43	0.10	0.67
Control Delay	75.3	42.5	27.8	42.4	34.6	6.1	21.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	42.5	27.8	42.4	34.6	6.1	21.5	27.4
Queue Length 50th (ft)	168	15	192	53	220	202	11	455
Queue Length 95th (ft)	254	37	247	84	m322	221	33	615
Internal Link Dist (ft)		1062		642		919		1139
Turn Bay Length (ft)	90				75		85	
Base Capacity (vph)	289	465	772	610	544	2655	249	1947
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.04	0.43	0.24	0.64	0.43	0.10	0.67

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	18	305	105	9	22	322	1005	44	22	1116	92
Future Volume (vph)	179	18	305	105	9	22	322	1005	44	22	1116	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%				1%
Total Lost time (s)	3.5	3.5	3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00	1.00	1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	1947	1655		3196		1906	3552		1761	3597	
Flt Permitted	0.62	1.00	1.00		0.75		0.10	1.00		0.25	1.00	
Satd. Flow (perm)	1211	1947	1655		2502		209	3552		462	3597	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	20	332	114	10	24	350	1092	48	24	1213	100
RTOR Reduction (vph)	0	0	19	0	12	0	0	2	0	0	4	0
Lane Group Flow (vph)	195	20	313	0	136	0	350	1138	0	24	1309	0
Turn Type	Perm	NA	pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6			2	
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	25.9	25.9	49.8		25.9		102.6	102.6		73.7	73.7	
Effective Green, g (s)	28.4	28.4	53.8		28.4		104.6	104.6		75.7	75.7	
Actuated g/C Ratio	0.20	0.20	0.38		0.20		0.75	0.75		0.54	0.54	
Clearance Time (s)	6.0	6.0	5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0	3.0	2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	245	394	635		507		470	2653		249	1944	
v/s Ratio Prot		0.01	0.09				c0.14	0.32			0.36	
v/s Ratio Perm	c0.16		0.10		0.05		c0.42			0.05		
v/c Ratio	0.80	0.05	0.49		0.27		0.74	0.43		0.10	0.67	
Uniform Delay, d1	53.0	44.9	32.7		47.0		31.7	6.6		15.6	23.2	
Progression Factor	1.00	1.00	1.00		1.00		1.02	0.79		1.00	1.00	
Incremental Delay, d2	16.2	0.1	0.4		0.3		5.6	0.5		0.8	1.9	
Delay (s)	69.3	45.0	33.2		47.3		37.9	5.7		16.3	25.1	
Level of Service	E	D	C		D		D	A		B	C	
Approach Delay (s)		46.5			47.3			13.2			25.0	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			24.3				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			78.2%				ICU Level of Service			D		
Analysis Period (min)			15									

c Critical Lane Group

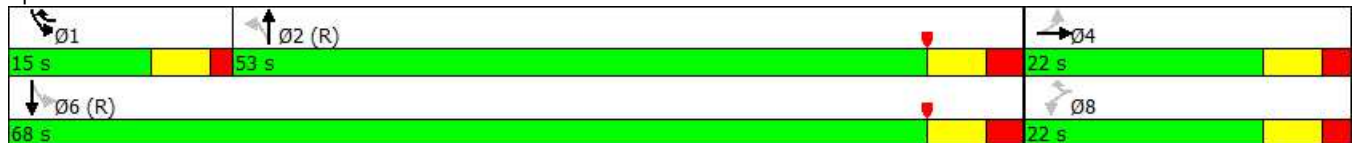
Timings
5: Cedar Bluff Road & Fox Lonas Rd

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↗	
Traffic Volume (vph)	98	47	811	102	1079	
Future Volume (vph)	98	47	811	102	1079	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	8.0	6.0	20.0	6.0	20.0	8.0
Minimum Split (s)	20.0	11.5	26.5	11.5	26.5	20.0
Total Split (s)	22.0	15.0	53.0	15.0	68.0	22.0
Total Split (%)	24.4%	16.7%	58.9%	16.7%	75.6%	24%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	12.3	22.7	58.9	69.0	69.3	
Actuated g/C Ratio	0.14	0.25	0.65	0.77	0.77	
v/c Ratio	0.56	0.12	0.47	0.28	0.43	
Control Delay	46.7	6.8	6.7	5.6	5.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.7	6.8	6.7	5.6	5.7	
LOS	D	A	A	A	A	
Approach Delay			6.7		5.7	
Approach LOS			A		A	

Intersection Summary






Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 35 (39%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 7.9
 Intersection Capacity Utilization 66.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd
























Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	107	51	1056	111	1173
v/c Ratio	0.56	0.12	0.47	0.28	0.43
Control Delay	46.7	6.8	6.7	5.6	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	46.7	6.8	6.7	5.6	5.7
Queue Length 50th (ft)	58	0	92	14	120
Queue Length 95th (ft)	105	23	77	35	195
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	254	476	2275	438	2721
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.42	0.11	0.46	0.25	0.43
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	98	0	47	0	811	160	102	1079	0
Future Volume (vph)	0	0	0	98	0	47	0	811	160	102	1079	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.98		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3452		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.21	1.00	
Satd. Flow (perm)				1410		1583		3452		383	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	107	0	51	0	882	174	111	1173	0
RTOR Reduction (vph)	0	0	0	0	0	42	0	15	0	0	0	0
Lane Group Flow (vph)	0	0	0	107	0	9	0	1041	0	111	1173	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				10.7		16.7		55.3		66.8	66.8	
Effective Green, g (s)				10.7		16.7		55.3		66.8	66.8	
Actuated g/C Ratio				0.12		0.19		0.61		0.74	0.74	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				167		293		2121		376	2614	
v/s Ratio Prot						0.00		c0.30		0.02	c0.33	
v/s Ratio Perm				c0.08		0.00				0.20		
v/c Ratio				0.64		0.03		0.49		0.30	0.45	
Uniform Delay, d ₁				37.8		30.0		9.6		4.7	4.5	
Progression Factor				1.00		1.00		0.56		1.00	1.00	
Incremental Delay, d ₂				8.1		0.0		0.8		0.4	0.6	
Delay (s)				45.9		30.1		6.2		5.1	5.0	
Level of Service				D		C		A		A	A	
Approach Delay (s)		0.0			40.8			6.2			5.1	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			7.8									A
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			90.0						18.0			
Intersection Capacity Utilization			66.1%									C
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	99	47	69	58	91	176	701	22	1069
Future Volume (vph)	99	47	69	58	91	176	701	22	1069
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.5	12.0	26.5
Total Split (s)	12.0	14.0	16.0	12.0	14.0	16.0	52.0	12.0	48.0
Total Split (%)	13.3%	15.6%	17.8%	13.3%	15.6%	17.8%	57.8%	13.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	12.1	8.0	20.3	15.2	8.2	58.4	53.9	50.1	43.6
Actuated g/C Ratio	0.13	0.09	0.23	0.17	0.09	0.65	0.60	0.56	0.48
v/c Ratio	0.51	0.31	0.17	0.25	0.65	0.70	0.39	0.06	0.74
Control Delay	40.6	43.8	2.8	30.7	56.5	29.6	11.5	5.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	43.8	2.8	30.7	56.5	29.6	11.5	5.3	19.5
LOS	D	D	A	C	E	C	B	A	B
Approach Delay		29.2			47.1		14.9		19.2
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 16 (18%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 20.2
 Intersection Capacity Utilization 69.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	108	51	75	63	111	191	822	24	1255
v/c Ratio	0.51	0.31	0.17	0.25	0.65	0.70	0.39	0.06	0.74
Control Delay	40.6	43.8	2.8	30.7	56.5	29.6	11.5	5.3	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	43.8	2.8	30.7	56.5	29.6	11.5	5.3	19.5
Queue Length 50th (ft)	50	28	0	28	59	49	108	2	325
Queue Length 95th (ft)	97	63	14	63	#136	#138	196	m7	133
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	210	165	460	248	172	288	2101	427	1731
Starvation Cap Reductn	0	0	0	0	0	0	0	0	3
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.31	0.16	0.25	0.65	0.66	0.39	0.06	0.73

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

























HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	47	69	58	91	11	176	701	55	22	1069	86
Future Volume (vph)	99	47	69	58	91	11	176	701	55	22	1069	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1833		1770	3500		1761	3482	
Flt Permitted	0.69	1.00	1.00	0.49	1.00		0.09	1.00		0.34	1.00	
Satd. Flow (perm)	1277	1863	1583	908	1833		170	3500		632	3482	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	51	75	63	99	12	191	762	60	24	1162	93
RTOR Reduction (vph)	0	0	62	0	4	0	0	6	0	0	7	0
Lane Group Flow (vph)	108	51	13	63	107	0	191	816	0	24	1248	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	12.1	6.4	15.5	18.3	9.5		56.3	47.9		43.6	41.2	
Effective Green, g (s)	12.1	6.4	15.5	18.3	9.5		56.3	47.9		43.6	41.2	
Actuated g/C Ratio	0.13	0.07	0.17	0.20	0.11		0.63	0.53		0.48	0.46	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	202	132	378	268	193		268	1862		336	1593	
v/s Ratio Prot	c0.03	0.03	0.00	0.02	c0.06		c0.07	0.23		0.00	c0.36	
v/s Ratio Perm	0.04		0.00	0.02			0.37			0.03		
v/c Ratio	0.53	0.39	0.03	0.24	0.55		0.71	0.44		0.07	0.78	
Uniform Delay, d1	35.9	39.9	31.0	29.7	38.2		17.1	12.8		12.1	20.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.76	0.84	
Incremental Delay, d2	2.7	1.9	0.0	0.5	3.4		8.7	0.8		0.1	3.6	
Delay (s)	38.6	41.8	31.1	30.1	41.6		25.7	13.6		9.3	21.0	
Level of Service	D	D	C	C	D		C	B		A	C	
Approach Delay (s)		36.9			37.5			15.9			20.8	
Approach LOS		D			D			B			C	
Intersection Summary												
HCM 2000 Control Delay			21.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		24.5			
Intersection Capacity Utilization			69.6%				ICU Level of Service		C			
Analysis Period (min)			15									
c Critical Lane Group												












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	35	348	23	40	351	64	10	28	32	131	84	23	
Future Volume (Veh/h)	35	348	23	40	351	64	10	28	32	131	84	23	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	38	378	25	43	382	70	11	30	35	142	91	25	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	452			403			814	1004	202	818	982	226	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	452			403			814	1004	202	818	982	226	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	97			96			94	87	96	35	60	97	
cM capacity (veh/h)	1105			1152			172	223	806	218	230	777	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	38	252	151	234	261	41	35	142	116				
Volume Left	38	0	0	43	0	11	0	142	0				
Volume Right	0	0	25	0	70	0	35	0	25				
cSH	1105	1700	1700	1152	1700	207	806	218	271				
Volume to Capacity	0.03	0.15	0.09	0.04	0.15	0.20	0.04	0.65	0.43				
Queue Length 95th (ft)	3	0	0	3	0	18	3	99	51				
Control Delay (s)	8.4	0.0	0.0	1.8	0.0	26.7	9.7	48.1	27.8				
Lane LOS	A			A		D	A	E	D				
Approach Delay (s)	0.7			0.9		18.9		39.0					
Approach LOS						C		E					
Intersection Summary													
Average Delay	9.6												
Intersection Capacity Utilization	47.2%			ICU Level of Service					A				
Analysis Period (min)	15												

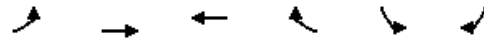
HCM Unsignalized Intersection Capacity Analysis
 8: Sherrill Blvd & Park West Blvd

2030 Projected Midday Peak w MOB
 Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	25	14	286	91	22	229	
Future Volume (Veh/h)	25	14	286	91	22	229	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	27	15	311	99	24	249	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type	None			None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	533	205			410		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	533	205			410		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	94	98			98		
cM capacity (veh/h)	467	802			1145		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	27	15	207	203	24	124	124
Volume Left	27	0	0	0	24	0	0
Volume Right	0	15	0	99	0	0	0
cSH	467	802	1700	1700	1145	1700	1700
Volume to Capacity	0.06	0.02	0.12	0.12	0.02	0.07	0.07
Queue Length 95th (ft)	5	1	0	0	2	0	0
Control Delay (s)	13.2	9.6	0.0	0.0	8.2	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.9		0.0		0.7		
Approach LOS	B						
Intersection Summary							
Average Delay			1.0				
Intersection Capacity Utilization			27.5%	ICU Level of Service	A		
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Projected Midday Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕	↕
Traffic Volume (veh/h)	0	563	436	0	224	4
Future Volume (Veh/h)	0	563	436	0	224	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	612	474	0	243	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	474				780	237
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	474				780	237
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				27	99
cM capacity (veh/h)	1084				332	764
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	204	408	316	158	243	4
Volume Left	0	0	0	0	243	0
Volume Right	0	0	0	0	0	4
cSH	1084	1700	1700	1700	332	764
Volume to Capacity	0.00	0.24	0.19	0.09	0.73	0.01
Queue Length 95th (ft)	0	0	0	0	137	0
Control Delay (s)	0.0	0.0	0.0	0.0	40.4	9.7
Lane LOS					E	A
Approach Delay (s)	0.0		0.0		39.9	
Approach LOS					E	
Intersection Summary						
Average Delay			7.4			
Intersection Capacity Utilization			34.6%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

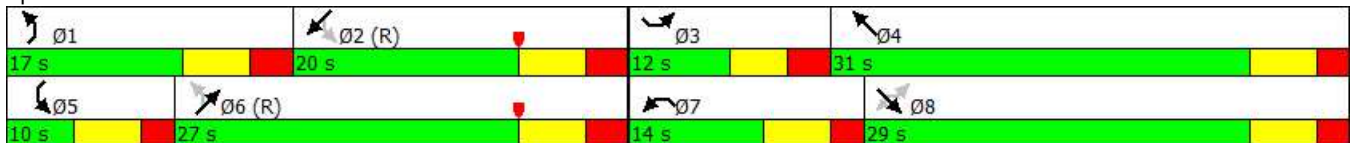
2030 Projected Midday Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	94	259	196	156	303	170	208	39	82
Future Volume (vph)	94	259	196	156	303	170	208	39	82
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.0	14.0	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	12.0	29.0	29.0	14.0	31.0	17.0	27.0	10.0	20.0
Total Split (%)	15.0%	36.3%	36.3%	17.5%	38.8%	21.3%	33.8%	12.5%	25.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	23.7	17.7	17.7	7.8	21.9	35.7	29.1	25.7	19.6
Actuated g/C Ratio	0.30	0.22	0.22	0.10	0.27	0.45	0.36	0.32	0.24
v/c Ratio	0.34	0.68	0.25	0.51	0.69	0.38	0.31	0.12	0.25
Control Delay	17.9	36.8	1.5	40.0	33.6	17.5	12.6	16.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	36.8	1.5	40.0	33.6	17.5	12.6	16.0	12.8
LOS	B	D	A	D	C	B	B	B	B
Approach Delay		20.9			35.7		14.1		13.3
Approach LOS		C			D		B		B

Intersection Summary










Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 21.7
 Intersection Capacity Utilization 60.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected Midday Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	102	282	213	170	350	185	411	42	222
v/c Ratio	0.34	0.68	0.25	0.51	0.69	0.38	0.31	0.12	0.25
Control Delay	17.9	36.8	1.5	40.0	33.6	17.5	12.6	16.0	12.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.9	36.8	1.5	40.0	33.6	17.5	12.6	16.0	12.8
Queue Length 50th (ft)	32	129	0	42	160	55	45	11	18
Queue Length 95th (ft)	55	192	7	72	231	110	86	33	50
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	299	535	1015	343	579	503	1317	362	888
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.53	0.21	0.50	0.60	0.37	0.31	0.12	0.25
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected Midday Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	94	259	196	156	303	19	170	208	170	39	82	122
Future Volume (vph)	94	259	196	156	303	19	170	208	170	39	82	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1846		1770	3300		1770	3221	
Flt Permitted	0.40	1.00	1.00	0.95	1.00		0.45	1.00		0.51	1.00	
Satd. Flow (perm)	754	1863	2787	3433	1846		844	3300		952	3221	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	282	213	170	329	21	185	226	185	42	89	133
RTOR Reduction (vph)	0	0	163	0	3	0	0	126	0	0	102	0
Lane Group Flow (vph)	102	282	50	170	347	0	185	285	0	42	120	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	23.7	18.9	18.9	7.8	21.9		34.8	25.5		21.7	18.4	
Effective Green, g (s)	23.7	18.9	18.9	7.8	21.9		34.8	25.5		21.7	18.4	
Actuated g/C Ratio	0.30	0.24	0.24	0.10	0.27		0.43	0.32		0.27	0.23	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	284	440	658	334	505		481	1051		291	740	
v/s Ratio Prot	0.02	0.15		c0.05	c0.19		c0.05	0.09		0.01	0.04	
v/s Ratio Perm	0.08		0.02				c0.12			0.03		
v/c Ratio	0.36	0.64	0.08	0.51	0.69		0.38	0.27		0.14	0.16	
Uniform Delay, d1	21.2	27.5	23.8	34.3	26.0		14.6	20.3		21.8	24.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	3.2	0.0	1.2	3.9		0.5	0.6		0.2	0.5	
Delay (s)	22.0	30.7	23.8	35.5	29.9		15.1	21.0		22.0	25.1	
Level of Service	C	C	C	D	C		B	C		C	C	
Approach Delay (s)		26.7			31.7			19.1			24.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	60.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

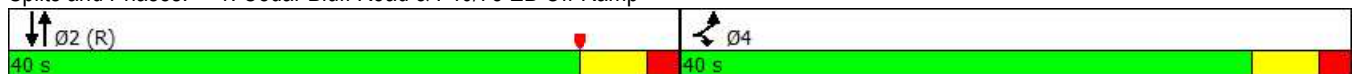
	↖	↘	↑	↓
Lane Group	EBL	EBR	NBT	SBT
Lane Configurations	↖↖	↗	↑↑↑	↓↓↓
Traffic Volume (vph)	602	438	1395	1255
Future Volume (vph)	602	438	1395	1255
Turn Type	Prot	Prot	NA	NA
Protected Phases	4	4	2	2
Permitted Phases				
Detector Phase	4	4	2	2
Switch Phase				
Minimum Initial (s)	6.0	6.0	15.0	15.0
Minimum Split (s)	15.0	15.0	24.0	24.0
Total Split (s)	40.0	40.0	40.0	40.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0	4.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	C-Max	C-Max
Act Effct Green (s)	27.1	27.1	44.9	44.9
Actuated g/C Ratio	0.34	0.34	0.56	0.56
v/c Ratio	0.67	0.70	0.42	0.48
Control Delay	24.3	28.7	11.5	10.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.3	28.7	11.5	10.3
LOS	C	C	B	B
Approach Delay	25.7		11.5	10.3
Approach LOS	C		B	B

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 48 (60%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15





Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Cedar Bluff Road & I-40/75 EB Off-Ramp













Queues
1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected School PM Peak w MOB
Parkwest Medical Center

				
Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	778	352	1516	1364
v/c Ratio	0.67	0.70	0.42	0.48
Control Delay	24.3	28.7	11.5	10.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	24.3	28.7	11.5	10.3
Queue Length 50th (ft)	164	157	116	134
Queue Length 95th (ft)	184	217	182	188
Internal Link Dist (ft)	2155		702	442
Turn Bay Length (ft)	435			
Base Capacity (vph)	1548	664	3596	2868
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.50	0.53	0.42	0.48
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
 1: Cedar Bluff Road & I-40/75 EB Off-Ramp

2030 Projected School PM Peak w MOB
 Parkwest Medical Center

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	602	438	0	1395	1255	0
Future Volume (vph)	602	438	0	1395	1255	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	-2%			0%	-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	0.97	0.91		0.86	0.91	
Fr _t	0.98	0.85		1.00	1.00	
Fl _t Protected	0.96	1.00		1.00	1.00	
Satd. Flow (prot)	3419	1455		6408	5111	
Fl _t Permitted	0.96	1.00		1.00	1.00	
Satd. Flow (perm)	3419	1455		6408	5111	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	654	476	0	1516	1364	0
RTOR Reduction (vph)	11	11	0	0	0	0
Lane Group Flow (vph)	767	341	0	1516	1364	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	25.1	25.1		42.9	42.9	
Effective Green, g (s)	27.1	27.1		44.9	44.9	
Actuated g/C Ratio	0.34	0.34		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	1158	492		3596	2868	
v/s Ratio Prot	0.22	c0.23		0.24	c0.27	
v/s Ratio Perm						
v/c Ratio	0.66	0.69		0.42	0.48	
Uniform Delay, d ₁	22.5	22.9		10.1	10.5	
Progression Factor	1.00	1.00		1.00	0.86	
Incremental Delay, d ₂	1.1	3.4		0.4	0.5	
Delay (s)	23.7	26.2		10.5	9.5	
Level of Service	C	C		B	A	
Approach Delay (s)	24.5			10.5	9.5	
Approach LOS	C			B	A	
Intersection Summary						
HCM 2000 Control Delay			14.1		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Timings
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected School PM Peak w MOB
Parkwest Medical Center

