Transportation System Plan

Union Transportation System Plan Volume II - Appendices

Union, Oregon

June 2014

Transportation System Plan

Union Transportation System Plan
Volume II - Appendices

Union, Oregon

Prepared for:
City of Union

Prepared By:
Kittelson & Associates, Inc.
101 Capitol Boulevard, Suite 301
Boise, ID 83702
(208) 338-2683

In Association with:
ALTA Planning + Design
711 SE Grand Avenue
Portland, Oregon 97214
(503) 230-9862

Anderson Perry & Associates, Inc.
1901 N Fir / P.O. Box 1107
La Grande, Oregon 97850
(541) 963-8309

Siegel Planning Services, LLC
15450 Boones Ferry Road, #9-145
Lake Oswego, OR 97035
(503) 699-5850

June 2014

This project is partially funded by a grant from the Transportation and Growth Management ("TGM") Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Moving Ahead for Progress in the 21st Century (MAP-21), local government, and the State of Oregon funds.

TABLE OF CONTENTS

Section 1
Existing Conditions and Future Conditions Technical Memorandum

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

TECHNICAL MEMORANDUM #1

Union TSP Update

FINAL Existing Conditions and Future Conditions

Date: December 19, 2013 Project #: 13445.0

To: Sandra Patterson, City of Union
Cheryl Jarvis-Smith, Oregon Department of Transportation

From: Matt Hughart, AICP; and Jon Crisafi (KAI)
Matt Berkow and Drew Meisel (Alta Planning + Design)

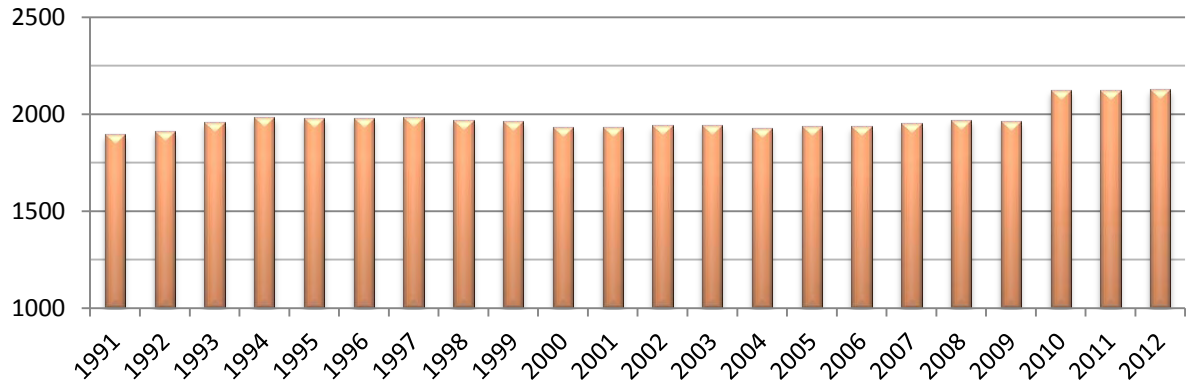
cc: Andy Lindsey, Anderson-Perry & Associates, Inc.

This memorandum provides an overview of the existing and future year 2034 multimodal transportation system within the Union urban growth boundary (UGB). The purpose of the existing conditions inventory and performance evaluation is to document the baseline transportation system within the Transportation System Plan (TSP) project area, which coincides with the UGB. This inventory and analysis is based on data obtained from the City of Union, Union County, Oregon Department of Transportation (ODOT), and field reviews by the project team.

The information contained in this memorandum is organized into a series of sections. The name and the first page of these sections are listed below.

POPULATION

The purpose of the population inventory is to identify existing, planned, and potential growth within the community. As shown in Exhibit 1, the population of Union has seen moderate levels of growth since 1990.



Source: U.S. Census

Exhibit 1 Union Population (1991-2012)

STREET SYSTEM AND TRAFFIC ANALYSIS

There are two state highways serving Union as well as a network of arterial and collector streets maintained by the City and/or County. An overview of the primary roadway facilities is summarized below followed by information on their characteristics and existing operational performance.

STREET SYSTEM OVERVIEW

Union is served by OR 237 (La Grande-Baker Highway) which runs directly north-south through Union serving as the primary arterial (Main Street) for the city and continues north to Cove (referred to as Cove Highway). Eventually OR 237 terminates in Island City, Oregon. OR 203 (Medical Springs Highway) begins further south on I-84 at Exit 298 and loops out to the east connecting Medical Springs to Union. Sharing OR 237 (Main Street) between Beakman Street and Bryan Street, OR 203 connects directly to the I-84 interchange at Exit 265 and La Grande.

Within Union, OR 203/237 serves as the primary arterial road and serves as an important commercial corridor. In addition to the state highway facilities that serve travel to, from, and within Union, there are also a number of arterial and collector streets that provide connectivity, mobility and access. The street system in Union is generally set up in a grid system, providing efficient circulation through the local street system and provides several route options for Union residents. The grid system is broken up in locations by the natural features, and large-lot developed or undeveloped parcels.

STREET SYSTEM CHARACTERISTICS

Within the Union urban area, roadways are generally classified as arterials, major collectors, minor collectors, or local streets.

- **Arterial Streets**: primary function is to accomodate intercity and regional traffic flow. In Union, the state highways are classified as arterials.
- **Major/Minor Collector Streets**: primary function is to collect and distribute traffic to/from arterials and local streets.
- **Local Streets**: primary function is to provide direct access to adjacent residential and agricultural lands.

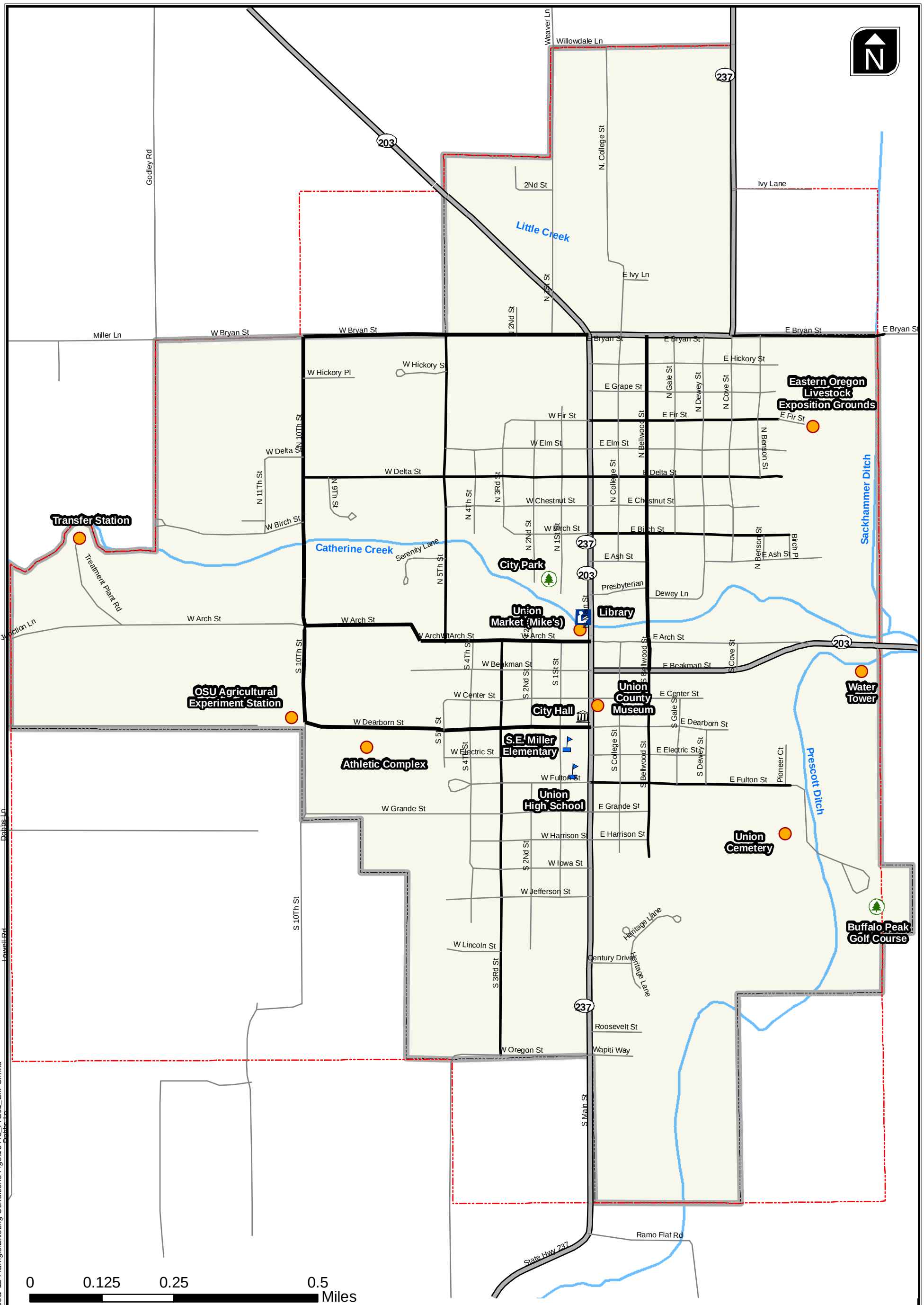
Table 1 and Figure 1 illustrate and summarize the current street characteristics within the urban growth boundary including roadway classifications, roadway jurisdiction, intersection characteristics (e.g. signal locations), and number of vehicle travel lanes.

Table 1 Street Classifications, Basic Number of Lanes, and Jurisdictional Responsibilities

Street	Functional Classification	Functional Classification Bounds[1]	Cross Section	Jurisdiction
OR 203 (La Grande-Baker Highway)[2]	ODOT - District Highway City - Arterial	city limits → Beakman Street	2 lanes	ODOT
OR 203 (Medical Springs Highway)	ODOT – District Highway City - Arterial	--	2 lanes	ODOT
OR 237 (Cove Highway) [2]	ODOT – District Highway City - Arterial	--	2 lanes	ODOT
OR 237 (La Grande-Baker Highway) [2]	ODOT – District Highway City - Arterial	Beakman Street → city limits	2 lanes	ODOT
Bellwood Street	Major Collector	--	2 lanes	City
10th Street	Major Collector	Bryan Street → Dearborn Street	2 lanes	City
Bryan Street	Major Collector	10th Street → Main Street	2 lanes	City
Arch Street	Major Collector	10th Street → Main Street	2 lanes	City
Dearborn Street	Major Collector	10th Street → Main Street	2 lanes	City
Bryan Street	Minor Collector	Cove Street → city limits	2 lanes	City
Fir Street	Minor Collector	Main Street → Benson Street	2 lanes	City
Delta Street	Minor Collector	10th Street → Benson Street	2 lanes	City
Fulton Street	Minor Collector	Main Street → end	2 lanes	City
Bellwood Street	Minor Collector	Beakman Street → Harrison Street	2 lanes	City
3rd Street	Minor Collector	Arch Street → Oregon Street	2 lanes	City
5th Street	Minor Collector	Bryan Street → Arch Street	2 lanes	City
Bellwood Street	Minor Collector	Beakman Street → Harrison Street	2 lanes	City

[1]Boundaries for the length of road designated as "collector" or higher functional class; "--" indicates entire length is same functional class

[2]ODOT designated Scenic Byway



Existing Functional Classification

UNION OREGON

Figure 1

TRAFFIC ANALYSIS

Traffic counts have been obtained and analyzed at a number of study intersections deemed critical for the TSP Update. This section describes the process and results of this analysis. *Appendix 1 contains the traffic count summary sheets provided by ODOT and Appendix 2 contains the operational analysis summary worksheets.*

Analysis Methodology and Performance Measures

All operations analyses described in this memorandum have been performed in accordance with the procedures in the 2010 *Highway Capacity Manual* (Reference 1).

All study intersections are located along highways owned and maintained by ODOT. Therefore, the *Oregon Highway Plan* (OHP, Reference 2) sets the operational performance targets for the study intersections. The OHP uses volume-to-capacity (v/c) ratio to assess performance for the critical movement at unsignalized intersections.