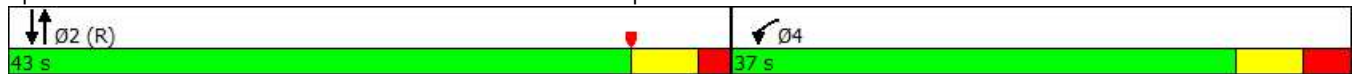
	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Configurations	↙↙	↑↑↑	↑↑↑
Traffic Volume (vph)	851	1997	954
Future Volume (vph)	851	1997	954
Turn Type	Prot	NA	NA
Protected Phases	4	2	2
Permitted Phases			
Detector Phase	4	2	2
Switch Phase			
Minimum Initial (s)	6.0	15.0	15.0
Minimum Split (s)	15.0	24.0	24.0
Total Split (s)	37.0	43.0	43.0
Total Split (%)	46.3%	53.8%	53.8%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	3.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-2.0	-2.0
Total Lost Time (s)	4.0	4.0	4.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	28.6	43.4	43.4
Actuated g/C Ratio	0.36	0.54	0.54
v/c Ratio	0.73	0.60	0.38
Control Delay	25.8	10.4	8.0
Queue Delay	0.0	0.0	0.0
Total Delay	25.8	10.4	8.0
LOS	C	B	A
Approach Delay	25.8	10.4	8.0
Approach LOS	C	B	A

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 49 (61%), Referenced to phase 2:NBSB, Start of Yellow
 Natural Cycle: 40
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 13.3
 Intersection Capacity Utilization 59.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: Cedar Bluff Road & I-40/75 WB Off-Ramp












Queues
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected School PM Peak w MOB
Parkwest Medical Center

	↙	↑	↓
Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	925	2171	1037
v/c Ratio	0.73	0.60	0.38
Control Delay	25.8	10.4	8.0
Queue Delay	0.0	0.0	0.0
Total Delay	25.8	10.4	8.0
Queue Length 50th (ft)	201	129	86
Queue Length 95th (ft)	245	141	88
Internal Link Dist (ft)	2153	442	52
Turn Bay Length (ft)			
Base Capacity (vph)	1456	3608	2729
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.64	0.60	0.38
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
2: Cedar Bluff Road & I-40/75 WB Off-Ramp

2030 Projected School PM Peak w MOB
Parkwest Medical Center

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	851	0	1997	0	0	954
Future Volume (vph)	851	0	1997	0	0	954
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	13	12	13	12	12	12
Grade (%)	1%		-1%			2%
Total Lost time (s)	4.0		4.0			4.0
Lane Util. Factor	0.97		0.86			0.91
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	3530		6655			5034
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	3530		6655			5034
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	925	0	2171	0	0	1037
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	925	0	2171	0	0	1037
Turn Type	Prot		NA			NA
Protected Phases	4		2			2
Permitted Phases						
Actuated Green, G (s)	25.6		41.4			41.4
Effective Green, g (s)	28.6		43.4			43.4
Actuated g/C Ratio	0.36		0.54			0.54
Clearance Time (s)	7.0		6.0			6.0
Vehicle Extension (s)	2.0		2.0			2.0
Lane Grp Cap (vph)	1261		3610			2730
v/s Ratio Prot	c0.26		c0.33			0.21
v/s Ratio Perm						
v/c Ratio	0.73		0.60			0.38
Uniform Delay, d1	22.4		12.4			10.5
Progression Factor	1.00		0.74			0.70
Incremental Delay, d2	1.9		0.7			0.3
Delay (s)	24.3		9.9			7.6
Level of Service	C		A			A
Approach Delay (s)	24.3		9.9			7.6
Approach LOS	C		A			A
Intersection Summary						
HCM 2000 Control Delay			12.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.65			
Actuated Cycle Length (s)			80.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

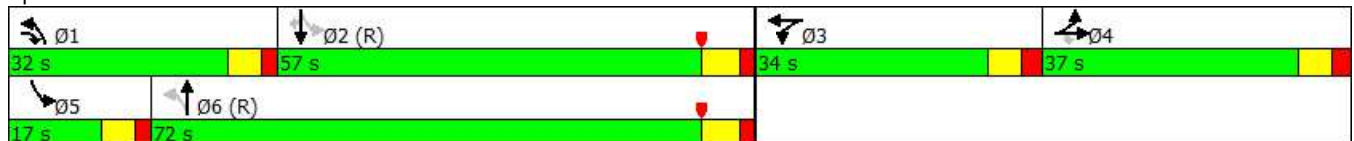
2030 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	134	24	384	214	214	241	817	43	887	37
Future Volume (vph)	134	24	384	214	214	241	817	43	887	37
Turn Type	Split	NA	pm+ov	Split	NA	pm+pt	NA	pm+pt	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4			6		2		2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	17.0	17.0	17.0	16.0	16.0	17.0	25.0	17.0	25.0	25.0
Total Split (s)	37.0	37.0	32.0	34.0	34.0	32.0	72.0	17.0	57.0	57.0
Total Split (%)	23.1%	23.1%	20.0%	21.3%	21.3%	20.0%	45.0%	10.6%	35.6%	35.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.2	29.2	56.4	26.4	26.4	92.9	82.2	76.3	65.2	65.2
Actuated g/C Ratio	0.18	0.18	0.35	0.16	0.16	0.58	0.51	0.48	0.41	0.41
v/c Ratio	0.47	0.79	0.41	0.79	0.75	0.71	0.39	0.15	0.66	0.05
Control Delay	62.6	81.8	40.4	84.6	54.7	47.3	16.8	15.5	34.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.1	0.2	0.0	0.0	0.0
Total Delay	62.6	81.8	40.4	84.6	54.7	48.3	17.0	15.5	34.1	0.1
LOS	E	F	D	F	D	D	B	B	C	A
Approach Delay		61.5			63.8		23.5		32.0	
Approach LOS		E			E		C		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 46 (29%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 39.9
 Intersection Capacity Utilization 72.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	222	221	210	479	262	1008	47	964	40
v/c Ratio	0.47	0.79	0.41	0.79	0.75	0.71	0.39	0.15	0.66	0.05
Control Delay	62.6	81.8	40.4	84.6	54.7	47.3	16.8	15.5	34.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.1	0.2	0.0	0.0	0.0
Total Delay	62.6	81.8	40.4	84.6	54.7	48.3	17.0	15.5	34.1	0.1
Queue Length 50th (ft)	137	233	180	231	198	224	220	18	465	0
Queue Length 95th (ft)	207	333	246	336	263	338	247	m34	448	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	359	323	573	303	711	412	2574	358	1471	747
Starvation Cap Reductn	0	0	0	0	0	39	651	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.69	0.39	0.69	0.67	0.70	0.52	0.13	0.66	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	24	384	214	214	205	241	817	110	43	887	37
Future Volume (vph)	134	24	384	214	214	205	241	817	110	43	887	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		1.00	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1543	1512	1618	3267		1770	4994		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.14	1.00		0.27	1.00	1.00
Satd. Flow (perm)	1719	1543	1512	1618	3267		254	4994		495	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	26	417	233	233	223	262	888	120	47	964	40
RTOR Reduction (vph)	0	0	0	0	101	0	0	9	0	0	0	24
Lane Group Flow (vph)	146	222	221	210	378	0	262	999	0	47	964	16
Turn Type	Split	NA	pm+ov	Split	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4				6			2		2
Actuated Green, G (s)	26.2	26.2	47.9	23.9	23.9		90.4	78.5		68.6	62.7	62.7
Effective Green, g (s)	29.2	29.2	51.9	26.4	26.4		92.4	81.0		74.6	65.2	65.2
Actuated g/C Ratio	0.18	0.18	0.32	0.16	0.16		0.58	0.51		0.47	0.41	0.41
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	313	281	490	266	539		371	2528		300	1471	658
v/s Ratio Prot	0.08	c0.14	0.07	c0.13	0.12		c0.10	0.20		0.01	0.27	
v/s Ratio Perm			0.08				c0.30			0.06		0.01
v/c Ratio	0.47	0.79	0.45	0.79	0.70		0.71	0.40		0.16	0.66	0.02
Uniform Delay, d1	58.4	62.5	42.8	64.1	63.1		26.1	24.4		23.4	38.3	28.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.63	0.65		0.82	0.78	1.00
Incremental Delay, d2	0.8	13.6	0.5	13.9	3.8		4.5	0.4		0.2	2.0	0.1
Delay (s)	59.2	76.0	43.3	78.0	66.9		46.9	16.3		19.3	31.9	28.4
Level of Service	E	E	D	E	E		D	B		B	C	C
Approach Delay (s)		59.6			70.3			22.6			31.2	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			40.3			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			160.0	Sum of lost time (s)			15.5					
Intersection Capacity Utilization			72.8%	ICU Level of Service			C					
Analysis Period (min)			15									

c Critical Lane Group

Timings
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	191	69	0	223	809	15	1257
Future Volume (vph)	119	191	69	0	223	809	15	1257
Turn Type	Perm	pm+ov	Perm	NA	pm+pt	NA	Perm	NA
Protected Phases		1		4	1	6		2
Permitted Phases	4	4	4		6		2	
Detector Phase	4	1	4	4	1	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	6.0	8.0	8.0	6.0	20.0	20.0	20.0
Minimum Split (s)	14.0	11.0	14.0	14.0	11.0	25.5	25.5	25.5
Total Split (s)	33.0	32.0	33.0	33.0	32.0	127.0	95.0	95.0
Total Split (%)	20.6%	20.0%	20.6%	20.6%	20.0%	79.4%	59.4%	59.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.0	2.0	2.0	1.0	1.5	1.5	1.5
Lost Time Adjust (s)	-2.5	-2.0		-2.5	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	3.5	3.0		3.5	3.0	3.5	3.5	3.5
Lead/Lag		Lead			Lead		Lag	Lag
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	22.6	41.5		22.6	130.9	130.4	112.0	112.0
Actuated g/C Ratio	0.14	0.26		0.14	0.82	0.82	0.70	0.70
v/c Ratio	0.67	0.45		0.19	0.63	0.32	0.04	0.55
Control Delay	81.3	39.9		24.2	29.8	3.1	10.9	14.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	39.9		24.2	29.8	3.1	10.9	14.2
LOS	F	D		C	C	A	B	B
Approach Delay				24.2		8.7		14.2
Approach LOS				C		A		B

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 68 (43%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 17.0
 Intersection Capacity Utilization 71.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 4: Cedar Bluff Road & Sherrill Blvd



Queues
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center























Lane Group	EBL	EBR	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	129	208	77	242	919	16	1398
v/c Ratio	0.67	0.45	0.19	0.63	0.32	0.04	0.55
Control Delay	81.3	39.9	24.2	29.8	3.1	10.9	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.3	39.9	24.2	29.8	3.1	10.9	14.2
Queue Length 50th (ft)	130	145	12	85	76	5	343
Queue Length 95th (ft)	198	198	37	195	100	18	551
Internal Link Dist (ft)			642		919		1139
Turn Bay Length (ft)	90			75		85	
Base Capacity (vph)	252	598	502	521	2895	403	2540
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.35	0.15	0.46	0.32	0.04	0.55

Intersection Summary

HCM Signalized Intersection Capacity Analysis
4: Cedar Bluff Road & Sherrill Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	0	191	69	0	2	223	809	37	15	1257	29
Future Volume (vph)	119	0	191	69	0	2	223	809	37	15	1257	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	12	14	12	12	12	13	12
Grade (%)		-9%			-6%			-2%			1%	
Total Lost time (s)	3.5		3.0		3.5		3.0	3.5		3.5	3.5	
Lane Util. Factor	1.00		1.00		0.95		1.00	0.95		1.00	0.95	
Frt	1.00		0.85		1.00		1.00	0.99		1.00	1.00	
Flt Protected	0.95		1.00		0.95		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849		1655		3232		1906	3551		1761	3626	
Flt Permitted	0.70		1.00		0.74		0.14	1.00		0.31	1.00	
Satd. Flow (perm)	1371		1655		2501		276	3551		576	3626	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	0	208	75	0	2	242	879	40	16	1366	32
RTOR Reduction (vph)	0	0	34	0	44	0	0	2	0	0	1	0
Lane Group Flow (vph)	129	0	174	0	33	0	242	917	0	16	1397	0
Turn Type	Perm		pm+ov	Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4	1		4		1	6				2
Permitted Phases	4		4	4			6			2		
Actuated Green, G (s)	20.1		33.5		20.1		128.4	128.4		110.0	110.0	
Effective Green, g (s)	22.6		37.5		22.6		130.4	130.4		112.0	112.0	
Actuated g/C Ratio	0.14		0.23		0.14		0.82	0.82		0.70	0.70	
Clearance Time (s)	6.0		5.0		6.0		5.0	5.5		5.5	5.5	
Vehicle Extension (s)	3.0		2.5		3.0		2.5	5.0		5.0	5.0	
Lane Grp Cap (vph)	193		387		353		381	2894		403	2538	
v/s Ratio Prot			0.04				c0.06	0.26				0.39
v/s Ratio Perm	c0.09		0.06		0.01		c0.46			0.03		
v/c Ratio	0.67		0.45		0.09		0.64	0.32		0.04	0.55	
Uniform Delay, d1	65.1		52.4		59.8		12.1	3.7		7.4	11.7	
Progression Factor	1.00		1.00		1.00		3.43	0.72		1.00	1.00	
Incremental Delay, d2	8.5		0.6		0.1		2.8	0.3		0.2	0.9	
Delay (s)	73.6		53.0		59.9		44.3	2.9		7.6	12.6	
Level of Service	E		D		E		D	A		A	B	
Approach Delay (s)		60.9			59.9			11.5			12.5	
Approach LOS		E			E			B			B	
Intersection Summary												
HCM 2000 Control Delay			18.8				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			10.0		
Intersection Capacity Utilization			71.3%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

	↙	↖	↑	↘	↓	
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations	↙	↖	↑↑	↘	↑↑	
Traffic Volume (vph)	99	28	914	130	771	
Future Volume (vph)	99	28	914	130	771	
Turn Type	Perm	pm+ov	NA	pm+pt	NA	
Protected Phases		1	2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	1	2	1	6	
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	9.5	10.5	9.5	10.5	10.0
Total Split (s)	25.0	20.0	70.0	20.0	90.0	25.0
Total Split (%)	21.7%	17.4%	60.9%	17.4%	78.3%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	1.5	2.5	1.5	2.5	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	5.5	6.5	5.5	6.5	
Lead/Lag		Lead	Lag	Lead		
Lead-Lag Optimize?		Yes	Yes	Yes		
Recall Mode	None	None	C-Min	None	C-Min	None
Act Effect Green (s)	14.1	28.0	75.0	89.4	88.4	
Actuated g/C Ratio	0.12	0.24	0.65	0.78	0.77	
v/c Ratio	0.63	0.07	0.53	0.40	0.31	
Control Delay	63.1	9.1	7.1	7.1	4.7	
Queue Delay	0.0	0.0	0.2	0.0	0.0	
Total Delay	63.1	9.1	7.2	7.1	4.7	
LOS	E	A	A	A	A	
Approach Delay			7.2		5.1	
Approach LOS			A		A	

Intersection Summary

Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 62 (54%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 8.9
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 5: Cedar Bluff Road & Fox Lonas Rd



Queues
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center
























Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	108	30	1204	141	838
v/c Ratio	0.63	0.07	0.53	0.40	0.31
Control Delay	63.1	9.1	7.1	7.1	4.7
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	63.1	9.1	7.2	7.1	4.7
Queue Length 50th (ft)	77	0	50	21	83
Queue Length 95th (ft)	131	20	417	46	134
Internal Link Dist (ft)			493		1729
Turn Bay Length (ft)	200			100	
Base Capacity (vph)	235	498	2260	431	2714
Starvation Cap Reductn	0	0	313	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.06	0.62	0.33	0.31

Intersection Summary

HCM Signalized Intersection Capacity Analysis
5: Cedar Bluff Road & Fox Lonas Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	99	0	28	0	914	194	130	771	0
Future Volume (vph)	0	0	0	99	0	28	0	914	194	130	771	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%			1%	
Total Lost time (s)				6.0		5.5		6.5		5.5	6.5	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Fr _t				1.00		0.85		0.97		1.00	1.00	
Fl _t Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1770		1583		3446		1761	3522	
Fl _t Permitted				0.76		1.00		1.00		0.17	1.00	
Satd. Flow (perm)				1410		1583		3446		322	3522	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	108	0	30	0	993	211	141	838	0
RTOR Reduction (vph)	0	0	0	0	0	24	0	12	0	0	0	0
Lane Group Flow (vph)	0	0	0	108	0	6	0	1192	0	141	838	0
Turn Type	Perm			Perm		pm+ov	Perm	NA		pm+pt	NA	
Protected Phases		4				1		2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				14.1		22.0		75.0		88.4	88.4	
Effective Green, g (s)				14.1		22.0		75.0		88.4	88.4	
Actuated g/C Ratio				0.12		0.19		0.65		0.77	0.77	
Clearance Time (s)				6.0		5.5		6.5		5.5	6.5	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				172		302		2247		346	2707	
v/s Ratio Prot						0.00		c0.35		c0.03	0.24	
v/s Ratio Perm				c0.08		0.00				0.29		
v/c Ratio				0.63		0.02		0.53		0.41	0.31	
Uniform Delay, d ₁				48.0		37.7		10.6		6.1	4.0	
Progression Factor				1.00		1.00		0.55		1.00	1.00	
Incremental Delay, d ₂				7.0		0.0		0.8		0.8	0.3	
Delay (s)				54.9		37.8		6.7		6.9	4.3	
Level of Service				D		D		A		A	A	
Approach Delay (s)		0.0			51.2			6.7			4.7	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.5									A
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			115.0						18.0			
Intersection Capacity Utilization			57.5%									B
Analysis Period (min)			15									
c Critical Lane Group												

Timings
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	118	81	103	26	172	234	774	21	694
Future Volume (vph)	118	81	103	26	172	234	774	21	694
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	5	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	6.0	8.0	6.0	6.0	8.0	6.0	20.0	6.0	20.0
Minimum Split (s)	12.0	14.0	12.0	12.0	14.0	12.0	26.6	12.0	26.5
Total Split (s)	15.0	29.0	25.0	12.0	26.0	25.0	62.0	12.0	49.0
Total Split (%)	13.0%	25.2%	21.7%	10.4%	22.6%	21.7%	53.9%	10.4%	42.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min
Act Effct Green (s)	33.2	26.3	46.3	23.5	17.1	69.1	61.4	55.1	48.6
Actuated g/C Ratio	0.29	0.23	0.40	0.20	0.15	0.60	0.53	0.48	0.42
v/c Ratio	0.46	0.21	0.16	0.10	0.77	0.71	0.47	0.07	0.63
Control Delay	35.8	38.4	4.4	28.9	63.9	24.5	19.2	11.0	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	35.8	38.4	4.4	28.9	63.9	24.5	19.2	11.0	26.3
LOS	D	D	A	C	E	C	B	B	C
Approach Delay		25.8			59.8		20.4		26.0
Approach LOS		C			E		C		C

Intersection Summary










Cycle Length: 115
 Actuated Cycle Length: 115
 Offset: 16 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 26.6
 Intersection Capacity Utilization 74.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: Cedar Bluff Road & Dutchtown Rd



Queues
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center























									
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	128	88	112	28	211	254	878	23	922
v/c Ratio	0.46	0.21	0.16	0.10	0.77	0.71	0.47	0.07	0.63
Control Delay	35.8	38.4	4.4	28.9	63.9	24.5	19.2	11.0	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	35.8	38.4	4.4	28.9	63.9	24.5	19.2	11.0	26.3
Queue Length 50th (ft)	69	55	0	14	147	88	234	6	135
Queue Length 95th (ft)	122	102	34	37	228	154	285	m13	344
Internal Link Dist (ft)		7299			1954		1139		493
Turn Bay Length (ft)	200		200	150		100		50	
Base Capacity (vph)	281	425	767	292	322	424	1913	330	1474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	59
Spillback Cap Reductn	0	0	0	0	0	0	4	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.21	0.15	0.10	0.66	0.60	0.46	0.07	0.65

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: Cedar Bluff Road & Dutchtown Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

