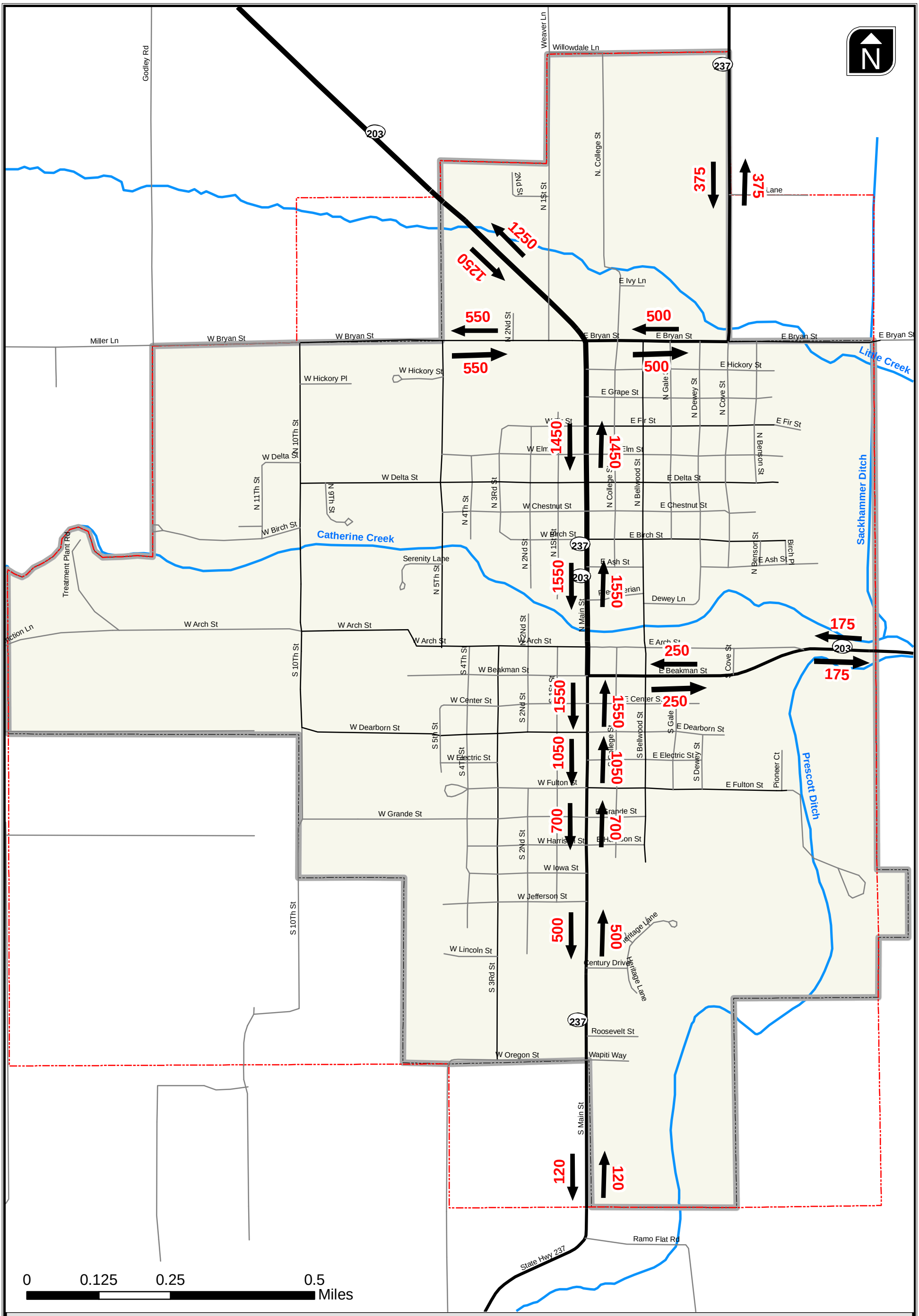
Table 2 shows the applicable intersection control and performance targets for each study intersection. All intersections fall under ODOT jurisdiction.

Table 2 Intersection Performance Targets

Intersection	Control	Performance Target
OR 237 (N Cove Hwy) & Cove Street	Two-Way Stop-Controlled	0.95 v/c
OR 203/237 (Main Street) & OR 237 (Bryan Street)	Two-Way Stop-Controlled	0.95 v/c
OR 203/237 (Main Street) & OR 203 (Beakman Street)	Two-Way Stop-Controlled	0.95 v/c
OR 237 (Main Street) & Dearborn Street	Two-Way Stop-Controlled	0.95 v/c
OR 237 (Main Street) & Fulton Street	Two-Way Stop-Controlled	0.95 v/c
OR 237 (Main Street) & Oregon Street	Two-Way Stop-Controlled	0.95 v/c

Traffic Volumes

Intersection turning movement counts have been provided by ODOT at each of the study intersections to assess the operational performance and characteristics within the study area. These counts were conducted on mid-week days in June 2013. Turning movement counts at each intersection were recorded from 2:00 p.m. to 6:00 p.m. Figure 2 shows the daily traffic volumes along the study roadways provided by the ODOT state highway traffic volume tables.



###

Daily Volume

Existing Daily Volumes

UNION OREGON

Figure

2

H:\proffile\13445 - Union TSP Update and Goal 12 Plan\gis\Existing Conditions Figs\13445_FIG02_ExVols.mxd

The weekday p.m. peak hour is analyzed for the purposes of assessing traffic operations at the study intersections. Based on the counts provided by ODOT, the system peak hour is 3:45 p.m. to 4:45 p.m. Where appropriate, the turning movement volumes at each study intersection were balanced during this hour.

Seasonal Adjustment

Following the methodology outlined by ODOT's Analysis Procedures Manual (APM, Reference 3), a seasonal adjustment factor was applied to the June traffic counts collected for the existing conditions analysis in order to estimate 30th highest hour volumes. There is not an automatic traffic recorder (ATR) station on a section of OR 203/237 in the vicinity of the study area that exhibits similar characteristics to the highways within the study area, therefore the Seasonal Trend Table method was selected as the most appropriate seasonal adjustment methodology.

Seasonal Trend Table Method

The seasonal trend table was constructed by averaging seasonal trend groupings from the ATR Characteristic Table for locations when an ATR is not nearby or in a representative area. The latest seasonal trend table is from 2012. The seasonal adjustment factor is then calculated by dividing the count date seasonal factor by the peak period seasonal factor for the seasonal trend of the area. As per recommendations from ODOT's Transportation Planning Analysis Unit (TPAU), the seasonal trends for the highways should be analyzed as such:

- OR 203/237 (LaGrande-Baker Highway): Summer Trend
- Cove Highway: Summer<2500 ADT Trend

Table 3 shows the factors from the seasonal trend table for these characteristics.

Table 3 Seasonal Adjustment Factors

Highway	Trend	Count Date Factor (June)	Peak Period Seasonal	Seasonal Adjustment Factor
OR 203/237 (LaGrande-Baker Highway)	Summer Trend	0.9006	0.8404	1.07
Cove Highway	Summer < 2500 ADT Trend	0.8857	0.8421	1.05

NOTE: Seasonal Adjustment Factor is calculated by dividing CDSF by PPSF; SAF = CDSF/PPSF

CDSF = Count Date Seasonal Factor

PPSF = Peak Period Seasonal Factor

These seasonal adjustment factors will be applied to the OR 203/237 and Cove Highway appropriately through volume at the study intersections to appropriate adjust traffic counts for the 'worst case' based on seasonal variations of traffic volumes.

Existing Traffic Operations Analysis Results

Level-of-service (LOS), volume-to-capacity (v/c) ratios and 95th percentile queue lengths were calculated for each of the study intersections identified for the Union TSP update. The following sections present the results of these analyses and discuss which intersections do not meet the applicable standards.

Intersection Delay and Capacity Analysis

Figure 3 illustrates the study intersection locations, lane configurations and traffic control devices while Figure 4 summarizes the existing intersection operations. All study intersections are evaluated against OHP standards for signalized and non-signalized intersections. Based on these standards, all intersection operate well within acceptable operational performance targets. *Appendix 2 details the results of the operations analysis*.

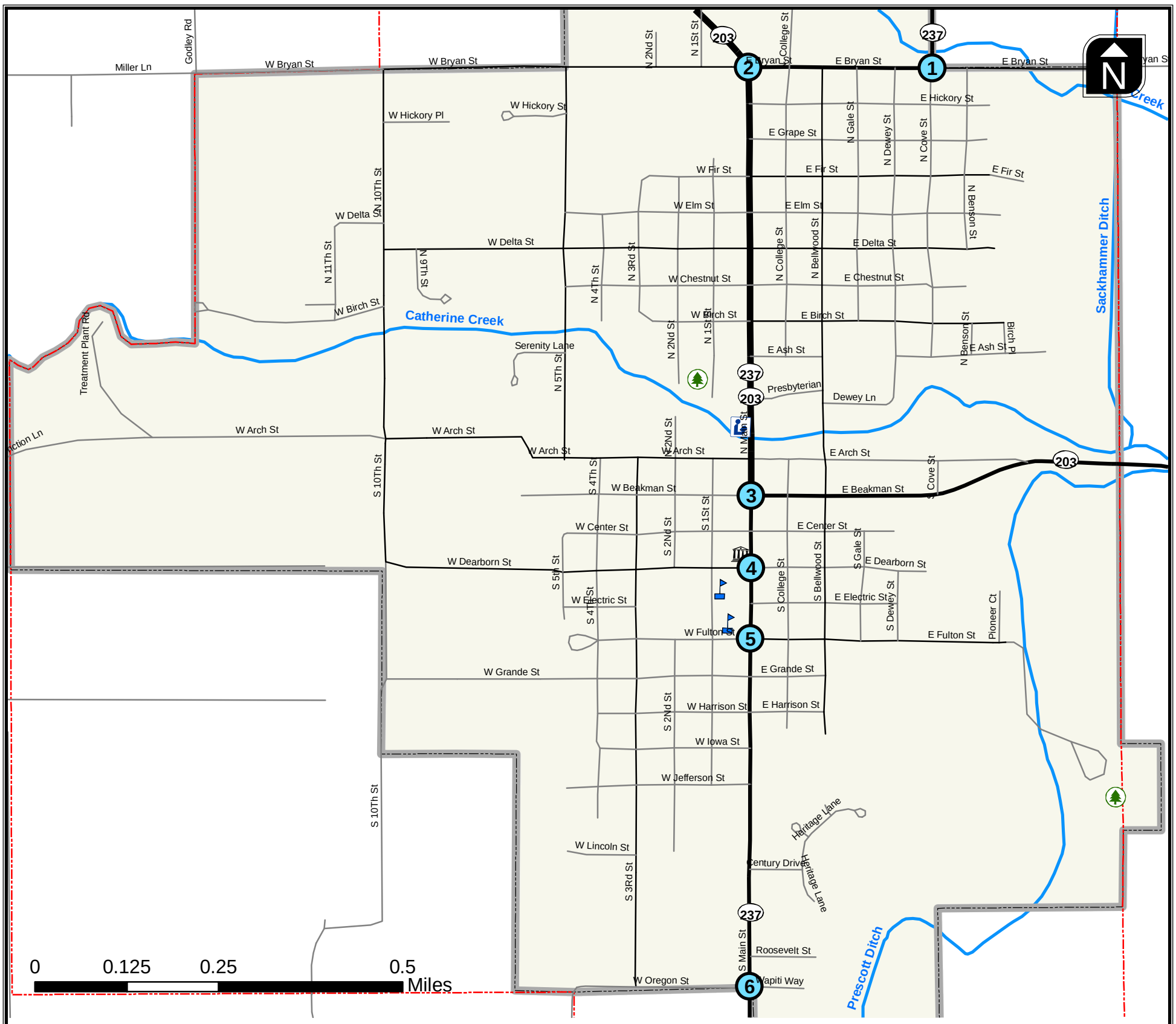
Intersection Queuing Analysis

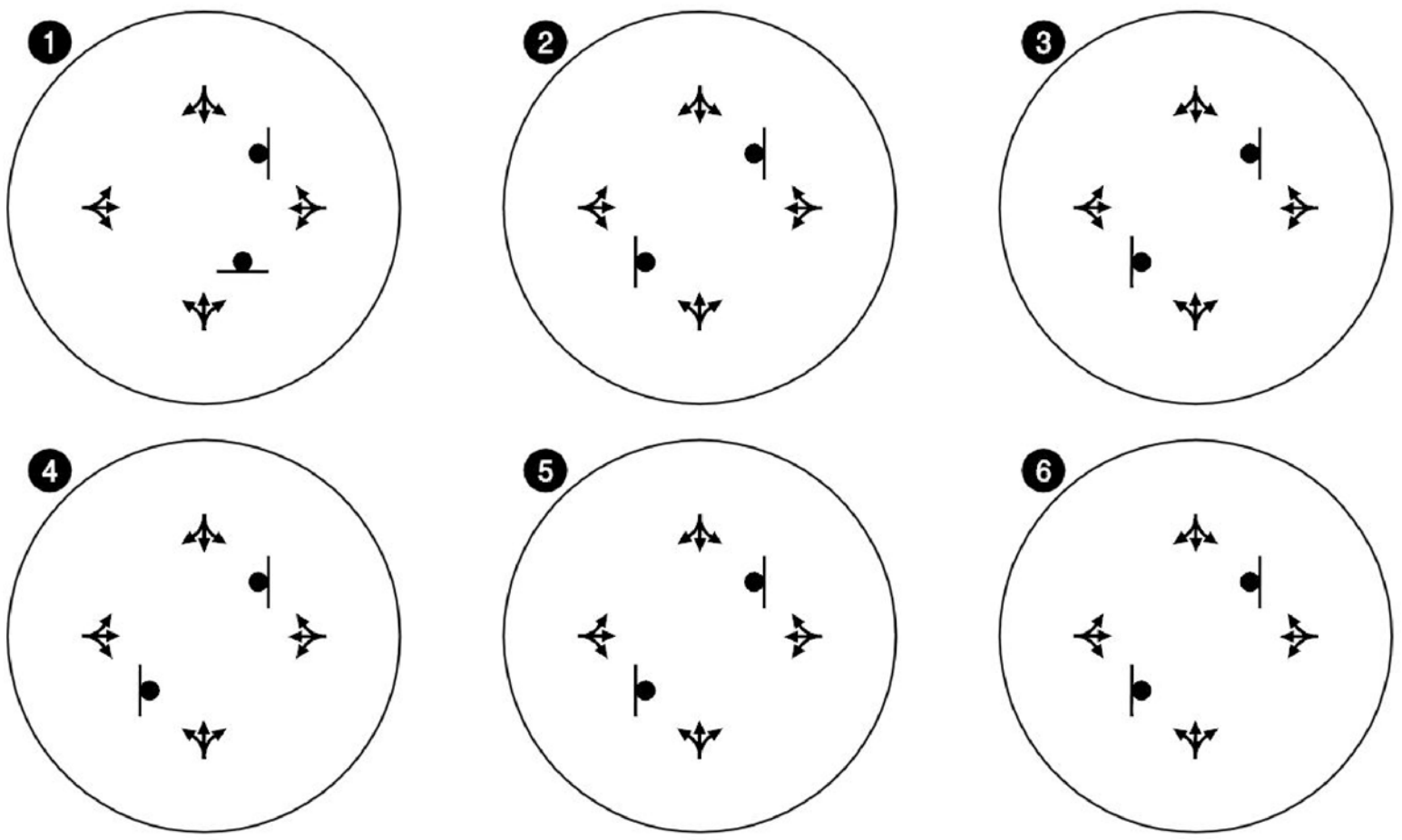