												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	81	103	26	172	22	234	774	34	21	694	155
Future Volume (vph)	118	81	103	26	172	22	234	774	34	21	694	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			0%				1%
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1831		1770	3517		1761	3425	
Flt Permitted	0.31	1.00	1.00	0.70	1.00		0.16	1.00		0.30	1.00	
Satd. Flow (perm)	583	1863	1583	1304	1831		302	3517		557	3425	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	88	112	28	187	24	254	841	37	23	754	168
RTOR Reduction (vph)	0	0	73	0	4	0	0	3	0	0	16	0
Lane Group Flow (vph)	128	88	39	28	207	0	254	875	0	23	906	0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	36.3	26.3	40.3	23.4	19.4		66.2	56.6		49.8	46.2	
Effective Green, g (s)	36.3	26.3	40.3	23.4	19.4		66.2	56.6		49.8	46.2	
Actuated g/C Ratio	0.32	0.23	0.35	0.20	0.17		0.58	0.49		0.43	0.40	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	296	426	637	281	308		352	1730		278	1375	
v/s Ratio Prot	c0.04	0.05	0.01	0.00	c0.11		c0.09	0.25		0.00	0.26	
v/s Ratio Perm	0.10		0.02	0.02			c0.33			0.03		
v/c Ratio	0.43	0.21	0.06	0.10	0.67		0.72	0.51		0.08	0.66	
Uniform Delay, d1	29.8	35.9	24.8	37.1	44.8		16.9	19.7		18.8	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		0.90	0.90	
Incremental Delay, d2	1.0	0.2	0.0	0.2	5.7		7.1	1.1		0.1	2.4	
Delay (s)	30.8	36.1	24.8	37.2	50.5		24.0	20.8		17.0	27.5	
Level of Service	C	D	C	D	D		C	C		B	C	
Approach Delay (s)		30.2			48.9			21.5			27.2	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			












HCM Unsignalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 				 		 		
Traffic Volume (veh/h)	39	260	11	23	275	97	7	41	25	161	113	22	
Future Volume (Veh/h)	39	260	11	23	275	97	7	41	25	161	113	22	
Sign Control		Free			Free			Stop			Stop		
Grade		-9%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	42	283	12	25	299	105	8	45	27	175	123	24	
Pedestrians													
Lane Width (ft)													
Walking Speed (ft/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None					None							
Median storage (veh)													
Upstream signal (ft)	1142												
pX, platoon unblocked													
vC, conflicting volume	404			295			658	827	148	676	780	202	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	404			295			658	827	148	676	780	202	
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	96			98			96	84	97	37	60	97	
cM capacity (veh/h)	1151			1263			224	288	873	277	307	805	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2				
Volume Total	42	189	106	174	254	53	27	175	147				
Volume Left	42	0	0	25	0	8	0	175	0				
Volume Right	0	0	12	0	105	0	27	0	24				
cSH	1151	1700	1700	1263	1700	276	873	277	341				
Volume to Capacity	0.04	0.11	0.06	0.02	0.15	0.19	0.03	0.63	0.43				
Queue Length 95th (ft)	3	0	0	2	0	17	2	98	52				
Control Delay (s)	8.2	0.0	0.0	1.3	0.0	21.1	9.3	37.8	23.3				
Lane LOS	A			A		C	A	E	C				
Approach Delay (s)	1.0			0.5		17.1		31.2					
Approach LOS						C		D					
Intersection Summary													
Average Delay	10.3												
Intersection Capacity Utilization	44.5%			ICU Level of Service					A				
Analysis Period (min)	15												

HCM Unsignalized Intersection Capacity Analysis
8: Sherrill Blvd & Park West Blvd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

							
Movement	NBL	NBR	NET	NER	SWL	SWT	
Lane Configurations							
Traffic Volume (veh/h)	27	15	256	66	14	194	
Future Volume (Veh/h)	27	15	256	66	14	194	
Sign Control	Stop		Free			Free	
Grade	0%		-9%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	29	16	278	72	15	211	
Pedestrians							
Lane Width (ft)							
Walking Speed (ft/s)							
Percent Blockage							
Right turn flare (veh)							
Median type			None			None	
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked							
vC, conflicting volume	450	175			350		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	450	175			350		
tC, single (s)	6.8	6.9			4.1		
tC, 2 stage (s)							
tF (s)	3.5	3.3			2.2		
p0 queue free %	95	98			99		
cM capacity (veh/h)	531	838			1206		
Direction, Lane #	NB 1	NB 2	NE 1	NE 2	SW 1	SW 2	SW 3
Volume Total	29	16	185	165	15	106	106
Volume Left	29	0	0	0	15	0	0
Volume Right	0	16	0	72	0	0	0
cSH	531	838	1700	1700	1206	1700	1700
Volume to Capacity	0.05	0.02	0.11	0.10	0.01	0.06	0.06
Queue Length 95th (ft)	4	1	0	0	1	0	0
Control Delay (s)	12.2	9.4	0.0	0.0	8.0	0.0	0.0
Lane LOS	B	A			A		
Approach Delay (s)	11.2		0.0		0.5		
Approach LOS	B						
Intersection Summary							
Average Delay			1.0				
Intersection Capacity Utilization			21.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 9: Park West Blvd & Park 40 Blvd

2030 Projected School PM Peak w MOB
 Parkwest Medical Center



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕	↕
Traffic Volume (veh/h)	4	602	395	0	123	3
Future Volume (Veh/h)	4	602	395	0	123	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	654	429	0	134	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			968			
pX, platoon unblocked						
vC, conflicting volume	429				764	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	429				764	214
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				60	100
cM capacity (veh/h)	1127				339	790
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	222	436	286	143	134	3
Volume Left	4	0	0	0	134	0
Volume Right	0	0	0	0	0	3
cSH	1127	1700	1700	1700	339	790
Volume to Capacity	0.00	0.26	0.17	0.08	0.40	0.00
Queue Length 95th (ft)	0	0	0	0	46	0
Control Delay (s)	0.2	0.0	0.0	0.0	22.4	9.6
Lane LOS	A				C	A
Approach Delay (s)	0.1		0.0		22.1	
Approach LOS					C	
Intersection Summary						
Average Delay			2.5			
Intersection Capacity Utilization			32.9%		ICU Level of Service	A
Analysis Period (min)			15			

Timings
10: Sherrill Blvd & Dutchtown Rd

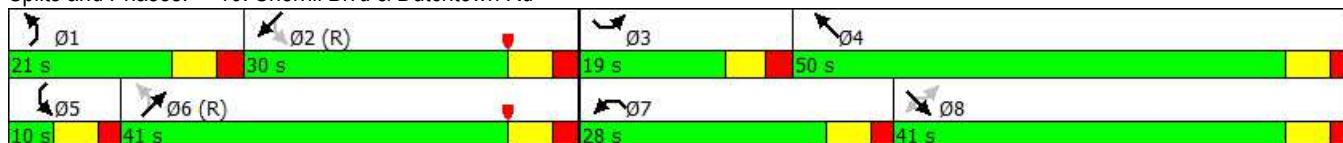
2030 Projected School PM Peak w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	198	286	109	356	182	139	205	48	248
Future Volume (vph)	198	286	109	356	182	139	205	48	248
Turn Type	pm+pt	NA	Perm	Prot	NA	pm+pt	NA	pm+pt	NA
Protected Phases	3	8		7	4	1	6	5	2
Permitted Phases	8		8			6		2	
Detector Phase	3	8	8	7	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	6.0	8.0	8.0	6.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	12.0	14.5	14.5	12.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	19.0	41.0	41.0	28.0	50.0	21.0	41.0	10.0	30.0
Total Split (%)	15.8%	34.2%	34.2%	23.3%	41.7%	17.5%	34.2%	8.3%	25.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	38.2	25.6	25.6	18.4	31.4	56.3	47.2	46.6	39.5
Actuated g/C Ratio	0.32	0.21	0.21	0.15	0.26	0.47	0.39	0.39	0.33
v/c Ratio	0.49	0.78	0.15	0.74	0.43	0.33	0.27	0.12	0.32
Control Delay	26.7	58.1	0.4	57.0	37.6	22.3	18.7	21.5	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	58.1	0.4	57.0	37.6	22.3	18.7	21.5	30.6
LOS	C	E	A	E	D	C	B	C	C
Approach Delay		37.1			50.2		19.8		29.5
Approach LOS		D			D		B		C

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 35.1
 Intersection Capacity Utilization 63.6%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected School PM Peak w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	215	311	118	387	210	151	369	52	371
v/c Ratio	0.49	0.78	0.15	0.74	0.43	0.33	0.27	0.12	0.32
Control Delay	26.7	58.1	0.4	57.0	37.6	22.3	18.7	21.5	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	58.1	0.4	57.0	37.6	22.3	18.7	21.5	30.6
Queue Length 50th (ft)	109	230	0	148	134	65	66	21	100
Queue Length 95th (ft)	137	305	0	196	180	129	119	53	173
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	440	543	993	629	678	495	1387	427	1143
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.57	0.12	0.62	0.31	0.31	0.27	0.12	0.32
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected School PM Peak w MOB
 Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	198	286	109	356	182	11	139	205	134	48	248	93
Future Volume (vph)	198	286	109	356	182	11	139	205	134	48	248	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	1.00	1.00	0.88	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	2787	3433	1847		1770	3329		1770	3395	
Flt Permitted	0.63	1.00	1.00	0.95	1.00		0.42	1.00		0.53	1.00	
Satd. Flow (perm)	1167	1863	2787	3433	1847		779	3329		991	3395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	311	118	387	198	12	151	223	146	52	270	101
RTOR Reduction (vph)	0	0	93	0	2	0	0	79	0	0	27	0
Lane Group Flow (vph)	215	311	25	387	208	0	151	290	0	52	344	0
Turn Type	pm+pt	NA	Perm	Prot	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8				6			2		
Actuated Green, G (s)	38.2	25.6	25.6	18.4	31.4		57.5	46.0		45.0	39.5	
Effective Green, g (s)	38.2	25.6	25.6	18.4	31.4		57.5	46.0		45.0	39.5	
Actuated g/C Ratio	0.32	0.21	0.21	0.15	0.26		0.48	0.38		0.38	0.33	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	434	397	594	526	483		468	1276		407	1117	
v/s Ratio Prot	0.05	c0.17		c0.11	c0.11		c0.03	0.09		0.01	0.10	
v/s Ratio Perm	0.11		0.01				c0.12			0.04		
v/c Ratio	0.50	0.78	0.04	0.74	0.43		0.32	0.23		0.13	0.31	
Uniform Delay, d1	31.7	44.6	37.5	48.5	36.9		18.3	25.0		24.1	30.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.9	9.7	0.0	5.3	0.6		0.4	0.4		0.1	0.7	
Delay (s)	32.6	54.3	37.5	53.8	37.5		18.7	25.4		24.3	30.8	
Level of Service	C	D	D	D	D		B	C		C	C	
Approach Delay (s)		44.0			48.0			23.5			30.0	
Approach LOS		D			D			C			C	

Intersection Summary

HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

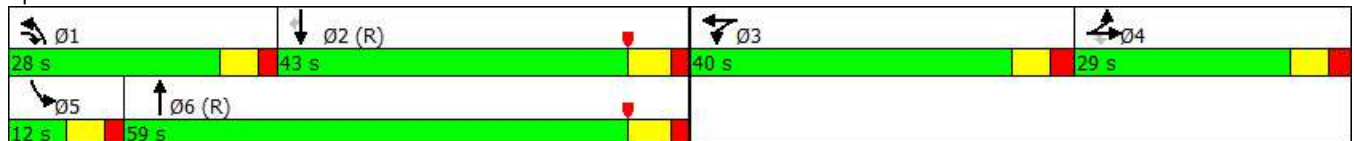
2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	54	87	279	179	463	427	802	44	713	87
Future Volume (vph)	54	87	279	179	463	427	802	44	713	87
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	29.0	29.0	28.0	40.0	40.0	28.0	59.0	12.0	43.0	43.0
Total Split (%)	20.7%	20.7%	20.0%	28.6%	28.6%	20.0%	42.1%	8.6%	30.7%	30.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	23.3	23.3	49.9	34.7	34.7	23.1	60.7	9.3	43.4	43.4
Actuated g/C Ratio	0.17	0.17	0.36	0.25	0.25	0.16	0.43	0.07	0.31	0.31
v/c Ratio	0.21	0.76	0.36	0.44	0.87	0.82	0.51	0.42	0.69	0.15
Control Delay	51.3	73.9	34.6	48.0	59.4	63.1	21.9	75.9	40.1	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	51.3	73.9	34.6	48.0	59.4	63.1	22.0	75.9	40.1	2.7
LOS	D	E	C	D	E	E	C	E	D	A
Approach Delay		54.6			57.3		34.1		38.1	
Approach LOS		D			E		C		D	

Intersection Summary











Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 100 (71%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 43.0
 Intersection Capacity Utilization 72.0%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	59	207	191	175	753	464	1114	48	775	95
v/c Ratio	0.21	0.76	0.36	0.44	0.87	0.82	0.51	0.42	0.69	0.15
Control Delay	51.3	73.9	34.6	48.0	59.4	63.1	21.9	75.9	40.1	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	51.3	73.9	34.6	48.0	59.4	63.1	22.0	75.9	40.1	2.7
Queue Length 50th (ft)	46	188	129	147	341	232	209	39	349	4
Queue Length 95th (ft)	89	284	198	228	425	290	287	m69	426	m23
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	313	297	548	416	894	588	2164	115	1120	619
Starvation Cap Reductn	0	0	0	0	0	0	224	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.70	0.35	0.42	0.84	0.79	0.57	0.42	0.69	0.15

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

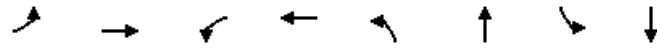
2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	87	279	179	463	212	427	802	223	44	713	87
Future Volume (vph)	54	87	279	179	463	212	427	802	223	44	713	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.92	0.85	1.00	0.95		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1634	1512	1618	3355		3433	4920		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1634	1512	1618	3355		3433	4920		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	95	303	195	503	230	464	872	242	48	775	95
RTOR Reduction (vph)	0	0	0	0	32	0	0	34	0	0	0	66
Lane Group Flow (vph)	59	207	191	175	721	0	464	1080	0	48	775	29
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	20.3	20.3	41.4	32.2	32.2		21.1	56.9		5.1	40.9	40.9
Effective Green, g (s)	23.3	23.3	45.4	34.7	34.7		23.1	59.4		8.1	43.4	43.4
Actuated g/C Ratio	0.17	0.17	0.32	0.25	0.25		0.17	0.42		0.06	0.31	0.31
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	286	271	490	401	831		566	2087		100	1119	500
v/s Ratio Prot	0.03	c0.13	0.06	0.11	c0.21		c0.14	0.22		0.03	c0.21	
v/s Ratio Perm			0.06									0.02
v/c Ratio	0.21	0.76	0.39	0.44	0.87		0.82	0.52		0.48	0.69	0.06
Uniform Delay, d1	50.4	55.7	36.6	44.4	50.4		56.4	29.7		63.9	42.4	33.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.94	0.74		1.05	0.85	1.00
Incremental Delay, d2	0.3	11.5	0.4	0.6	9.4		7.1	0.7		2.2	2.9	0.2
Delay (s)	50.6	67.3	37.0	45.0	59.8		60.0	22.7		69.6	38.9	34.1
Level of Service	D	E	D	D	E		E	C		E	D	C
Approach Delay (s)		52.5			57.0			33.7			40.0	
Approach LOS		D			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			43.0				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			72.0%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
7: Park 40 Blvd & Sherrill Blvd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

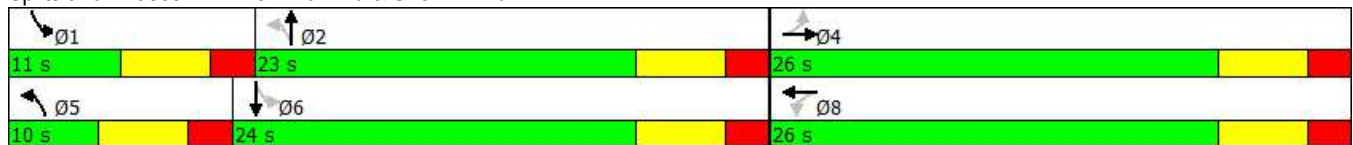


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↗
Traffic Volume (vph)	62	152	51	528	6	32	109	290
Future Volume (vph)	62	152	51	528	6	32	109	290
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	10.0	22.0
Total Split (s)	26.0	26.0	26.0	26.0	10.0	23.0	11.0	24.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	16.7%	38.3%	18.3%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	20.4	20.4		20.4	11.1	10.5	14.7	13.9
Actuated g/C Ratio	0.42	0.42		0.42	0.23	0.22	0.31	0.29
v/c Ratio	0.35	0.12		0.65	0.02	0.10	0.29	0.66
Control Delay	19.2	9.6		14.2	11.0	15.4	12.8	21.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	9.6		14.2	11.0	15.4	12.8	21.6
LOS	B	A		B	B	B	B	C
Approach Delay		12.2		14.2		14.8		19.4
Approach LOS		B		B		B		B

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 48.1
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 64.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues
7: Park 40 Blvd & Sherrill Blvd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	186	894	7	42	118	356
v/c Ratio	0.35	0.12	0.65	0.02	0.10	0.29	0.66
Control Delay	19.2	9.6	14.2	11.0	15.4	12.8	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	9.6	14.2	11.0	15.4	12.8	21.6
Queue Length 50th (ft)	11	12	74	2	8	23	77
Queue Length 95th (ft)	#57	41	#211	m6	m28	48	185
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	192	1551	1385	298	658	411	711
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.12	0.65	0.02	0.06	0.29	0.50

Intersection Summary






















95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	62	152	19	51	528	244	6	32	6	109	290	38
Future Volume (vph)	62	152	19	51	528	244	6	32	6	109	290	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	0.98			0.96		1.00	0.97		1.00	0.98	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3636			3371		1770	1816		1770	1831	
Fl _t Permitted	0.23	1.00			0.92		0.55	1.00		0.52	1.00	
Satd. Flow (perm)	453	3636			3113		1021	1816		968	1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	165	21	55	574	265	7	35	7	118	315	41
RTOR Reduction (vph)	0	13	0	0	71	0	0	6	0	0	8	0
Lane Group Flow (vph)	67	173	0	0	823	0	7	36	0	118	348	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.4	20.4			20.4		10.5	9.9		18.5	13.9	
Effective Green, g (s)	20.4	20.4			20.4		10.5	9.9		18.5	13.9	
Actuated g/C Ratio	0.39	0.39			0.39		0.20	0.19		0.35	0.26	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	174	1402			1200		211	339		408	481	
v/s Ratio Prot		0.05					0.00	0.02		c0.03	c0.19	
v/s Ratio Perm	0.15				c0.26		0.01			0.08		
v/c Ratio	0.39	0.12			0.69		0.03	0.11		0.29	0.72	
Uniform Delay, d ₁	11.7	10.5			13.6		17.1	17.8		12.1	17.7	
Progression Factor	1.00	1.00			1.00		1.01	1.00		1.00	1.00	
Incremental Delay, d ₂	6.3	0.2			3.2		0.1	0.1		0.4	5.3	
Delay (s)	18.1	10.7			16.8		17.3	18.0		12.5	23.1	
Level of Service	B	B			B		B	B		B	C	
Approach Delay (s)		12.6			16.8			17.9			20.5	
Approach LOS		B			B			B			C	
Intersection Summary												
HCM 2000 Control Delay			17.2				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			52.9				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			64.8%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

Timings
10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	399	445	357	271	105	136	379	18	445
Future Volume (vph)	399	445	357	271	105	136	379	18	445
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	36.0	36.0	36.0	19.0	19.0	17.0	45.0	10.0	38.0
Total Split (%)	32.7%	32.7%	32.7%	17.3%	17.3%	15.5%	40.9%	9.1%	34.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	28.0	28.0	28.0	12.6	12.6	50.9	46.9	39.9	34.8
Actuated g/C Ratio	0.25	0.25	0.25	0.11	0.11	0.46	0.43	0.36	0.32
v/c Ratio	0.73	0.72	0.69	0.75	0.59	0.49	0.43	0.06	0.63
Control Delay	48.5	42.7	22.2	60.0	56.5	24.2	20.8	18.4	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	42.7	22.2	60.0	56.5	24.2	20.8	18.4	32.9
LOS	D	D	C	E	E	C	C	B	C
Approach Delay		37.9			59.0		21.4		32.5
Approach LOS		D			E		C		C

Intersection Summary










Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 35.4
 Intersection Capacity Utilization 70.5%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak MIT w MOB
Parkwest Medical Center


























									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	299	619	388	295	125	148	636	20	695
v/c Ratio	0.73	0.72	0.69	0.75	0.59	0.49	0.43	0.06	0.63
Control Delay	48.5	42.7	22.2	60.0	56.5	24.2	20.8	18.4	32.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	42.7	22.2	60.0	56.5	24.2	20.8	18.4	32.9
Queue Length 50th (ft)	207	214	104	105	82	62	131	8	209
Queue Length 95th (ft)	316	281	214	#154	144	105	211	22	276
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	439	914	590	405	220	310	1487	318	1110
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.68	0.66	0.73	0.57	0.48	0.43	0.06	0.63