Queuing analysis is performed at the study intersections. The 95th-percentile queue length reported are from those calculated using Synchro 8 software, which implements the *2010 Highway Capacity Manual* methodology.

There are six intersections included in the analysis. The queuing analysis shows that all intersections have minimal queuing over the peak hour, well below capacity of the existing lane configurations. *Appendix 2 contains the results of the queuing analysis for all of the study intersections.*

Existing Conditions Operations Summary

- All six study intersections are found to meet operational performance standards under existing conditions.
- All six study intersections are found to have no problems with queuing for all movements under existing conditions.





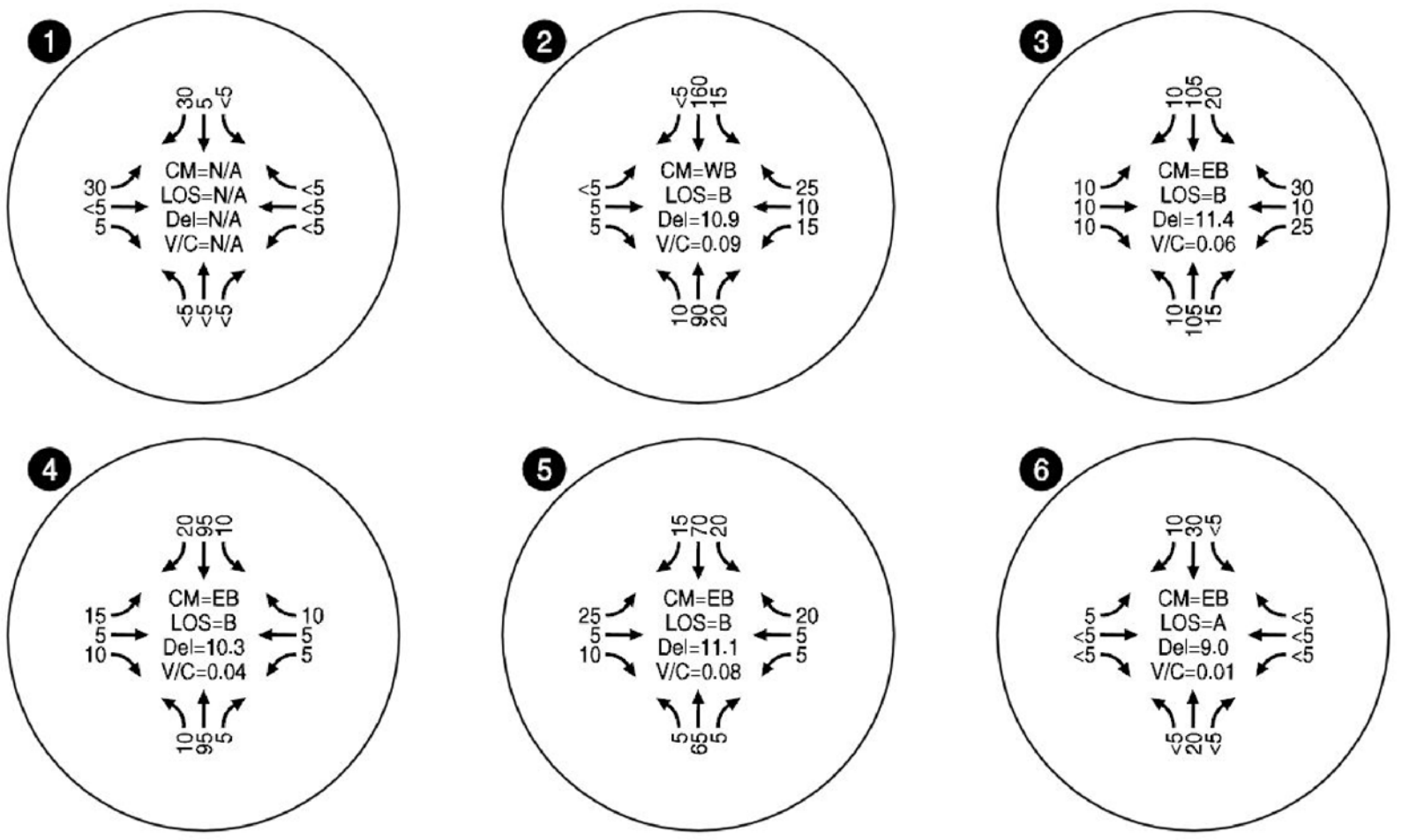
Study Intersection
City Hall
Library
Park
School
Arterial
Major Collector
Collector
Local
Union City Limits
Union UGB

Existing Lane Configurations and Traffic Control Devices

UNION OREGON

Figure 3

H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\Existing Conditions Figs\13445_FIG03_ExLaneConfig.mxd



Study Intersection
Arterial
Major Collector
Collector
Local
Union City Limits
Union UGB
City Hall
Library
Park
School

Existing Intersection Volumes and Operations

UNION OREGON

Figure 4

NATURAL AND CULTURAL RESOURCES

Floodways/Floodplains

The Federal Emergency Management Agency (FEMA) defines and designates floodways and floodplains. Flood zones are geographic areas that FEMA has defined according to varying levels of floos risk. Within Union, most properties bounding Catherine Creek and Little Creek are considered higher risk areas that have a 1% chance of flooding and a 26% change of flooding over the life of a 30-year mortgage.

Wetlands

The National Wetlands Inventory (NWI) database was reviewed to identify the presence of any wetlands within the City limits. According to the database, only a few pockets of isolated wetlands exist with the City limits. These areas include:

- A 2.44-acre freshwater emergent wetland located in the southwestern portion of the City near where Oregon Street and 10th Street would intersect if both roadways were extended west and south.
- A 0.85-acre freshwater pond located near the southeast quadrant of the Main Street/Wapait Way intersection.
- A 1.27-acre freshwater forested/shrub wetland located west of the City's sewer/wastewater treatment plant.
- A 0.42-acre freshwater emergent wetland located south of Beakman Street near the Cove Street intersection.
- A 0.28-acre freshwater emergent wetland located near the east of Hickory Street north of the Eastern Oregon Livestock Exposition Grounds.

Historic Resources

The State Historic Preservation Office database was consulted to identify any historical resources located within the City of Union. Based on this review, there are 48 historic resources located within the City. A listing of these resources is located in Appendix 6.

Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964 and associated authorities prohibit discrimination on the basis of race, color, national orgin, language, income, gender, and age. As an important authority related to Title VI, the Federal Executive Order on Environmental Justice provides the following three guilding principles for programs and projects receiving federal funding:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

Because ODOT receives federal funding for its projects and programs, the agency established a Title VI program to address nondiscrimination in all of its functions, including transportation planning. ODOT's 2002 Title VI Plan commits the agency to the following activities related to outreach and analysis:

- Make special efforts to contact and involve minority and low income groups in conducting planning studies and formal hearings held on transportation improvement plans and programs.
- Collect and analyze data on the impact of plans on minority and low income populations.

In order to conduct these activities, populations protected by Title VI and related authorities must first be identified.

Race

The percentages of non-white population in the state, county, and City are presented in the following table:

Location	% Non-White
Oregon	16.4%
Union County	4.7%
City of Union	4.4%
Source: US Census Bureau, 2010 100% data	

The non-white population percentage is below the state average for Union County and City of Union. Based on 2010 Census data, American Indians make up the majority of the non-white population.

Income

The percentages of households in poverty in the state and county are presented in the following Table:

Location	% Below Poverty Level
Oregon	14%
Union County	10.7%
City of Union	7.1%
Source: US Census Bureau, 2010 100% data	

As shown in the table, approximately 7.1% of the City of Union is below the poverty level, which is lower than the state and county-wide average.

Age

The percentages of residents under 18 years old and over 65 years old in the state and county are presented in the following Table.

Location	% Under 18 Years Old	% Over 65 Years Old
Oregon	22.6%	23.4%
Union County	22.5%	16.7%
City of Union	25.9%	17.6%
Source: US Census Bureau, 2010 100% data		

As shown in the table, the population under 18 years old in Union County and City of Union is roughly equivalent the state-wide average. However, the percentage of population over 65 is lower in Union County and City of Union than the statewide average.

Gender

The percentages of female residents in the state, county, and City are presented in the following Table:

Location	% Female
Oregon	50.5%
Union County	50.8%
City of Union	50.8%
Source: US Census Bureau, 2010 100% data	

FUTURE TRAFFIC OPERATIONS ANALYSIS

Future growth in traffic occurs through two primary means: growth of regional through traffic and land use development within the surrounding area.

2034 Traffic Volume Forecast

Oregon's Transportation Planning Rule (TPR) requires communities to develop a 20-year plan to support the transportation system needs. The City of Union anticipates completing and adopting the TSP update in 2014, thus the year 2034 is an appropriate forecast horizon year.

The year 2034 traffic volumes were developed according to the Historical Trends methodology described in the ODOT Analysis Procedure Manual (APM – Reference 3). A summary of the traffic volume projection process is presented below.

Historical Trends Analysis

The historical trends method uses traffic volumes from previous years to project future volumes. This method assumes that the future growth trend will be similar to the historical trend. It is used mainly in rural or small urban areas where significant growth is not anticipated. Current and future year traffic volumes are available in the Future Volumes Table on the ODOT website.

Traffic data for Union were compiled on state routes OR 203 (La Grande-Baker Highway and Cove Highway) and OR 237 (La Grande-Baker Highway and Medical Springs Highway). Future volumes are shown in Table 4 taken directly from ODOT's Future Volume Table.

Table 4 State Highway Growth Calculations

Hwy #	Milepost	Description	2010	2032	RSQ[1]	Yearly Growth %
OR 237/OR203 (La Grande-Baker Highway)						
66	15.58	North city limits of Union	2200	2800	0.3891	1.36%
66	15.88	0.05 mile northwest of Cove Highway (OR237)	2300	2700	0.0378	0.87%
66	15.95	0.02 mile south of Cove Highway (OR237)	2700	3200	0.3715	0.93%
66	16.10	0.02 mile south of Fir Street	2700	3200	0.2775	0.93%
66	16.49	0.02 mile north of Medical Springs Highway (OR203)	2900	3000	0.0858	0.17%
66	16.53	0.02 mile south of Medical Springs Highway (OR203)	2800	3000	0.0005	0.36%
66	16.63	0.02 mile south of Dearborn Street	2000	2600	0.4349	1.50%
66	16.73	0.02 mile south of Fulton Street	1300	1600	0.1002	1.15%
66	16.88	0.02 mile south of Iowa Street	920	1000	0.0014	0.43%