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected AM Peak MIT w MOB
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	399	445	357	271	105	10	136	379	206	18	445	194
Future Volume (vph)	399	445	357	271	105	10	136	379	206	18	445	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.95		1.00	0.95	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3354	1583	3433	1838		1770	3352		1770	3378	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.21	1.00		0.41	1.00	
Satd. Flow (perm)	1610	3354	1583	3433	1838		386	3352		759	3378	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	434	484	388	295	114	11	148	412	224	20	484	211
RTOR Reduction (vph)	0	0	163	0	4	0	0	62	0	0	42	0
Lane Group Flow (vph)	299	619	225	295	121	0	148	574	0	20	653	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	28.0	28.0	28.0	12.6	12.6		50.9	43.3		36.4	34.8	
Effective Green, g (s)	28.0	28.0	28.0	12.6	12.6		50.9	43.3		36.4	34.8	
Actuated g/C Ratio	0.25	0.25	0.25	0.11	0.11		0.46	0.39		0.33	0.32	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	409	853	402	393	210		299	1319		265	1068	
v/s Ratio Prot	c0.19	0.18		c0.09	0.07		c0.04	0.17		0.00	c0.19	
v/s Ratio Perm			0.14				0.19			0.02		
v/c Ratio	0.73	0.73	0.56	0.75	0.58		0.49	0.44		0.08	0.61	
Uniform Delay, d1	37.6	37.5	35.7	47.2	46.2		19.4	24.4		24.9	31.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.6	3.1	1.8	7.9	3.8		1.3	1.0		0.1	2.6	
Delay (s)	44.2	40.6	37.4	55.0	50.0		20.7	25.5		25.0	34.5	
Level of Service	D	D	D	E	D		C	C		C	C	
Approach Delay (s)		40.5			53.5			24.6			34.2	
Approach LOS		D			D			C			C	

Intersection Summary

HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center

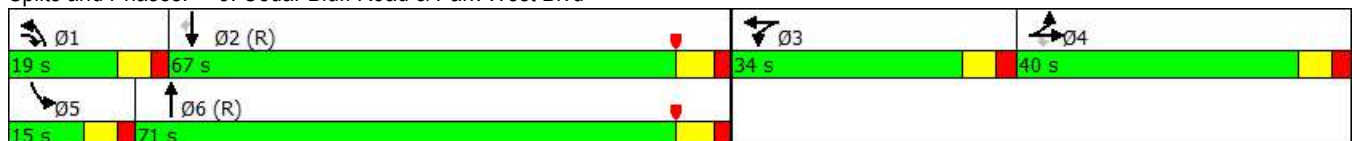
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	83	38	437	318	93	220	694	55	1046	36
Future Volume (vph)	83	38	437	318	93	220	694	55	1046	36
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	40.0	40.0	19.0	34.0	34.0	19.0	71.0	15.0	67.0	67.0
Total Split (%)	25.0%	25.0%	11.9%	21.3%	21.3%	11.9%	44.4%	9.4%	41.9%	41.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	32.5	32.5	51.6	27.1	27.1	15.6	76.7	11.6	69.4	69.4
Actuated g/C Ratio	0.20	0.20	0.32	0.17	0.17	0.10	0.48	0.07	0.43	0.43
v/c Ratio	0.26	0.83	0.53	0.81	0.66	0.72	0.35	0.48	0.73	0.05
Control Delay	54.4	81.9	47.9	85.9	48.5	66.0	20.0	82.4	37.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	54.4	81.9	47.9	85.9	48.5	66.0	20.1	82.4	37.5	1.1
LOS	D	F	D	F	D	E	C	F	D	A
Approach Delay		63.4			61.2		30.3		38.5	
Approach LOS		E			E		C		D	

Intersection Summary

Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 50 (31%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 44.4
 Intersection Capacity Utilization 71.4%
 Analysis Period (min) 15











Intersection LOS: D
ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	90	260	256	221	428	239	837	60	1137	39
v/c Ratio	0.26	0.83	0.53	0.81	0.66	0.72	0.35	0.48	0.73	0.05
Control Delay	54.4	81.9	47.9	85.9	48.5	66.0	20.0	82.4	37.5	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	54.4	81.9	47.9	85.9	48.5	66.0	20.1	82.4	37.5	1.1
Queue Length 50th (ft)	79	272	221	243	163	129	184	66	314	0
Queue Length 95th (ft)	132	384	321	352	226	#180	241	119	469	m5
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	392	354	489	303	705	339	2408	133	1564	761
Starvation Cap Reductn	0	0	0	0	0	0	519	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.73	0.52	0.73	0.61	0.71	0.44	0.45	0.73	0.05

Intersection Summary























95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

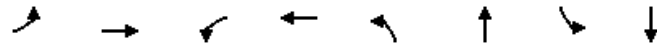
2030 Projected PM Peak MIT w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	38	437	318	93	186	220	694	76	55	1046	36
Future Volume (vph)	83	38	437	318	93	186	220	694	76	55	1046	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1554	1512	1618	3224		3433	5010		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	0.99		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1554	1512	1618	3224		3433	5010		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	41	475	346	101	202	239	754	83	60	1137	39
RTOR Reduction (vph)	0	0	0	0	103	0	0	7	0	0	0	22
Lane Group Flow (vph)	90	260	256	221	325	0	239	830	0	60	1137	17
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	29.5	29.5	43.1	24.6	24.6		13.6	73.0		7.4	66.8	66.8
Effective Green, g (s)	32.5	32.5	47.1	27.1	27.1		15.6	75.5		10.4	69.3	69.3
Actuated g/C Ratio	0.20	0.20	0.29	0.17	0.17		0.10	0.47		0.07	0.43	0.43
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	349	315	445	274	546		334	2364		113	1563	699
v/s Ratio Prot	0.05	c0.17	0.06	c0.14	0.10		c0.07	0.17		0.03	c0.31	
v/s Ratio Perm			0.11									0.01
v/c Ratio	0.26	0.83	0.58	0.81	0.60		0.72	0.35		0.53	0.73	0.02
Uniform Delay, d1	53.6	61.0	48.0	63.9	61.4		70.0	26.7		72.4	37.5	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.78	0.71		1.00	0.89	1.00
Incremental Delay, d2	0.3	15.7	1.5	15.4	1.5		5.8	0.4		3.3	2.7	0.1
Delay (s)	53.9	76.7	49.4	79.3	62.8		60.6	19.5		75.7	35.9	26.0
Level of Service	D	E	D	E	E		E	B		E	D	C
Approach Delay (s)		61.8			68.4			28.6			37.5	
Approach LOS		E			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			44.6				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			160.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			71.4%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

Timings
7: Park 40 Blvd & Sherrill Blvd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center



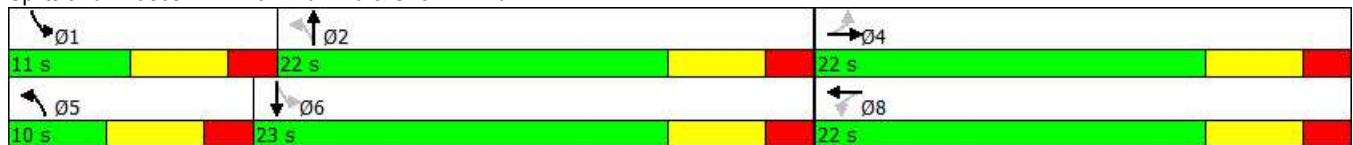
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↗
Traffic Volume (vph)	40	433	25	220	23	45	174	127
Future Volume (vph)	40	433	25	220	23	45	174	127
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	10.0	22.0
Total Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	11.0	23.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.2%	40.0%	20.0%	41.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	21.2	21.2		21.2	9.0	8.8	13.2	13.0
Actuated g/C Ratio	0.49	0.49		0.49	0.21	0.20	0.30	0.30
v/c Ratio	0.08	0.27		0.24	0.08	0.19	0.49	0.28
Control Delay	12.1	11.1		8.7	9.3	13.6	15.1	12.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	11.1		8.7	9.3	13.6	15.1	12.9
LOS	B	B		A	A	B	B	B
Approach Delay		11.2		8.7		12.5		14.1
Approach LOS		B		A		B		B

Intersection Summary

Cycle Length: 55
 Actuated Cycle Length: 43.5
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 11.3
 Intersection Capacity Utilization 56.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues
7: Park 40 Blvd & Sherrill Blvd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center
























Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	43	482	363	25	72	189	156
v/c Ratio	0.08	0.27	0.24	0.08	0.19	0.49	0.28
Control Delay	12.1	11.1	8.7	9.3	13.6	15.1	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	11.1	8.7	9.3	13.6	15.1	12.9
Queue Length 50th (ft)	8	50	26	4	12	32	24
Queue Length 95th (ft)	27	91	57	14	37	65	75
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	508	1802	1537	305	678	382	767
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.27	0.24	0.08	0.11	0.49	0.20

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	40	433	10	25	220	89	23	45	21	174	127	17
Future Volume (vph)	40	433	10	25	220	89	23	45	21	174	127	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	1.00			0.96		1.00	0.95		1.00	0.98	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3686			3385		1770	1773		1770	1831	
Fl _t Permitted	0.54	1.00			0.90		0.66	1.00		0.46	1.00	
Satd. Flow (perm)	1042	3686			3048		1226	1773		858	1831	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	471	11	27	239	97	25	49	23	189	138	18
RTOR Reduction (vph)	0	2	0	0	57	0	0	20	0	0	9	0
Lane Group Flow (vph)	43	480	0	0	306	0	25	52	0	189	147	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.8	19.8			19.8		7.9	7.2		15.7	11.1	
Effective Green, g (s)	19.8	19.8			19.8		7.9	7.2		15.7	11.1	
Actuated g/C Ratio	0.40	0.40			0.40		0.16	0.15		0.32	0.22	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	415	1471			1216		202	257		356	409	
v/s Ratio Prot		c0.13					0.00	0.03		c0.05	0.08	
v/s Ratio Perm	0.04				0.10		0.02			c0.12		
v/c Ratio	0.10	0.33			0.25		0.12	0.20		0.53	0.36	
Uniform Delay, d ₁	9.3	10.3			10.0		17.8	18.7		13.1	16.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.5	0.6			0.5		0.3	0.4		1.5	0.5	
Delay (s)	9.8	10.9			10.4		18.1	19.1		14.7	16.8	
Level of Service	A	B			B		B	B		B	B	
Approach Delay (s)		10.8			10.4			18.8			15.6	
Approach LOS		B			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.5				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			49.6				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			56.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

Timings
10: Sherrill Blvd & Dutchtown Rd

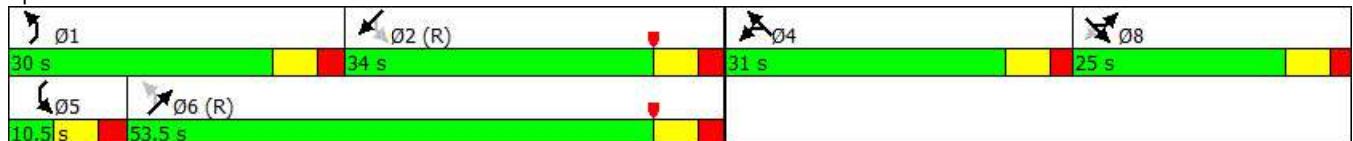
2030 Projected PM Peak MIT w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	401	218	134	521	304	327	744	15	540
Future Volume (vph)	401	218	134	521	304	327	744	15	540
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.5	16.5
Total Split (s)	25.0	25.0	25.0	31.0	31.0	30.0	53.5	10.5	34.0
Total Split (%)	20.8%	20.8%	20.8%	25.8%	25.8%	25.0%	44.6%	8.8%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.5	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	18.8	18.8	18.8	24.5	24.5	58.2	54.0	34.7	30.4
Actuated g/C Ratio	0.16	0.16	0.16	0.20	0.20	0.48	0.45	0.29	0.25
v/c Ratio	0.88	0.87	0.35	0.81	0.92	0.86	0.61	0.08	0.73
Control Delay	83.7	67.7	3.8	55.4	77.5	45.7	27.6	20.3	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	67.7	3.8	55.4	77.5	45.7	27.6	20.3	47.1
LOS	F	E	A	E	E	D	C	C	D
Approach Delay		60.7			63.8		32.5		46.4
Approach LOS		E			E		C		D

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 48.9
 Intersection Capacity Utilization 84.7%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected PM Peak MIT w MOB
Parkwest Medical Center


























									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	222	451	146	566	350	355	957	16	653
v/c Ratio	0.88	0.87	0.35	0.81	0.92	0.86	0.61	0.08	0.73
Control Delay	83.7	67.7	3.8	55.4	77.5	45.7	27.6	20.3	47.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.7	67.7	3.8	55.4	77.5	45.7	27.6	20.3	47.1
Queue Length 50th (ft)	186	189	0	215	265	185	266	6	250
Queue Length 95th (ft)	#340	#279	17	281	#442	#335	393	19	322
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	254	524	423	715	386	439	1567	200	890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.86	0.35	0.79	0.91	0.81	0.61	0.08	0.73

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected PM Peak MIT w MOB
 Parkwest Medical Center

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	401	218	134	521	304	18	327	744	136	15	540	61
Future Volume (vph)	401	218	134	521	304	18	327	744	136	15	540	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	0.98	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3312	1583	3433	1847		1770	3457		1770	3486	
Flt Permitted	0.95	0.98	1.00	0.95	1.00		0.17	1.00		0.29	1.00	
Satd. Flow (perm)	1610	3312	1583	3433	1847		321	3457		540	3486	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	436	237	146	566	330	20	355	809	148	16	587	66
RTOR Reduction (vph)	0	0	123	0	2	0	0	12	0	0	7	0
Lane Group Flow (vph)	222	451	23	566	348	0	355	945	0	16	646	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	18.8	18.8	18.8	24.5	24.5		58.2	50.1		32.0	30.4	
Effective Green, g (s)	18.8	18.8	18.8	24.5	24.5		58.2	50.1		32.0	30.4	
Actuated g/C Ratio	0.16	0.16	0.16	0.20	0.20		0.49	0.42		0.27	0.25	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	252	518	248	700	377		412	1443		160	883	
v/s Ratio Prot	c0.14	0.14		0.16	c0.19		c0.15	0.27		0.00	0.19	
v/s Ratio Perm			0.01				c0.26			0.03		
v/c Ratio	0.88	0.87	0.09	0.81	0.92		0.86	0.65		0.10	0.73	
Uniform Delay, d1	49.5	49.4	43.3	45.5	46.8		25.7	28.0		32.6	41.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	28.0	14.8	0.2	6.8	27.9		16.7	2.3		0.3	5.3	
Delay (s)	77.5	64.2	43.5	52.4	74.7		42.3	30.3		32.8	46.4	
Level of Service	E	E	D	D	E		D	C		C	D	
Approach Delay (s)		64.1			60.9			33.6			46.1	
Approach LOS		E			E			C			D	

Intersection Summary

HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017

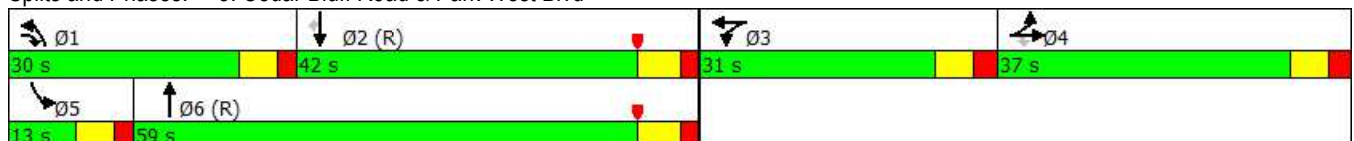
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	101	54	362	143	278	415	902	56	616	61
Future Volume (vph)	101	54	362	143	278	415	902	56	616	61
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	37.0	37.0	30.0	31.0	31.0	30.0	59.0	13.0	42.0	42.0
Total Split (%)	26.4%	26.4%	21.4%	22.1%	22.1%	21.4%	42.1%	9.3%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	27.6	27.6	55.3	24.3	24.3	24.2	65.1	10.9	48.4	48.4
Actuated g/C Ratio	0.20	0.20	0.40	0.17	0.17	0.17	0.46	0.08	0.35	0.35
v/c Ratio	0.33	0.75	0.37	0.49	0.76	0.76	0.47	0.45	0.54	0.10
Control Delay	49.6	67.4	30.7	58.2	58.0	55.7	21.0	65.7	43.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	49.6	67.4	30.7	58.2	58.0	55.7	21.2	65.7	43.4	1.9
LOS	D	E	C	E	E	E	C	E	D	A
Approach Delay		49.5			58.0		31.3		41.7	
Approach LOS		D			E		C		D	

Intersection Summary

Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 41.2
 Intersection Capacity Utilization 63.4%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service B











Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	110	232	220	139	473	451	1091	61	670	66
v/c Ratio	0.33	0.75	0.37	0.49	0.76	0.76	0.47	0.45	0.54	0.10
Control Delay	49.6	67.4	30.7	58.2	58.0	55.7	21.0	65.7	43.4	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	49.6	67.4	30.7	58.2	58.0	55.7	21.2	65.7	43.4	1.9
Queue Length 50th (ft)	86	210	145	126	204	218	218	54	184	0
Queue Length 95th (ft)	138	297	202	200	267	282	288	m101	335	m10
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	411	377	620	312	682	645	2336	138	1246	669
Starvation Cap Reductn	0	0	0	0	0	0	362	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.62	0.35	0.45	0.69	0.70	0.55	0.44	0.54	0.10























Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
3: Cedar Bluff Road & Park West Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017

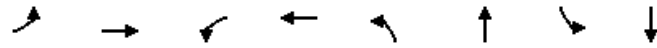
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	101	54	362	143	278	143	415	902	102	56	616	61
Future Volume (vph)	101	54	362	143	278	143	415	902	102	56	616	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.89	0.85	1.00	0.95		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1580	1512	1618	3342		3433	5008		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1580	1512	1618	3342		3433	5008		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	110	59	393	155	302	155	451	980	111	61	670	66
RTOR Reduction (vph)	0	0	0	0	39	0	0	9	0	0	0	43
Lane Group Flow (vph)	110	232	220	139	434	0	451	1082	0	61	670	23
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	24.6	24.6	46.8	21.8	21.8		22.2	61.4		6.7	45.9	45.9
Effective Green, g (s)	27.6	27.6	50.8	24.3	24.3		24.2	63.9		9.7	48.4	48.4
Actuated g/C Ratio	0.20	0.20	0.36	0.17	0.17		0.17	0.46		0.07	0.35	0.35
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	338	311	548	280	580		593	2285		120	1248	558
v/s Ratio Prot	0.06	c0.15	0.07	0.09	c0.13		c0.13	0.22		0.03	c0.19	
v/s Ratio Perm			0.08									0.01
v/c Ratio	0.33	0.75	0.40	0.50	0.75		0.76	0.47		0.51	0.54	0.04
Uniform Delay, d1	48.2	52.9	33.3	52.3	54.9		55.1	26.4		62.8	36.8	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.89	0.75		0.91	1.07	1.00
Incremental Delay, d2	0.4	8.9	0.4	1.0	5.0		4.0	0.5		2.1	1.4	0.1
Delay (s)	48.6	61.8	33.6	53.3	59.9		53.3	20.4		59.3	40.8	30.5
Level of Service	D	E	C	D	E		D	C		E	D	C
Approach Delay (s)		48.2			58.4			30.0			41.3	
Approach LOS		D			E			C			D	
Intersection Summary												
HCM 2000 Control Delay			40.4				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			15.5		
Intersection Capacity Utilization			63.4%				ICU Level of Service			B		
Analysis Period (min)			15									

c Critical Lane Group

Timings
7: Park 40 Blvd & Sherrill Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017

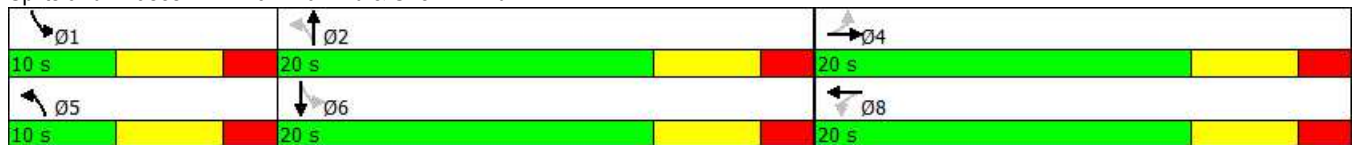


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖	↖	↗	↖	↗
Traffic Volume (vph)	35	348	40	351	10	28	131	84
Future Volume (vph)	35	348	40	351	10	28	131	84
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	20.0	20.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (s)	20.0	20.0	20.0	20.0	10.0	20.0	10.0	20.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	20.0%	40.0%	20.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	22.3	22.3		22.3	8.9	9.2	11.0	12.7
Actuated g/C Ratio	0.59	0.59		0.59	0.23	0.24	0.29	0.34
v/c Ratio	0.07	0.19		0.27	0.03	0.15	0.36	0.19
Control Delay	11.8	9.5		9.8	8.2	10.2	11.3	9.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	9.5		9.8	8.2	10.2	11.3	9.9
LOS	B	A		A	A	B	B	A
Approach Delay		9.7		9.8		9.9		10.7
Approach LOS		A		A		A		B

Intersection Summary

Cycle Length: 50
 Actuated Cycle Length: 37.9
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 52.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues
7: Park 40 Blvd & Sherrill Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017
























Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	38	403	495	11	65	142	116
v/c Ratio	0.07	0.19	0.27	0.03	0.15	0.36	0.19
Control Delay	11.8	9.5	9.8	8.2	10.2	11.3	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	9.5	9.8	8.2	10.2	11.3	9.9
Queue Length 50th (ft)	7	38	47	2	6	21	13
Queue Length 95th (ft)	24	71	88	8	29	47	52
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	538	2158	1822	356	818	398	920
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.19	0.27	0.03	0.08	0.36	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: Park 40 Blvd & Sherrill Blvd

2030 Projected Midday Peak MIT w MOB

09/07/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	35	348	23	40	351	64	10	28	32	131	84	23
Future Volume (vph)	35	348	23	40	351	64	10	28	32	131	84	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Fr _t	1.00	0.99			0.98		1.00	0.92		1.00	0.97	
Fl _t Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3664			3449		1770	1712		1770	1803	
Fl _t Permitted	0.47	1.00			0.89		0.68	1.00		0.60	1.00	
Satd. Flow (perm)	917	3664			3075		1271	1712		1112	1803	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	378	25	43	382	70	11	30	35	142	91	25
RTOR Reduction (vph)	0	8	0	0	22	0	0	30	0	0	21	0
Lane Group Flow (vph)	38	395	0	0	473	0	11	35	0	142	95	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.7	18.7			18.7		7.3	6.6		9.9	7.9	
Effective Green, g (s)	18.7	18.7			18.7		7.3	6.6		9.9	7.9	
Actuated g/C Ratio	0.41	0.41			0.41		0.16	0.15		0.22	0.17	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	378	1512			1269		212	249		272	314	
v/s Ratio Prot		0.11					0.00	0.02		c0.02	0.05	
v/s Ratio Perm	0.04				c0.15		0.01			c0.09		
v/c Ratio	0.10	0.26			0.37		0.05	0.14		0.52	0.30	
Uniform Delay, d ₁	8.1	8.8			9.2		16.0	16.9		15.5	16.3	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d ₂	0.5	0.4			0.8		0.1	0.3		1.8	0.5	
Delay (s)	8.7	9.2			10.1		16.1	17.1		17.3	16.9	
Level of Service	A	A			B		B	B		B	B	
Approach Delay (s)		9.1			10.1			17.0			17.1	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			11.6				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			45.3				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			52.2%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Timings
10: Sherrill Blvd & Dutchtown Rd

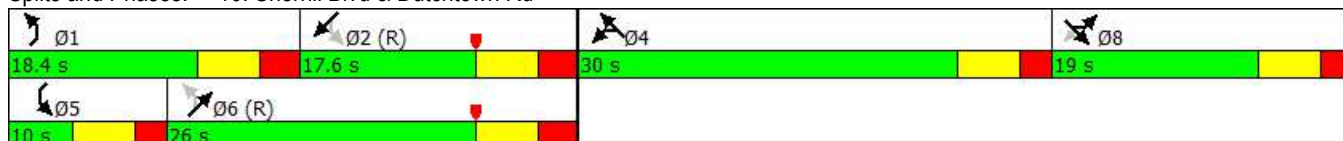
2030 Projected Midday Peak MIT w MOB
09/07/2017

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	94	259	196	156	303	170	208	39	82
Future Volume (vph)	94	259	196	156	303	170	208	39	82
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	19.0	19.0	19.0	30.0	30.0	18.4	26.0	10.0	17.6
Total Split (%)	22.4%	22.4%	22.4%	35.3%	35.3%	21.6%	30.6%	11.8%	20.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	11.9	11.9	11.9	20.4	20.4	34.2	27.8	22.8	17.2
Actuated g/C Ratio	0.14	0.14	0.14	0.24	0.24	0.40	0.33	0.27	0.20
v/c Ratio	0.41	0.62	0.46	0.21	0.78	0.41	0.34	0.14	0.29
Control Delay	38.7	40.2	4.8	25.4	42.5	21.8	14.7	20.0	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	40.2	4.8	25.4	42.5	21.8	14.7	20.0	15.2
LOS	D	D	A	C	D	C	B	B	B
Approach Delay		27.3			36.9		16.9		15.9
Approach LOS		C			D		B		B

Intersection Summary

Cycle Length: 85
 Actuated Cycle Length: 85
 Offset: 65 (76%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 25.2
 Intersection Capacity Utilization 62.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B










Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd


























2030 Projected Midday Peak MIT w MOB

09/07/2017

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	92	292	213	170	350	185	411	42	222
v/c Ratio	0.41	0.62	0.46	0.21	0.78	0.41	0.34	0.14	0.29
Control Delay	38.7	40.2	4.8	25.4	42.5	21.8	14.7	20.0	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.7	40.2	4.8	25.4	42.5	21.8	14.7	20.0	15.2
Queue Length 50th (ft)	48	80	0	36	169	68	52	14	22
Queue Length 95th (ft)	100	123	24	59	256	123	95	36	56
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	247	520	481	969	524	465	1204	304	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.56	0.44	0.18	0.67	0.40	0.34	0.14	0.29
Intersection Summary									

HCM Signalized Intersection Capacity Analysis
 10: Sherrill Blvd & Dutchtown Rd

2030 Projected Midday Peak MIT w MOB
 09/07/2017

												
Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		 		 				 			 	
Traffic Volume (vph)	94	259	196	156	303	19	170	208	170	39	82	122
Future Volume (vph)	94	259	196	156	303	19	170	208	170	39	82	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.93		1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3384	1583	3433	1846		1770	3300		1770	3221	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.45	1.00		0.51	1.00	
Satd. Flow (perm)	1610	3384	1583	3433	1846		830	3300		952	3221	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	102	282	213	170	329	21	185	226	185	42	89	133
RTOR Reduction (vph)	0	0	183	0	3	0	0	130	0	0	106	0
Lane Group Flow (vph)	92	292	30	170	347	0	185	281	0	42	116	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	11.9	11.9	11.9	20.4	20.4		34.2	25.4		20.1	17.3	
Effective Green, g (s)	11.9	11.9	11.9	20.4	20.4		34.2	25.4		20.1	17.3	
Actuated g/C Ratio	0.14	0.14	0.14	0.24	0.24		0.40	0.30		0.24	0.20	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	225	473	221	823	443		448	986		252	655	
v/s Ratio Prot	0.06	c0.09		0.05	c0.19		c0.05	0.09		0.01	0.04	
v/s Ratio Perm			0.02				c0.12			0.03		
v/c Ratio	0.41	0.62	0.13	0.21	0.78		0.41	0.29		0.17	0.18	
Uniform Delay, d1	33.3	34.4	32.0	25.8	30.2		17.2	22.8		25.4	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	2.4	0.3	0.1	8.8		0.6	0.7		0.3	0.6	
Delay (s)	34.6	36.8	32.3	26.0	39.0		17.9	23.6		25.7	28.6	
Level of Service	C	D	C	C	D		B	C		C	C	
Approach Delay (s)		34.9			34.7			21.8			28.1	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Timings
3: Cedar Bluff Road & Park West Blvd

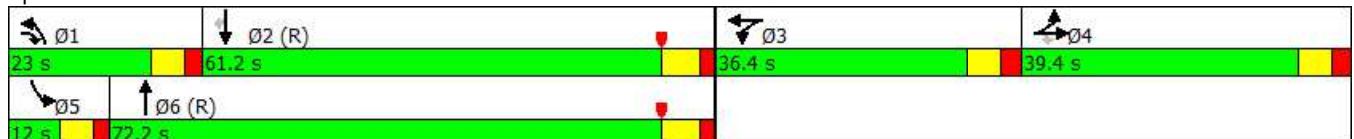
2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	134	24	384	214	214	241	817	43	887	37
Future Volume (vph)	134	24	384	214	214	241	817	43	887	37
Turn Type	Split	NA	pm+ov	Split	NA	Prot	NA	Prot	NA	Perm
Protected Phases	4	4	1	3	3	1	6	5	2	
Permitted Phases			4							2
Detector Phase	4	4	1	3	3	1	6	5	2	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	15.0	6.0	15.0	15.0
Minimum Split (s)	12.5	12.5	12.0	12.5	12.5	12.0	21.5	12.0	21.5	21.5
Total Split (s)	39.4	39.4	23.0	36.4	36.4	23.0	72.2	12.0	61.2	61.2
Total Split (%)	24.6%	24.6%	14.4%	22.8%	22.8%	14.4%	45.1%	7.5%	38.3%	38.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.5	4.0	4.5	4.5
All-Red Time (s)	2.5	2.5	2.0	2.5	2.5	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-3.0	-3.0	-2.0	-2.5	-2.5	-2.0	-2.5	-3.0	-2.5	-2.5
Total Lost Time (s)	3.5	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max	C-Max
Act Effct Green (s)	29.9	29.9	51.4	27.3	27.3	18.0	80.4	10.3	69.2	69.2
Actuated g/C Ratio	0.19	0.19	0.32	0.17	0.17	0.11	0.50	0.06	0.43	0.43
v/c Ratio	0.45	0.77	0.46	0.76	0.73	0.68	0.40	0.42	0.62	0.05
Control Delay	61.5	79.1	45.3	80.5	52.5	65.5	18.0	87.3	32.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	61.5	79.1	45.3	80.5	52.5	65.5	18.2	87.3	32.1	0.1
LOS	E	E	D	F	D	E	B	F	C	A
Approach Delay		62.0			61.0		27.9		33.3	
Approach LOS		E			E		C		C	

Intersection Summary











Cycle Length: 160
 Actuated Cycle Length: 160
 Offset: 52 (33%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 41.4
 Intersection Capacity Utilization 66.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 3: Cedar Bluff Road & Park West Blvd



Queues
3: Cedar Bluff Road & Park West Blvd

2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center

										
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	222	221	210	479	262	1008	47	964	40
v/c Ratio	0.45	0.77	0.46	0.76	0.73	0.68	0.40	0.42	0.62	0.05
Control Delay	61.5	79.1	45.3	80.5	52.5	65.5	18.0	87.3	32.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0
Total Delay	61.5	79.1	45.3	80.5	52.5	65.5	18.2	87.3	32.1	0.1
Queue Length 50th (ft)	137	233	190	231	197	140	221	50	260	0
Queue Length 95th (ft)	203	326	265	329	257	199	249	99	360	m0
Internal Link Dist (ft)		888			1639		269		273	
Turn Bay Length (ft)	110			230		245		95		145
Base Capacity (vph)	385	346	497	327	759	414	2518	112	1562	783
Starvation Cap Reductn	0	0	0	0	0	0	584	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.64	0.44	0.64	0.63	0.63	0.52	0.42	0.62	0.05

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

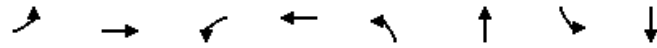
HCM Signalized Intersection Capacity Analysis 2030 Projected School PM Peak MIT w MOB
 3: Cedar Bluff Road & Park West Blvd Parkwest Medical Center

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	24	384	214	214	205	241	817	110	43	887	37
Future Volume (vph)	134	24	384	214	214	205	241	817	110	43	887	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	13	12	12	12	12	11	12	12
Grade (%)		-1%			-1%			0%			-4%	
Total Lost time (s)	3.5	3.5	4.0	4.0	4.0		4.0	4.0		3.0	4.0	4.0
Lane Util. Factor	1.00	0.95	0.95	0.91	0.91		0.97	0.91		1.00	0.95	1.00
Frt	1.00	0.87	0.85	1.00	0.93		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1543	1512	1618	3267		3433	4994		1745	3610	1615
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1719	1543	1512	1618	3267		3433	4994		1745	3610	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	26	417	233	233	223	262	888	120	47	964	40
RTOR Reduction (vph)	0	0	0	0	102	0	0	10	0	0	0	23
Lane Group Flow (vph)	146	222	221	210	377	0	262	998	0	47	964	17
Turn Type	Split	NA	pm+ov	Split	NA		Prot	NA		Prot	NA	Perm
Protected Phases	4	4	1	3	3		1	6		5	2	
Permitted Phases			4									2
Actuated Green, G (s)	26.9	26.9	42.9	24.8	24.8		16.0	76.7		6.1	66.8	66.8
Effective Green, g (s)	29.9	29.9	46.9	27.3	27.3		18.0	79.2		9.1	69.3	69.3
Actuated g/C Ratio	0.19	0.19	0.29	0.17	0.17		0.11	0.50		0.06	0.43	0.43
Clearance Time (s)	6.5	6.5	6.0	6.5	6.5		6.0	6.5		6.0	6.5	6.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	321	288	443	276	557		386	2472		99	1563	699
v/s Ratio Prot	0.08	c0.14	0.06	c0.13	0.12		c0.08	0.20		0.03	c0.27	
v/s Ratio Perm			0.09									0.01
v/c Ratio	0.45	0.77	0.50	0.76	0.68		0.68	0.40		0.47	0.62	0.02
Uniform Delay, d1	57.8	61.8	46.8	63.2	62.2		68.2	25.5		73.1	35.1	26.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.85	0.67		1.06	0.81	1.00
Incremental Delay, d2	0.7	11.6	0.6	11.2	3.0		3.4	0.4		2.3	1.6	0.1
Delay (s)	58.6	73.4	47.5	74.4	65.2		61.6	17.4		80.0	30.0	26.0
Level of Service	E	E	D	E	E		E	B		F	C	C
Approach Delay (s)		60.0			68.0			26.5			32.1	
Approach LOS		E			E			C			C	
Intersection Summary												
HCM 2000 Control Delay			41.6			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			160.0			Sum of lost time (s)			15.5			
Intersection Capacity Utilization			66.4%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Timings
7: Park 40 Blvd & Sherrill Blvd

2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center

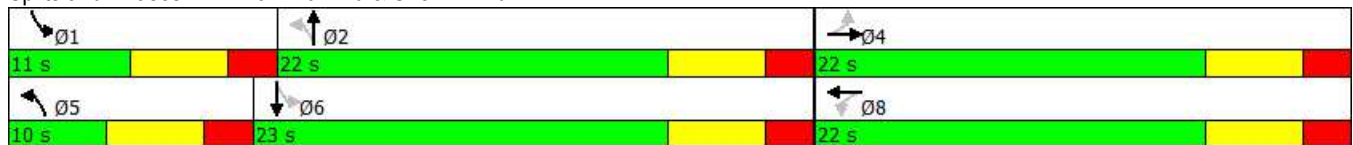


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↗
Traffic Volume (vph)	39	260	23	275	7	41	161	113
Future Volume (vph)	39	260	23	275	7	41	161	113
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	pm+pt	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	10.0	10.0	10.0	10.0	4.0	8.0	4.0	8.0
Minimum Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	10.0	22.0
Total Split (s)	22.0	22.0	22.0	22.0	10.0	22.0	11.0	23.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.2%	40.0%	20.0%	41.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	Max	None	None	None	None
Act Effct Green (s)	21.2	21.2		21.2	9.0	8.7	13.1	12.9
Actuated g/C Ratio	0.49	0.49		0.49	0.21	0.20	0.30	0.30
v/c Ratio	0.09	0.16		0.27	0.03	0.19	0.46	0.27
Control Delay	12.1	10.4		9.4	8.9	13.0	14.3	12.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	10.4		9.4	8.9	13.0	14.3	12.4
LOS	B	B		A	A	B	B	B
Approach Delay		10.6		9.4		12.6		13.5
Approach LOS		B		A		B		B

Intersection Summary

Cycle Length: 55
 Actuated Cycle Length: 43.4
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.46
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 50.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 7: Park 40 Blvd & Sherrill Blvd



Queues
7: Park 40 Blvd & Sherrill Blvd






















2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center



Lane Group	EBL	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	42	295	429	8	72	175	147
v/c Ratio	0.09	0.16	0.27	0.03	0.19	0.46	0.27
Control Delay	12.1	10.4	9.4	8.9	13.0	14.3	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	10.4	9.4	8.9	13.0	14.3	12.4
Queue Length 50th (ft)	8	28	35	1	11	30	21
Queue Length 95th (ft)	26	55	71	7	36	60	69
Internal Link Dist (ft)		2267	1062		1566		1499
Turn Bay Length (ft)	100					100	
Base Capacity (vph)	477	1801	1579	304	676	380	766
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.16	0.27	0.03	0.11	0.46	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis 2030 Projected School PM Peak MIT w MOB
 7: Park 40 Blvd & Sherrill Blvd Parkwest Medical Center

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	39	260	11	23	275	97	7	41	25	161	113	22
Future Volume (vph)	39	260	11	23	275	97	7	41	25	161	113	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		-9%			0%			0%			0%	
Total Lost time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	0.95			0.95		1.00	1.00		1.00	1.00	
Flt	1.00	0.99			0.96		1.00	0.94		1.00	0.98	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1849	3676			3399		1770	1758		1770	1817	
Flt Permitted	0.50	1.00			0.92		0.66	1.00		0.46	1.00	
Satd. Flow (perm)	977	3676			3148		1236	1758		854	1817	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	283	12	25	299	105	8	45	27	175	123	24
RTOR Reduction (vph)	0	5	0	0	48	0	0	23	0	0	14	0
Lane Group Flow (vph)	42	290	0	0	381	0	8	49	0	175	133	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.8	19.8			19.8		7.8	7.1		15.6	11.0	
Effective Green, g (s)	19.8	19.8			19.8		7.8	7.1		15.6	11.0	
Actuated g/C Ratio	0.40	0.40			0.40		0.16	0.14		0.32	0.22	
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	390	1470			1259		202	252		354	403	
v/s Ratio Prot		0.08					0.00	0.03		c0.05	0.07	
v/s Ratio Perm	0.04				c0.12		0.01			c0.11		
v/c Ratio	0.11	0.20			0.30		0.04	0.19		0.49	0.33	
Uniform Delay, d1	9.3	9.7			10.1		17.6	18.7		13.1	16.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.3			0.6		0.1	0.4		1.1	0.5	
Delay (s)	9.9	10.0			10.8		17.7	19.1		14.1	16.6	
Level of Service	A	A			B		B	B		B	B	
Approach Delay (s)		10.0			10.8			18.9			15.3	
Approach LOS		A			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			12.3				HCM 2000 Level of Service				B	
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			49.5				Sum of lost time (s)			18.0		
Intersection Capacity Utilization			50.3%				ICU Level of Service			A		
Analysis Period (min)			15									
c Critical Lane Group												

Timings
10: Sherrill Blvd & Dutchtown Rd

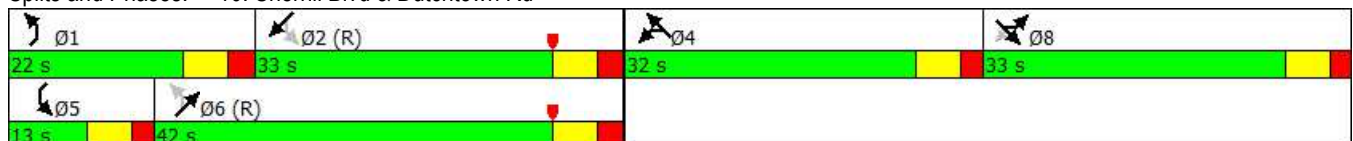
2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center

Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Configurations									
Traffic Volume (vph)	198	286	109	356	182	139	205	48	248
Future Volume (vph)	198	286	109	356	182	139	205	48	248
Turn Type	Split	NA	Perm	Split	NA	pm+pt	NA	pm+pt	NA
Protected Phases	8	8		4	4	1	6	5	2
Permitted Phases			8			6		2	
Detector Phase	8	8	8	4	4	1	6	5	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	10.0	4.0	10.0
Minimum Split (s)	14.5	14.5	14.5	14.0	14.0	10.5	16.5	10.0	16.5
Total Split (s)	33.0	33.0	33.0	32.0	32.0	22.0	42.0	13.0	33.0
Total Split (%)	27.5%	27.5%	27.5%	26.7%	26.7%	18.3%	35.0%	10.8%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.5	2.5	2.0	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.5	6.5	6.0	6.5
Lead/Lag						Lead	Lag	Lead	Lag
Lead-Lag Optimize?						Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max
Act Effct Green (s)	19.9	19.9	19.9	20.1	20.1	60.2	51.0	51.3	43.9
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.50	0.42	0.43	0.37
v/c Ratio	0.64	0.64	0.28	0.67	0.68	0.30	0.25	0.11	0.29
Control Delay	57.1	51.5	1.6	52.5	57.1	19.7	17.0	19.2	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	51.5	1.6	52.5	57.1	19.7	17.0	19.2	27.4
LOS	E	D	A	D	E	B	B	B	C
Approach Delay		43.8			54.1		17.8		26.4
Approach LOS		D			D		B		C

Intersection Summary










Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 37.1
 Intersection Capacity Utilization 57.7%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service B