Hwy #	Milepost	Description	2010	2032	RSQ[1]	Yearly Growth %
66	17.44	0.04 mile west of Ramo Flat Road	390	400	0.7658	0.13%
OR 237 (Medical Spring Highway)						
340	0.55	East city limits of Union	350	430	0.0703	1.14%
OR 203 (Cove Highway)						
342	21.81	0.02 mile north of Bryan Avenue	760	790	0.0406	0.20%
342	21.85	0.02 mile west of Cove Street	1000	1100	0.0870	0.50%
342	22.05	0.02 mile east of La Grande-Baker Highway (OR203)	1100	1300	0.4819	0.91%

[1]RSQ = Root Mean Square

The historical trend methodology recommends using only predictions with R-squared values greater than 0.75, although R-squared values greater than 0.5 are acceptable is nothing else is available. As shown in Table 4, there is only one R-squared value greater than 0.5 (along La Grand-Baker Highway, 0.04 miles west of Ramo Flat Road) which is located just outside the urban growth boundary. This location suggests growth along La-Grand Baker Highway will grow annually at about 0.13-percent. Although the remaining R-squared values are for each highway are below the 0.5 threshold, most suggest a higher growth rate. Because of these circumstances, an average of all yearly growth factors were taken and found to be an annual growth of 0.75-percent. Considering the magnitude of this growth and the existing traffic volumes, the relative impact to the traffic network is minimal.

Household and Employment Growth

The 2034 traffic volume forecast also needs to reflect anticipated employment and household growth in Union. Growth estimates were developed based on a review of existing land use, zoning, and discussion with city staff.

Household Growth

Within the past eight years, there have been a total of 25 new homes constructed. Projected estimates are that there will be approximately 65 new homes built within the next 20 years. Based on available land and direction provided by City staff, the locations of these new homes are most likely to occur in the following areas:

- Northwest section of town (near N. 10th Street, W. Hickory Place, W. Bryan Street)
- Within the new subdivision along Century Drive
- South end of town

There is also potential for some minor infill around the city.

Employment Growth

The city of Union has been seeking light industrial development to grow employment. Currently, the city zoning has industrial development permissible to the west of 5th Street to the west city limits and bounded to the north by W. Arch Street/Union Junction Lane and to the south by W. Dearborn Street. It is intended that upon completion of the TSP and other unrelated planning efforts, the City will embark on a process to potentially modify the zoning for the area bounded between W. Arch Street, 5th Street, W. Dearborn Street, and S. 10th Street to accommodate development of a large athletic complex. The industrial zone will then potentially be moved to the north along La Grand-Baker Highway to provide more direct highway access for industrial use. For the purposes of the TSP update, this potential modification can not legally and was not included in the future growth assumptions.

Traffic Analysis Zones

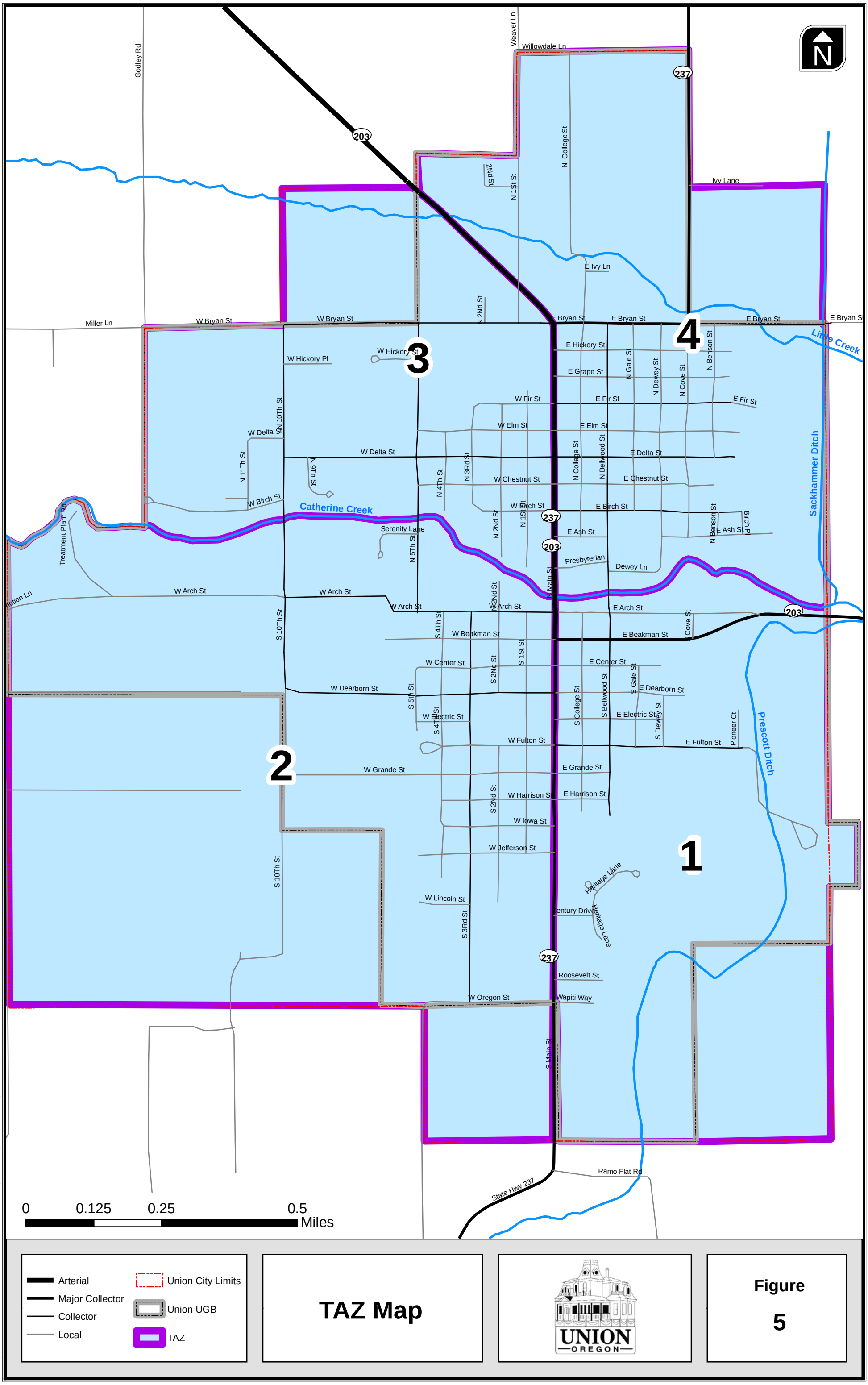
Projected housing and employment growth was assigned to the traffic network according to Traffic Analysis Zones (TAZs) established for the project to evaluate anticipated growth in the City. The TAZ boundaries are aggregate areas that have common access to major transportation facilities and similar land use patterns. For Union, the city is most easily divided into quadrants using Main Street as the east/west divide and Catherine Creek as the north/south divide. Figure 5 shows the TAZs. The household and employment forecasts for each TAZ are summarized in Table 5.