Splits and Phases: 10: Sherrill Blvd & Dutchtown Rd



Queues
10: Sherrill Blvd & Dutchtown Rd

2030 Projected School PM Peak MIT w MOB
Parkwest Medical Center

									
Lane Group	SEL	SET	SER	NWL	NWT	NEL	NET	SWL	SWT
Lane Group Flow (vph)	170	356	118	387	210	151	369	52	371
v/c Ratio	0.64	0.64	0.28	0.67	0.68	0.30	0.25	0.11	0.29
Control Delay	57.1	51.5	1.6	52.5	57.1	19.7	17.0	19.2	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	51.5	1.6	52.5	57.1	19.7	17.0	19.2	27.4
Queue Length 50th (ft)	136	143	0	147	154	59	61	19	92
Queue Length 95th (ft)	204	182	0	188	224	124	116	50	167
Internal Link Dist (ft)		1094			6715		2069		1876
Turn Bay Length (ft)	200		225	175		475		100	
Base Capacity (vph)	362	758	511	743	401	543	1489	474	1268
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.47	0.23	0.52	0.52	0.28	0.25	0.11	0.29
Intersection Summary									

HCM Signalized Intersection Capacity Analysis 2030 Projected School PM Peak MIT w MOB
 10: Sherrill Blvd & Dutchtown Rd Parkwest Medical Center

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	198	286	109	356	182	11	139	205	134	48	248	93
Future Volume (vph)	198	286	109	356	182	11	139	205	134	48	248	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Lane Util. Factor	0.91	0.91	1.00	0.97	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.94		1.00	0.96	
Flt Protected	0.95	0.99	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3369	1583	3433	1847		1770	3329		1770	3395	
Flt Permitted	0.95	0.99	1.00	0.95	1.00		0.44	1.00		0.53	1.00	
Satd. Flow (perm)	1610	3369	1583	3433	1847		819	3329		991	3395	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	215	311	118	387	198	12	151	223	146	52	270	101
RTOR Reduction (vph)	0	0	98	0	2	0	0	76	0	0	26	0
Lane Group Flow (vph)	170	356	20	387	208	0	151	293	0	52	345	0
Turn Type	Split	NA	Perm	Split	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8				6			2		
Actuated Green, G (s)	19.9	19.9	19.9	20.1	20.1		60.8	49.7		49.7	43.9	
Effective Green, g (s)	19.9	19.9	19.9	20.1	20.1		60.8	49.7		49.7	43.9	
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17		0.51	0.41		0.41	0.37	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.5	6.5		6.0	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	2.0		3.0	2.0	
Lane Grp Cap (vph)	266	558	262	575	309		502	1378		448	1242	
v/s Ratio Prot	0.11	c0.11		0.11	c0.11		c0.03	0.09		0.01	0.10	
v/s Ratio Perm			0.01				c0.12			0.04		
v/c Ratio	0.64	0.64	0.07	0.67	0.67		0.30	0.21		0.12	0.28	
Uniform Delay, d1	46.7	46.7	42.3	46.9	46.9		16.3	22.6		21.2	26.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	2.4	0.1	3.1	5.7		0.3	0.4		0.1	0.6	
Delay (s)	51.7	49.1	42.4	50.0	52.6		16.7	22.9		21.3	27.4	
Level of Service	D	D	D	D	D		B	C		C	C	
Approach Delay (s)		48.5			50.9			21.1			26.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

TDOT Plans

SHEET NO.	PROJECT NO.
58	PHSIP-105313
YEAR	R.O.W.
2016	2016
TYPE	ROAD
	47947-XXXX-94
	KNOW COUNTY

KNOW COUNTY
47947-XXXX-94 (R.O.W.)

R.O.W. PLANS

SEAL BY: _____
DATE: _____

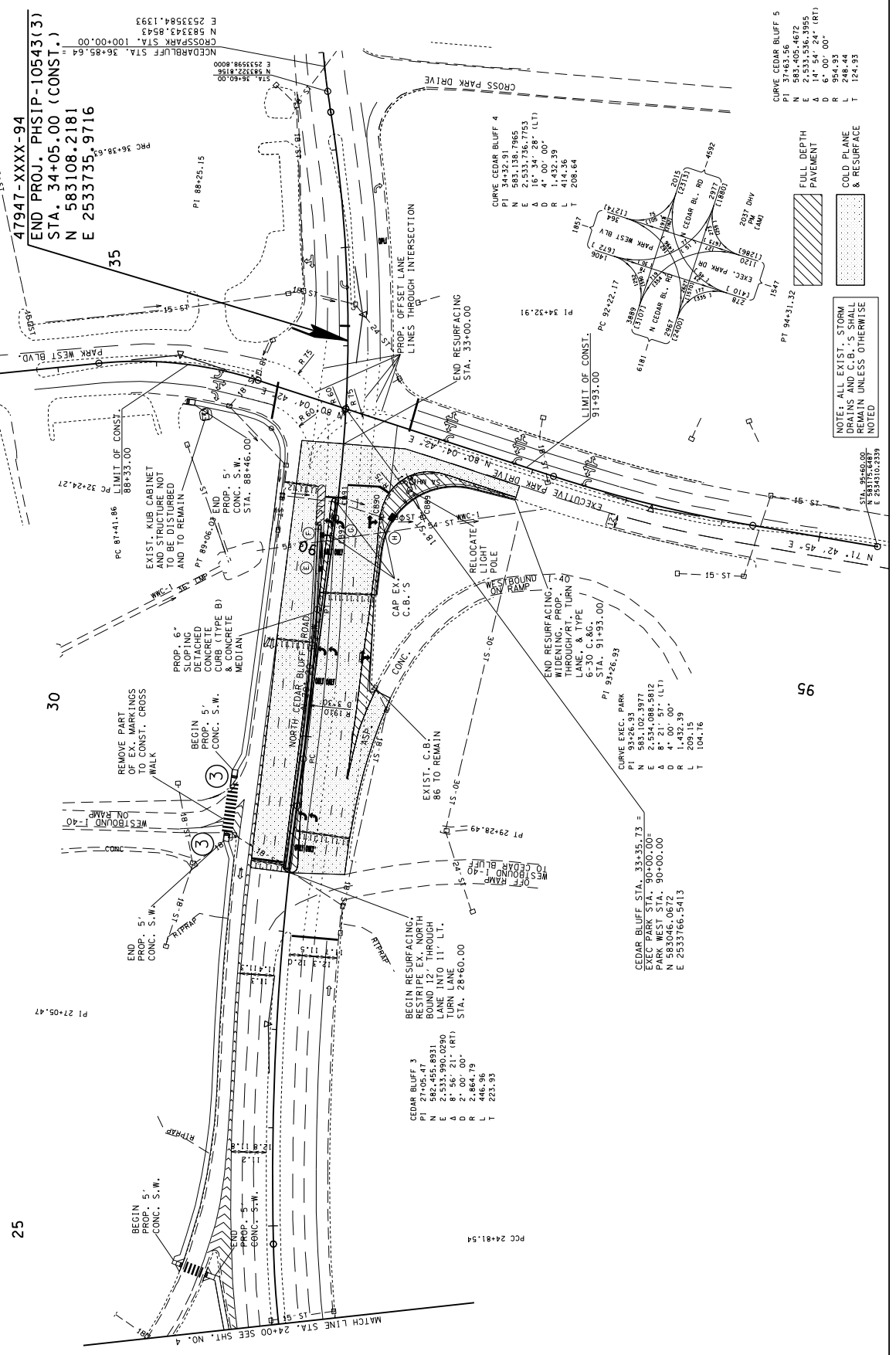
COORDINATES ARE NAD(83) UTM. ALL DATUM ADJUSTED BY THE FACTOR OF 1.000000 AND TIED TO THE STATE PLANE DATUM. ALL POINTS REFERENCED TO THE NAD(83).

STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

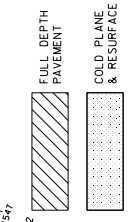
PROPOSED LAYOUT

STA. 24+00 TO STA. 34+05
SCALE: 1" = 50'

PROPOSED DRAINAGE STRUCTURE INFORMATION					
STR #	TYPE	STA.	OFFSET	GT. EL.	IN. EL. / OUT. EL.
E	#25	31+77	4.5' LT.	977.83	N/A / 970.54
F	#25	32+05	3.2' LT.	927.57	920.38 / 920.13
G	CAP & TIE TO EX. C092	32+06	2.7' LT.	927.53	920.14 / 913.34 (EX.)
H	#125C TIE TO EX. PIPE	32+31	38.3' RT.	927.94	918.86 / 919.75



CURVE CEDAR BLUFF 5	
PI	37+63.56
N	583.4054672
E	2.5337367753
A	14° 54' 24" (RT)
D	6' 00' 00"
L	248.44
T	124.23



NOTE: ALL EXIST. STORM DRAINS AND C.B.'S SHALL REMAIN UNLESS OTHERWISE NOTED

STA. 30+50.00
E 2533766.5413

CURVE PARK WEST
PI 88+25.15
N 583.0155262
E 2.5337367753
A 14° 54' 24" (RT)
D 6' 00' 00"
R 395.14
L 164.17
T 83.29

REMOVE PART OF EX. MARKINGS TO CONST. CROSS WALK
PROF. 5' CONC. S.W.
BEGIN STOPPING DETACHED CONCRETE CURB (TYPE B) AND TO REMAIN
PROF. 5' CONC. S.W.
END STOPPING DETACHED CONCRETE CURB (TYPE B) AND TO REMAIN
PROF. 5' CONC. S.W.
STA. 88+46.00

PROF. 5' CONC. S.W.
STA. 28+60.00

EXIST. C.B. 86 TO REMAIN
PROF. 5' CONC. S.W.
STA. 91+93.00

CEDAR BLUFF 3
N 582.4558931
E 2.5339900290
A 8° 56' 21" (RT)
D 2' 00' 00"
R 446.96
L 223.93
T 223.93

CEDAR BLUFF 4
PI 34+32.91
N 583.1387865
E 2.5337367753
A 14° 54' 24" (RT)
D 6' 00' 00"
R 1,432.39
L 414.36
T 208.64

CEDAR BLUFF 5
PI 94+31.32
N 583.1023977
E 2.5340885812
A 8° 21' 51" (LT)
D 6' 00' 00"
R 1,432.39
L 209.15
T 104.76

Trip Generation

Hospital (610)

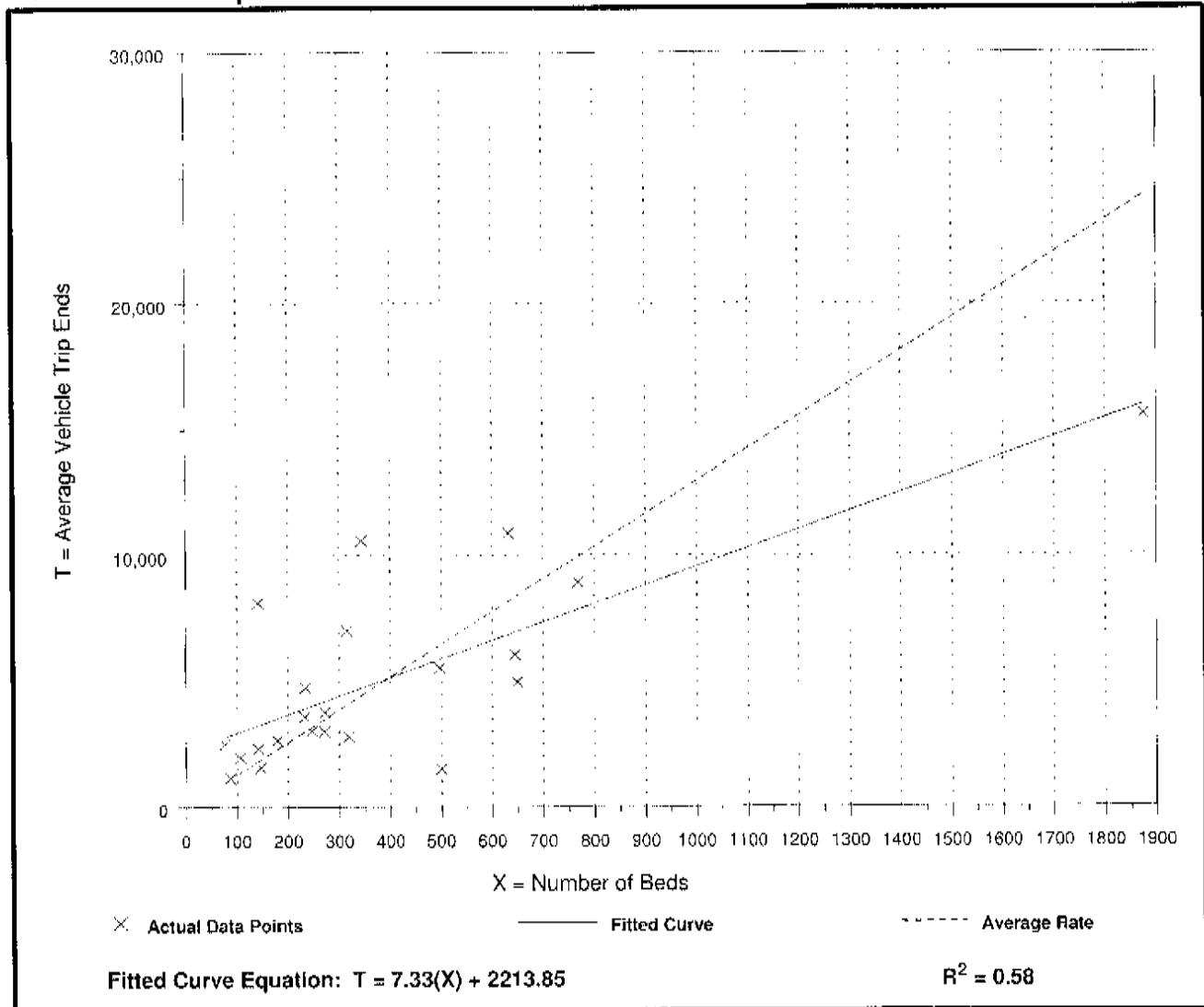
Average Vehicle Trip Ends vs: Beds
On a: Weekday

Number of Studies: 22
Average Number of Beds: 395
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
12.94	3.00 - 57.13	9.07

Data Plot and Equation



Hospital (610)

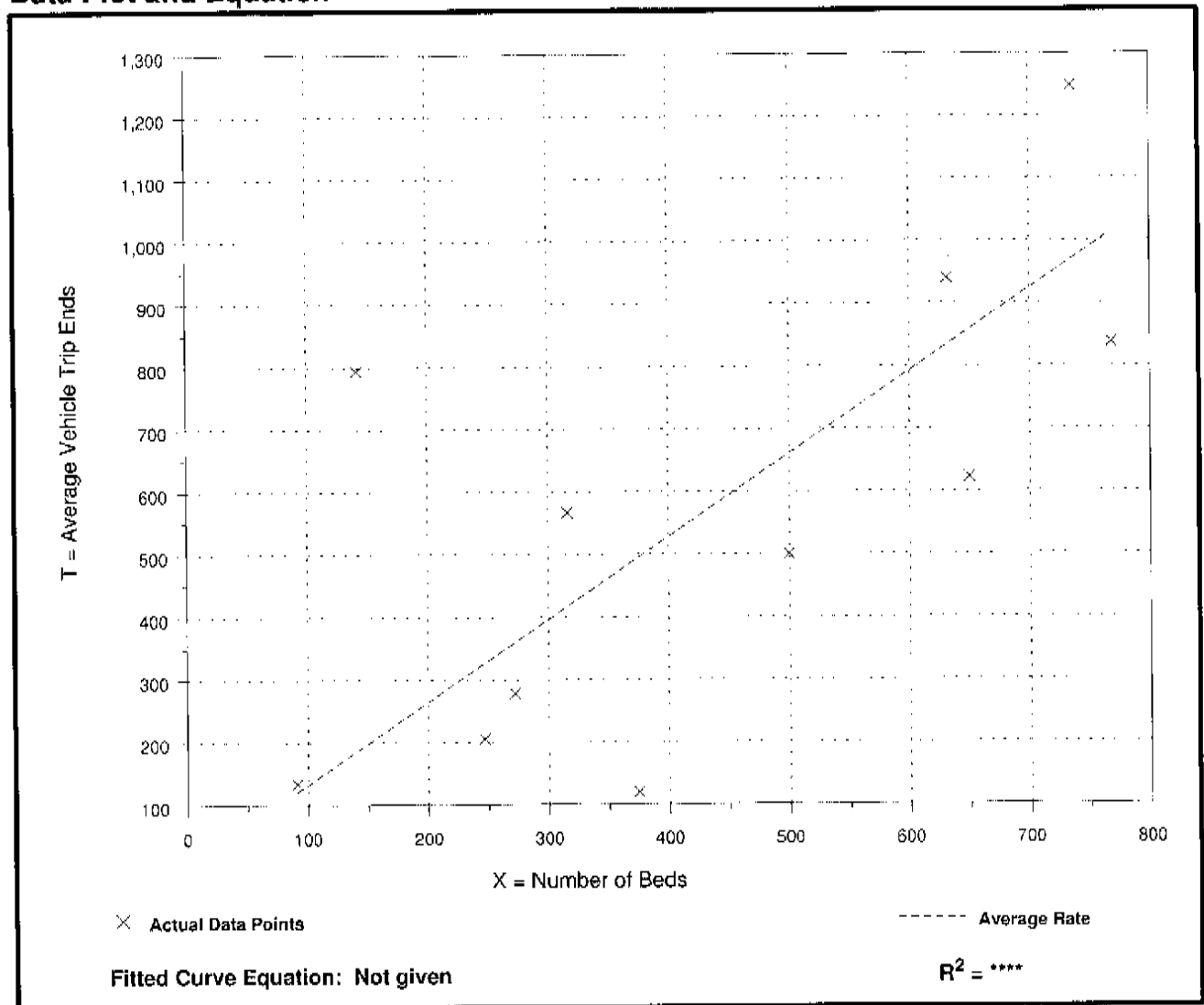
Average Vehicle Trip Ends vs: Beds
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 11
 Average Number of Beds: 430
 Directional Distribution: 72% entering, 28% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.32	0.32 - 5.59	1.43

Data Plot and Equation



Hospital (610)

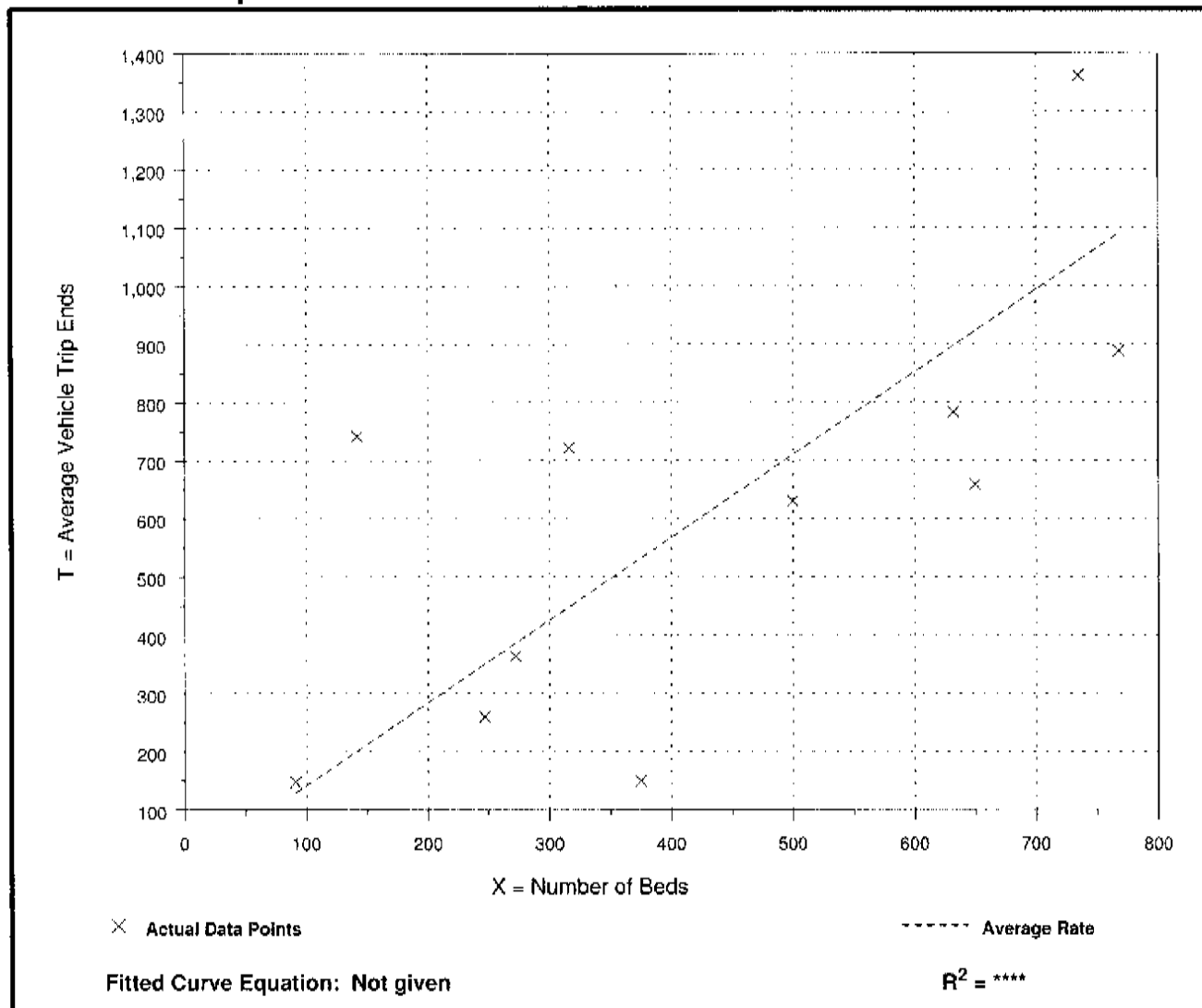
Average Vehicle Trip Ends vs: Beds
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 11
 Average Number of Beds: 430
 Directional Distribution: 33% entering, 67% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.42	0.40 - 5.22	1.44

Data Plot and Equation



Hospital (610)

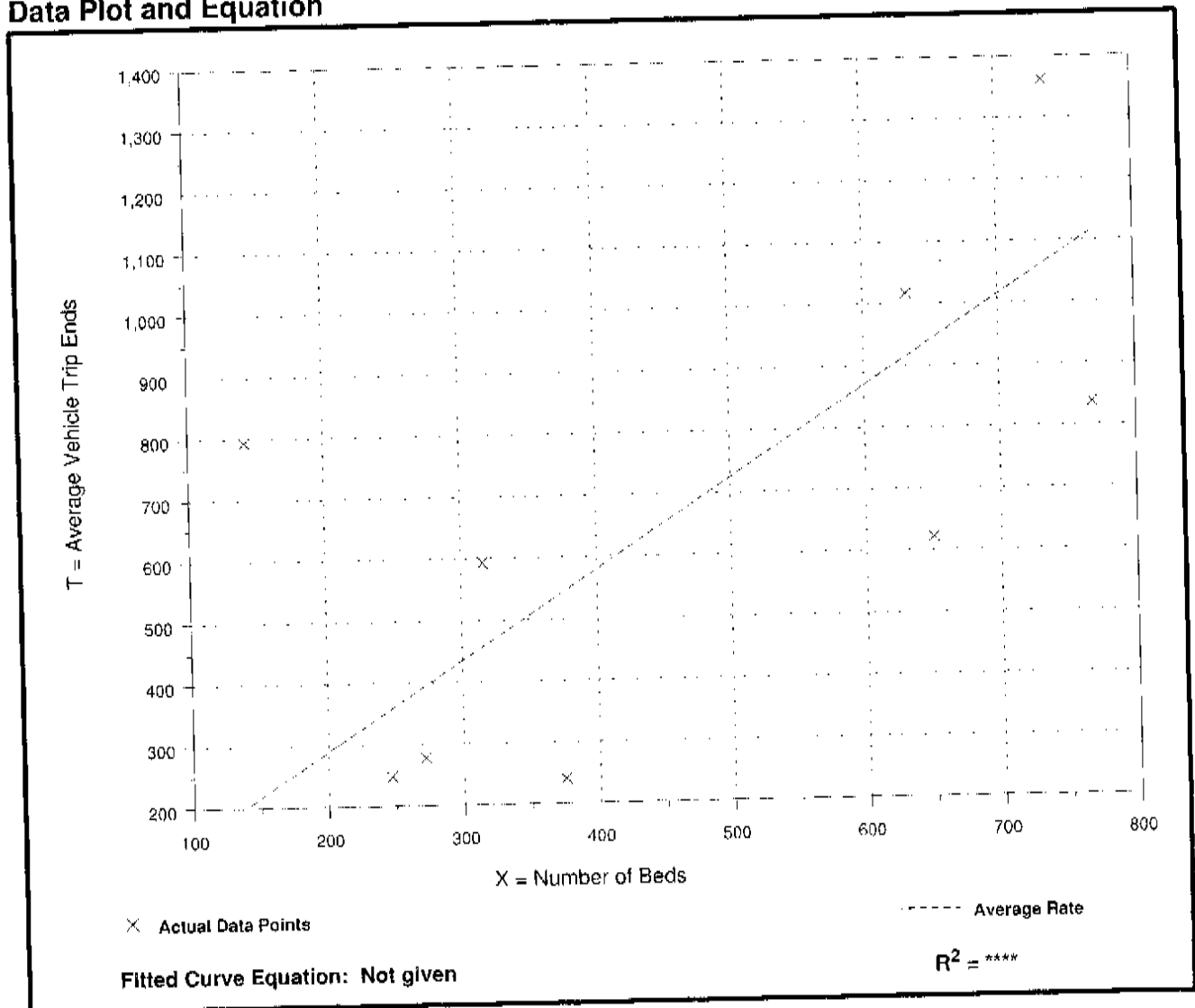
Average Vehicle Trip Ends vs: Beds
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 9
Average Number of Beds: 460
Directional Distribution: 69% entering, 31% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.45	0.64 - 5.59	1.49

Data Plot and Equation



Hospital (610)

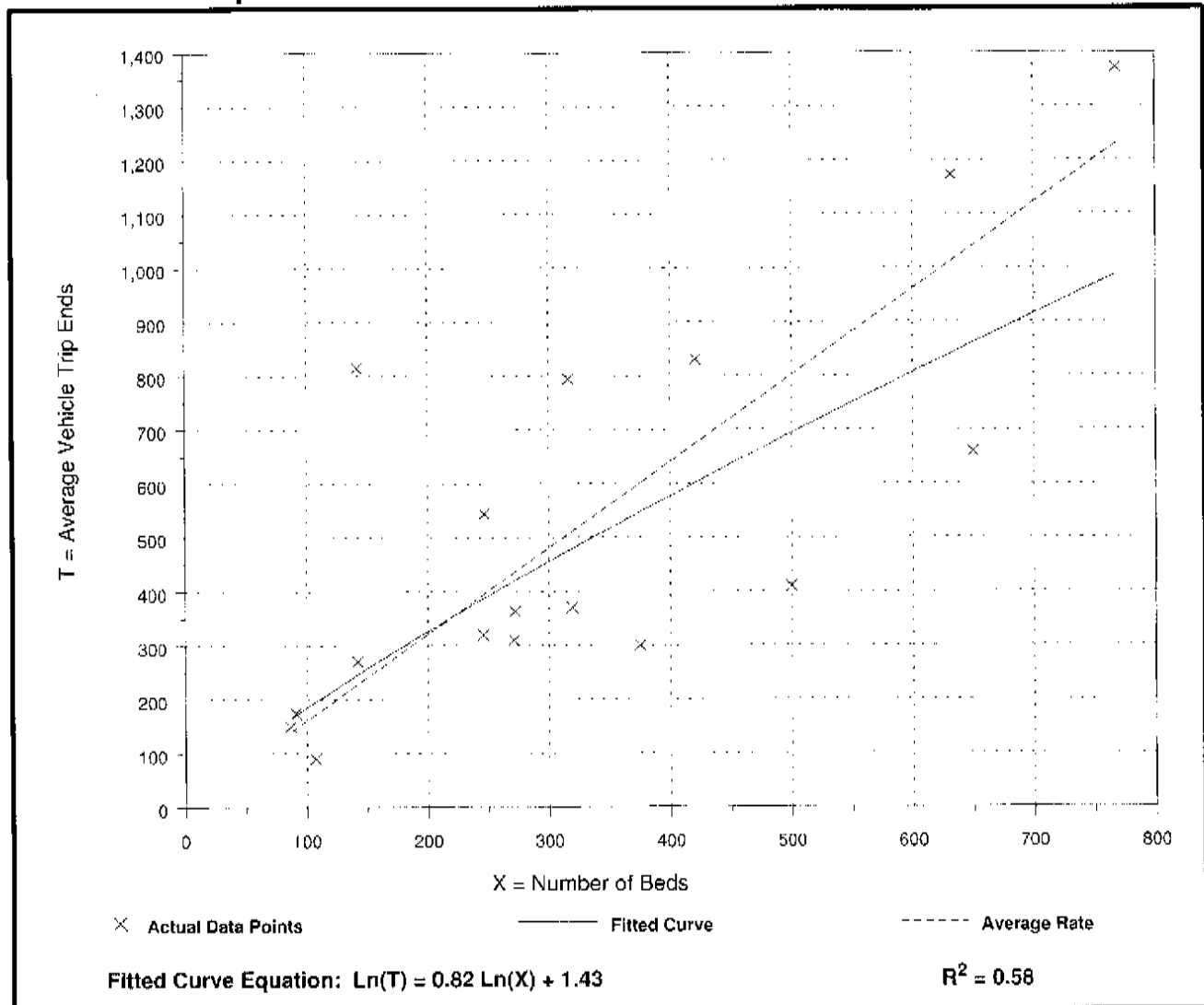
Average Vehicle Trip Ends vs: **Beds**
 On a: **Weekday,**
P.M. Peak Hour of Generator

Number of Studies: 17
 Average Number of Beds: 329
 Directional Distribution: 34% entering, 66% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.60	0.80 - 5.74	1.52

Data Plot and Equation



Hospital (610)

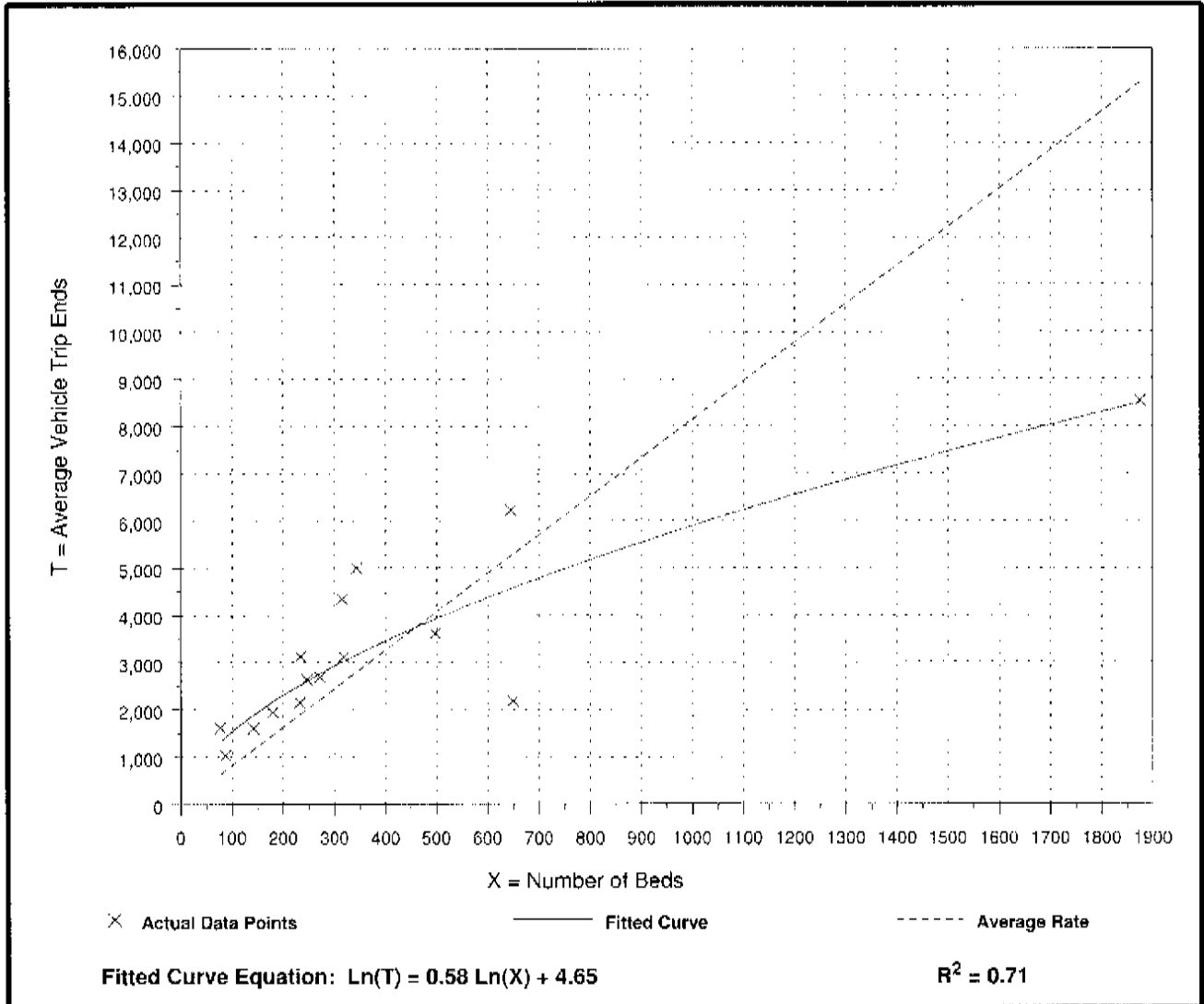
Average Vehicle Trip Ends vs: Beds
On a: Saturday

Number of Studies: 15
Average Number of Beds: 408
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
8.14	3.35 - 21.04	4.80

Data Plot and Equation



Hospital (610)

Average Vehicle Trip Ends vs: **Beds**
 On a: **Saturday,**
Peak Hour of Generator

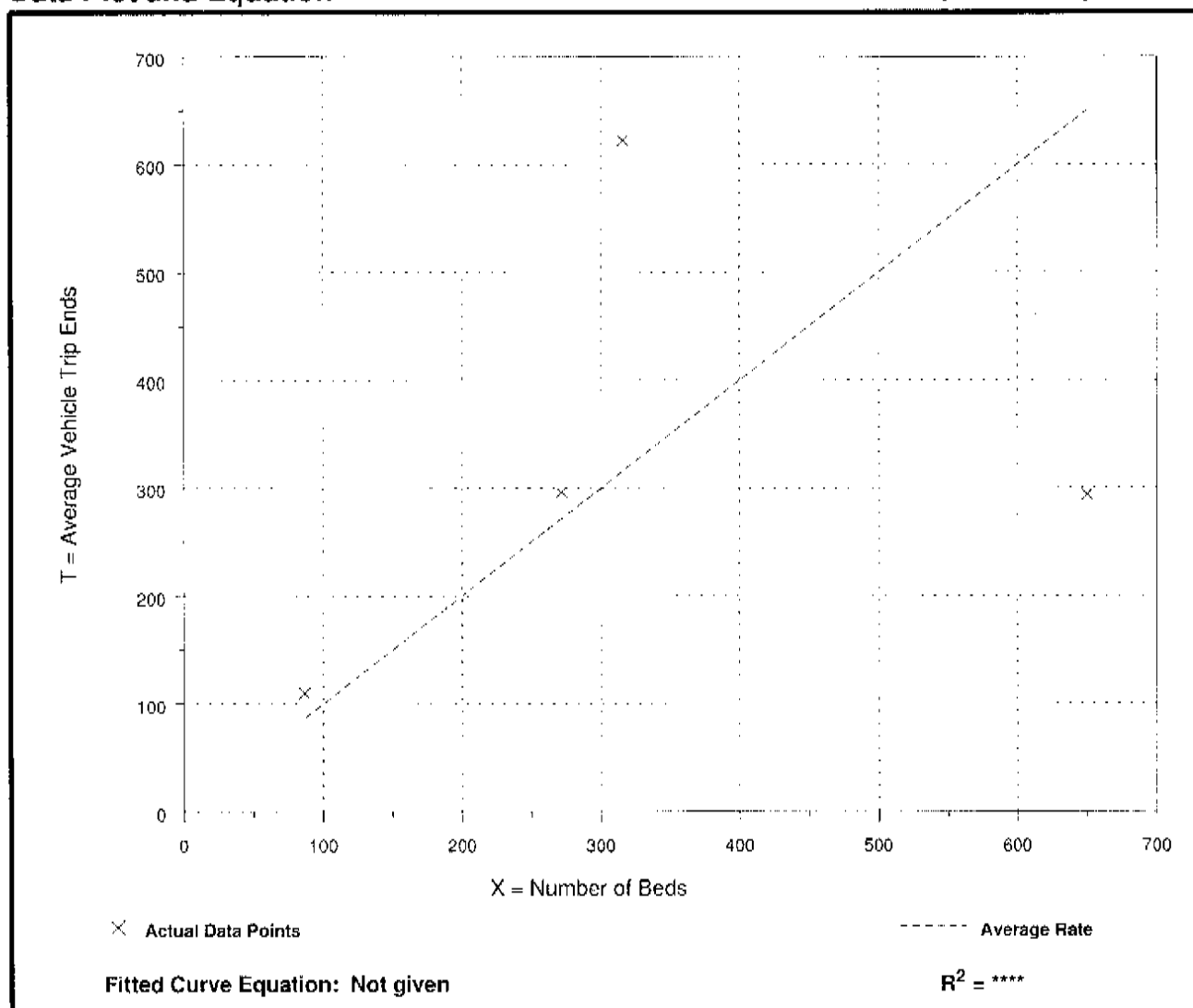
Number of Studies: 4
 Average Number of Beds: 331
 Directional Distribution: 47% entering, 53% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.00	0.45 - 1.97	1.17

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Hospital (610)

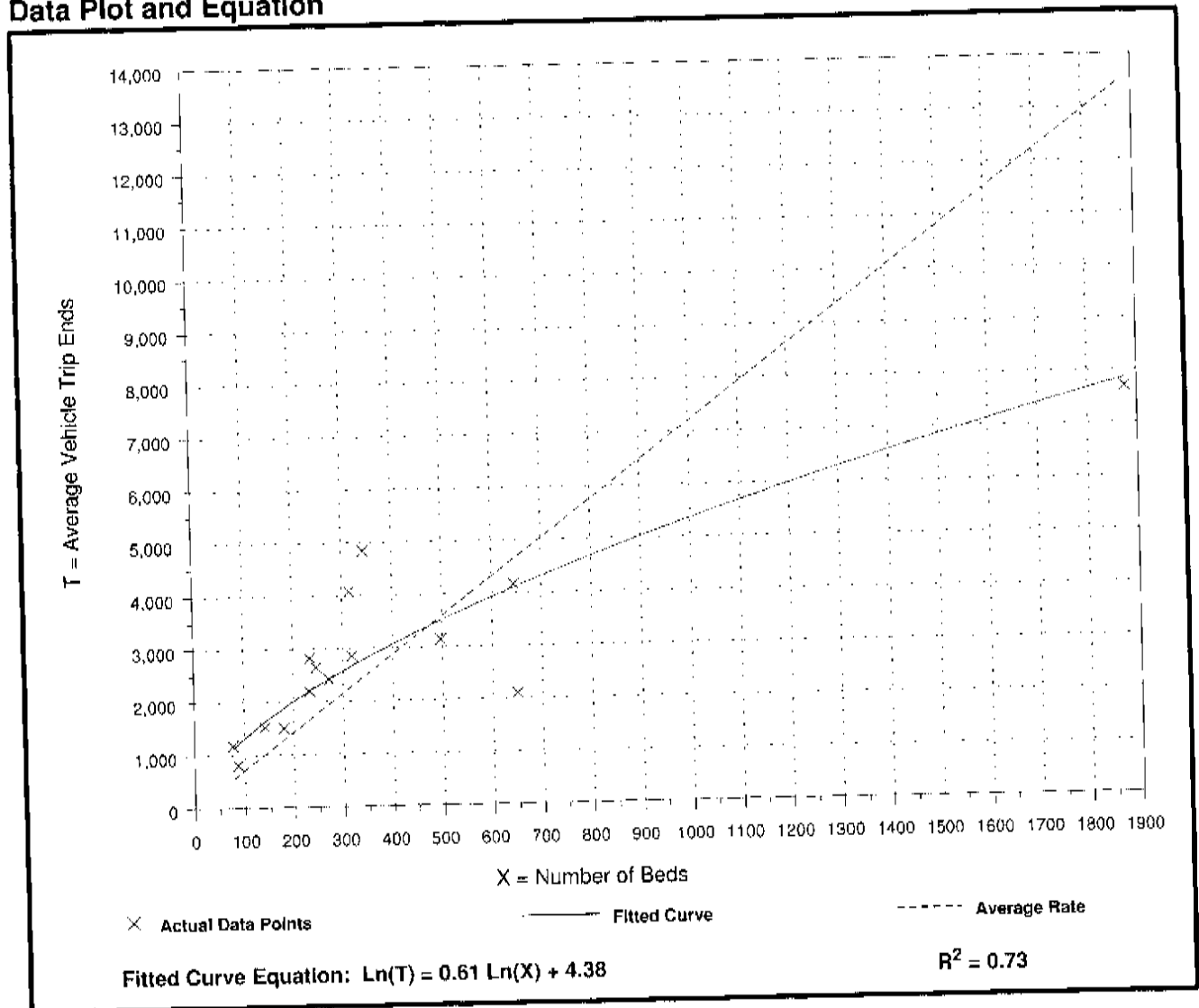
Average Vehicle Trip Ends vs: Beds
On a: **Sunday**

Number of Studies: 15
Average Number of Beds: 408
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
7.19	3.22 - 15.32	4.40

Data Plot and Equation



Hospital (610)

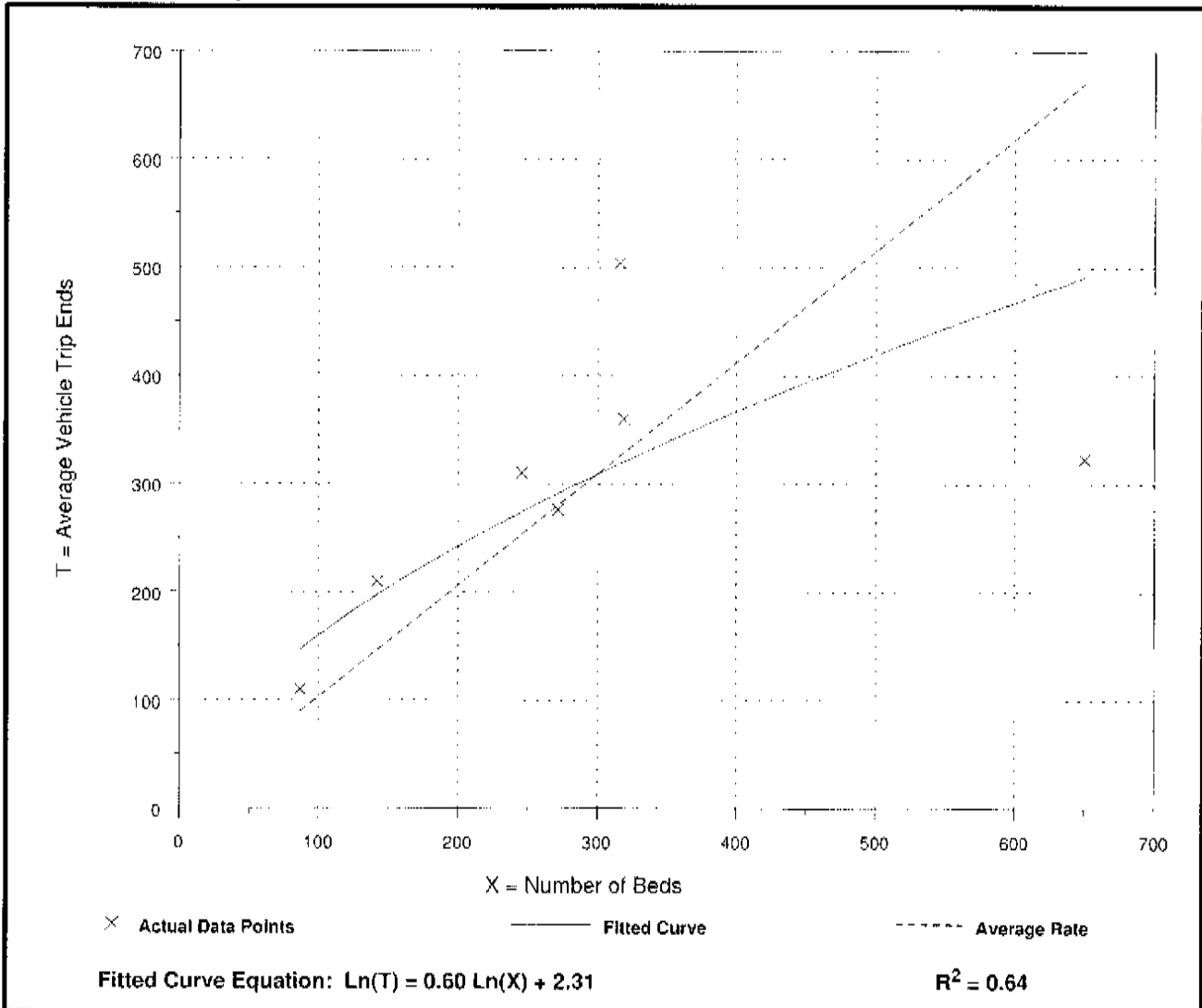
Average Vehicle Trip Ends vs: Beds
On a: Sunday,
Peak Hour of Generator

Number of Studies: 7
Average Number of Beds: 290
Directional Distribution: 45% entering, 55% exiting

Trip Generation per Bed

Average Rate	Range of Rates	Standard Deviation
1.03	0.50 - 1.59	1.09

Data Plot and Equation



Land Use: 720

Medical-Dental Office Building

Description

A medical-dental office building is a facility that provides diagnoses and outpatient care on a routine basis but is unable to provide prolonged in-house medical and surgical care. One or more private physicians or dentists generally operate this type of facility. Clinic (Land Use 630) is a related use.

Additional Data

The average vehicle occupancy for the six studies for which information was submitted was approximately 1.37 persons per automobile. The vehicle occupancy rates ranged from 1.32 to 1.44 persons per automobile.

The sites were surveyed between the 1980s and the 2000s throughout the United States.

Source Numbers

8, 19, 98, 104, 109, 120, 157, 184, 209, 211, 253, 287, 294, 295, 304, 357, 384, 404, 407, 423, 444, 509, 601, 715

Medical-Dental Office Building (720)

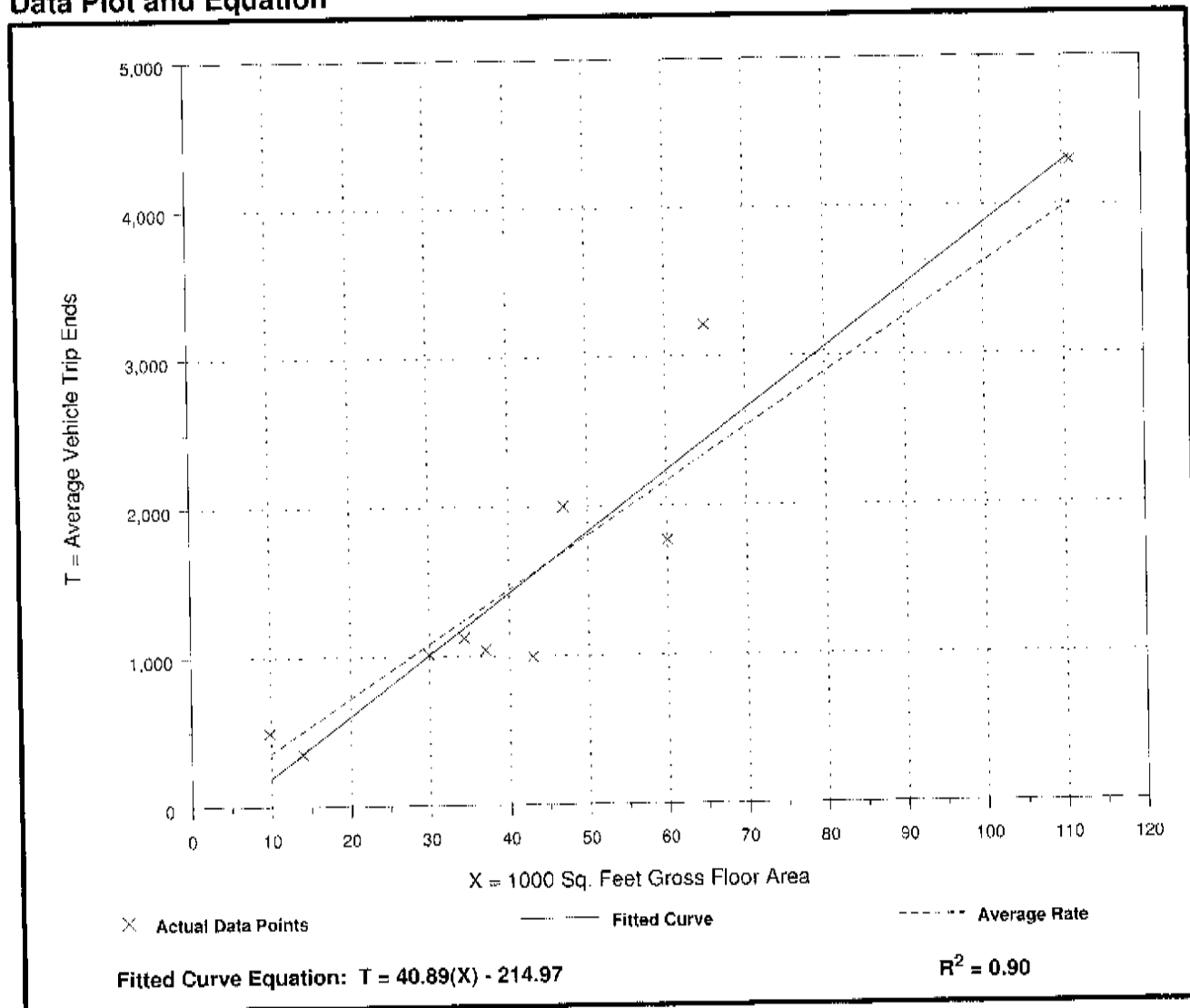
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: **Weekday**

Number of Studies: 10
Average 1000 Sq. Feet GFA: 45
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
36.13	23.16 - 50.51	10.18

Data Plot and Equation



Medical-Dental Office Building (720)

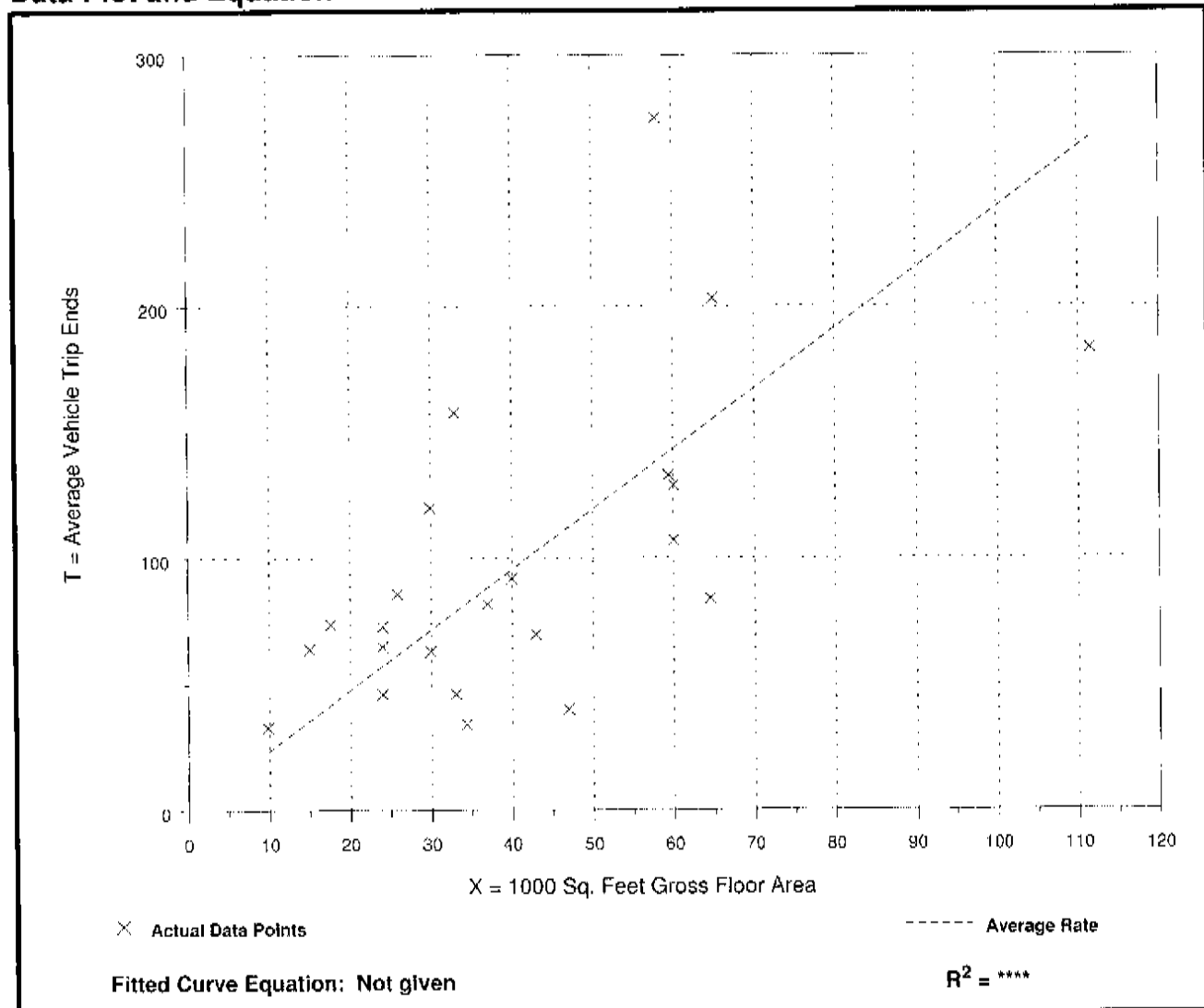
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 23
Average 1000 Sq. Feet GFA: 41
Directional Distribution: 79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.39	0.85 - 4.79	1.89

Data Plot and Equation



Medical-Dental Office Building (720)

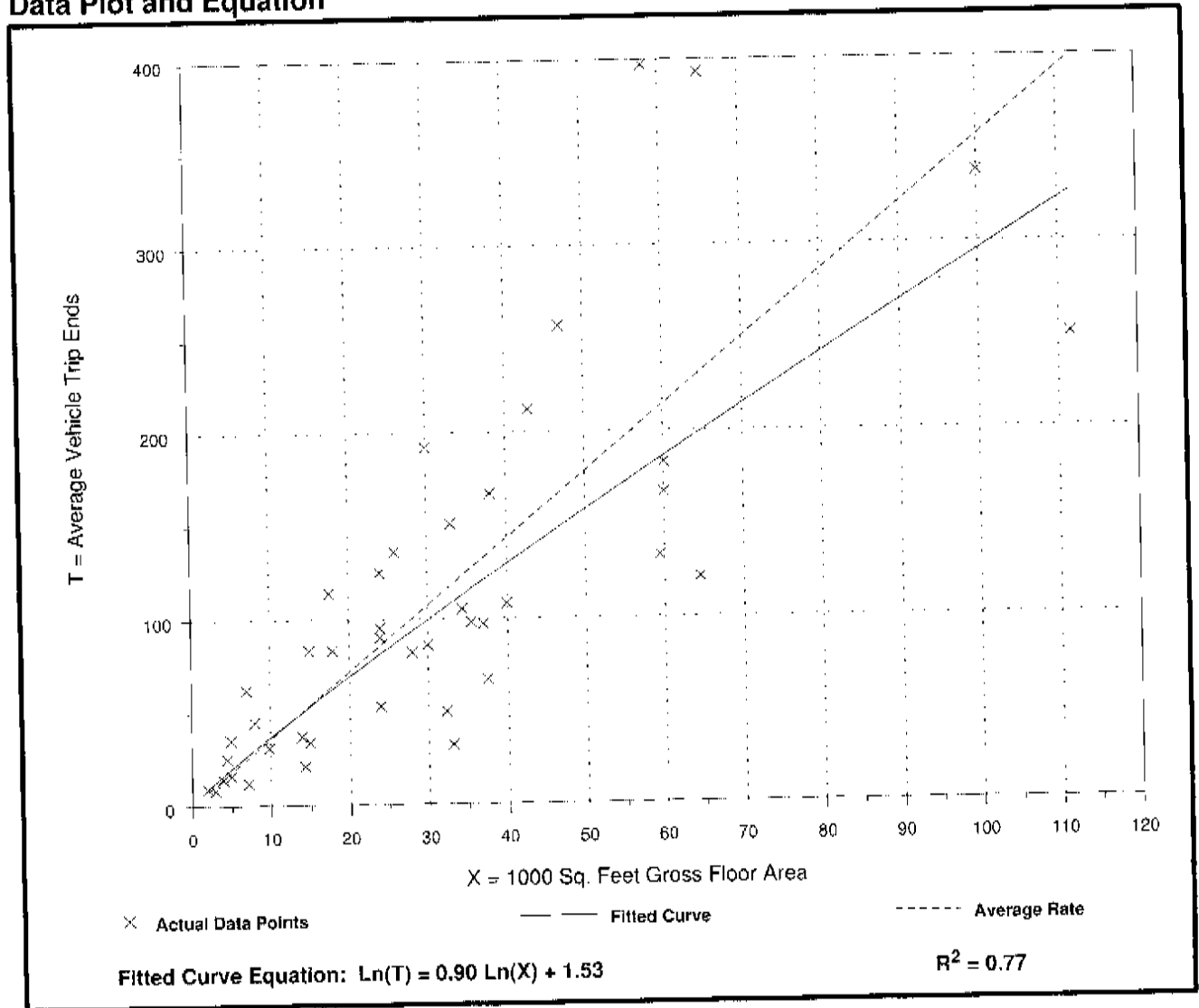
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.

Number of Studies: 43
 Average 1000 Sq. Feet GFA: 31
 Directional Distribution: 28% entering, 72% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.57	0.97 - 8.86	2.47

Data Plot and Equation



Medical-Dental Office Building (720)

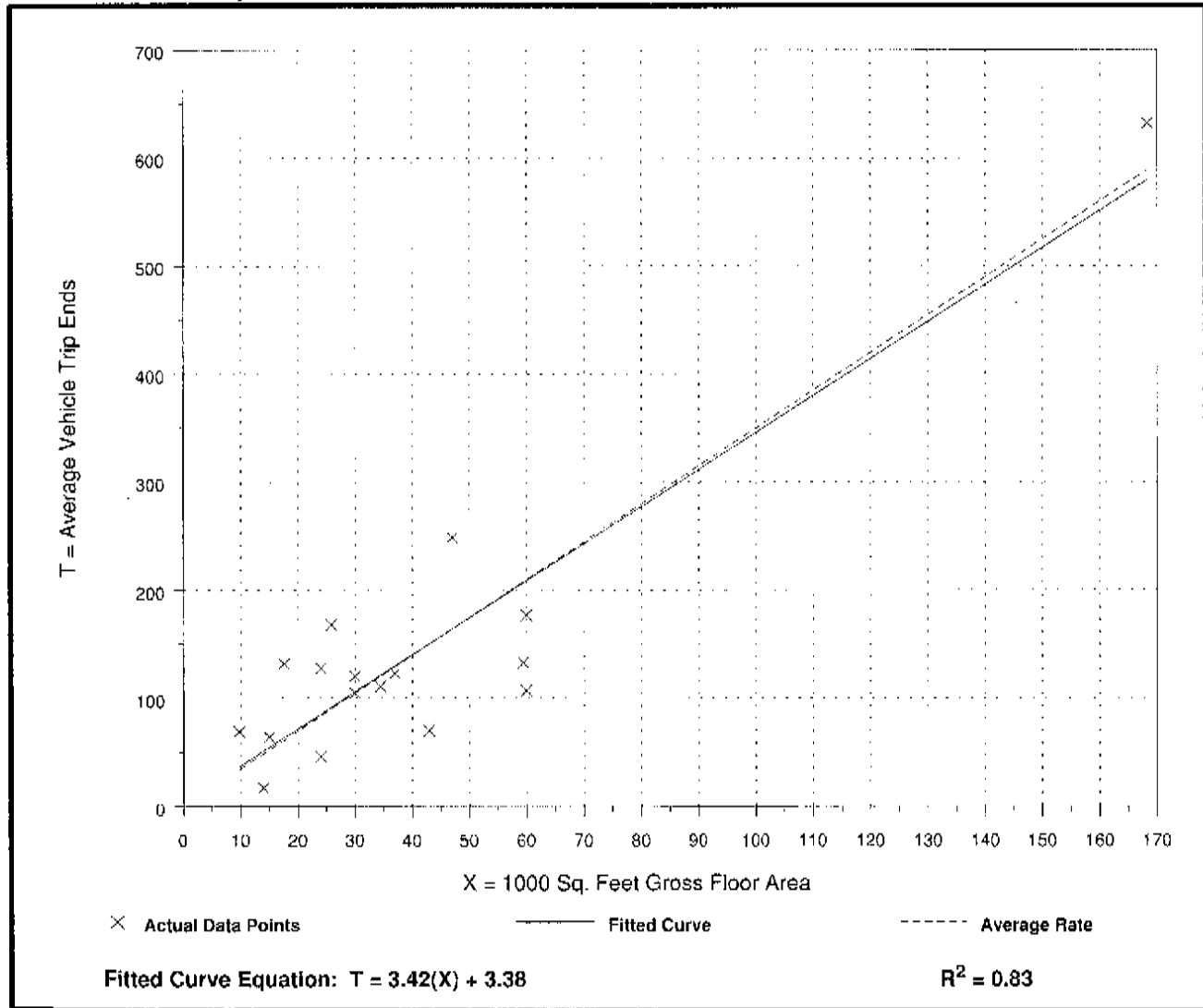
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
A.M. Peak Hour of Generator

Number of Studies: 17
 Average 1000 Sq. Feet GFA: 41
 Directional Distribution: 67% entering, 33% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.50	1.21 - 7.49	2.35

Data Plot and Equation



Medical-Dental Office Building (720)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
P.M. Peak Hour of Generator

Number of Studies: 22
Average 1000 Sq. Feet GFA: 33
Directional Distribution: 39% entering, 61% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
4.27	2.21 - 7.60	2.50

Data Plot and Equation