Table 5 2034 Population and Employment Growth by TAZ

	TAZ			
	1	2	3	4
Growth Sector	South East	South West	North West	North East
Single Family Housing (# of homes)	33	6	20	6
Industrial (# of employees)	0	35	0	0

Trip Generation

Trip generation estimates reflecting the anticipated growth shown in Table 6 were prepared based on data published in the standard reference manual, *Trip Generation Manual, 9th Edition* published by the Institute of Transportation Engineers (ITE) (Reference 4). *Details regarding the land use assumptions are presented in Appendix 3.* The values shown in Table 6 were rounded to the nearest five trips.



Arterial
Major Collector
Collector
Local
Union City Limits
Union UGB
TAZ

TAZ Map

UNION OREGON

Figure 5

Table 6 2034 Growth Trip Generation Estimate, Weekday PM Peak Hour

TAZ	Housing			Employment			Total		
	In	Out	Total	In	Out	Total	In	Out	Total
1	25	15	40	0	0	0	25	15	40
2	5	5	10	5	20	25	10	25	35
3	15	10	25	0	0	0	15	10	25
4	5	5	10	0	0	0	5	5	10
Area-wide	***50***	***35***	***85***	***5***	***20***	***25***	***55***	***55***	***110***

2034 Forecast Traffic Volumes

The 2034 forecast traffic volumes were developed by adding the growth of regional traffic (through the historical trends methodology) and estimated trip generation to the seasonally adjusted existing traffic volumes (shown in Figure 4). The estimated trip generation was distributed through the network based on existing turning movements and estimated exchanges between TAZs. *This process is further detailed in Appendix 3.*

The 2034 forecast traffic volumes are shown in Figure 6 along with the results of the operations analysis performed at each study intersection. Additional information related to the operations analysis is provided below.

Future Traffic Operations Analysis Results

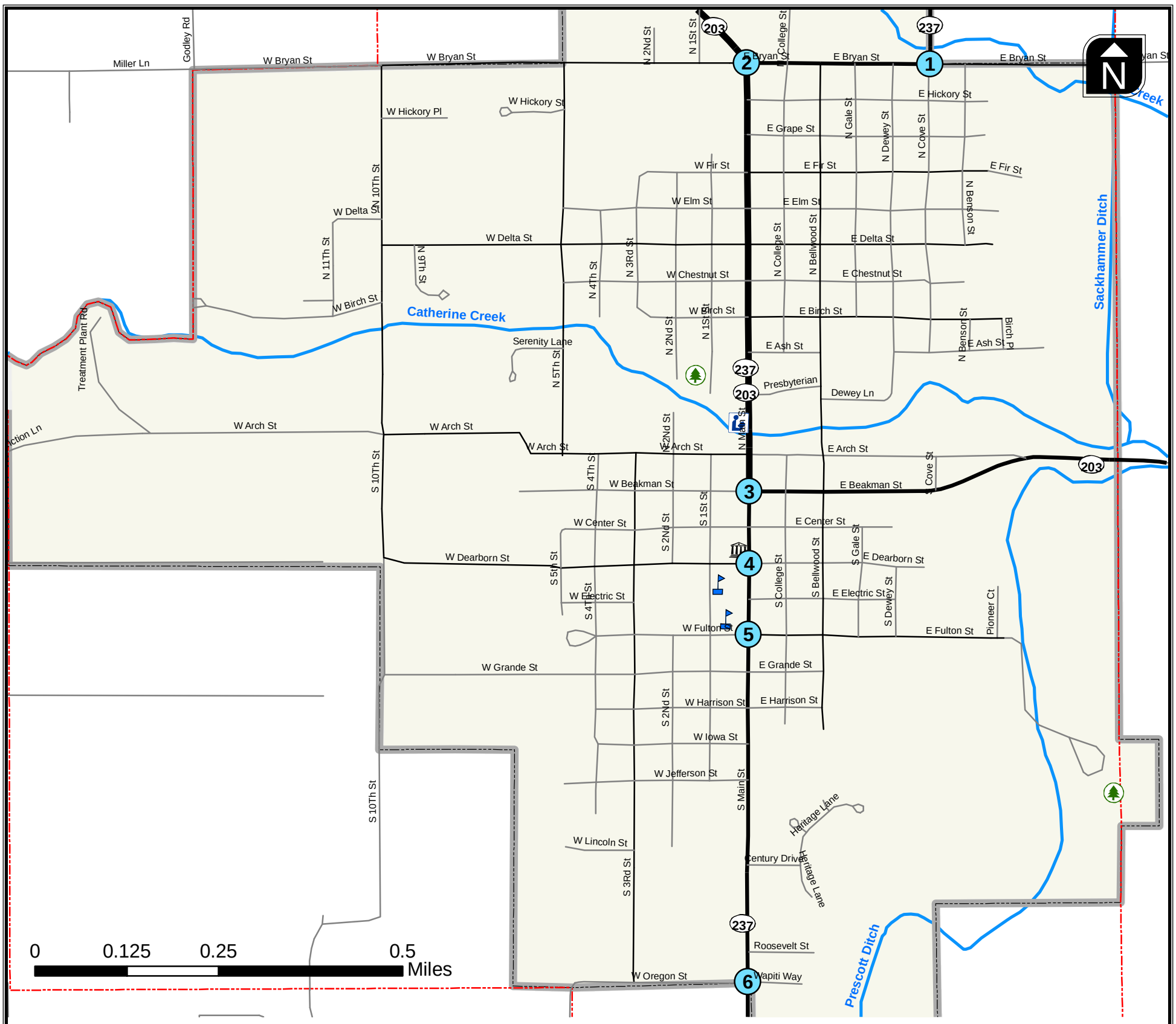
Level-of-service (LOS), volume-to-capacity (v/c) ratios and 95th percentile queue lengths were calculated for each of the study intersections identified for the Union TSP update with the anticipated 2034 traffic volumes. The following sections present the results of these analyses and discuss which intersections do not meet the applicable standards.

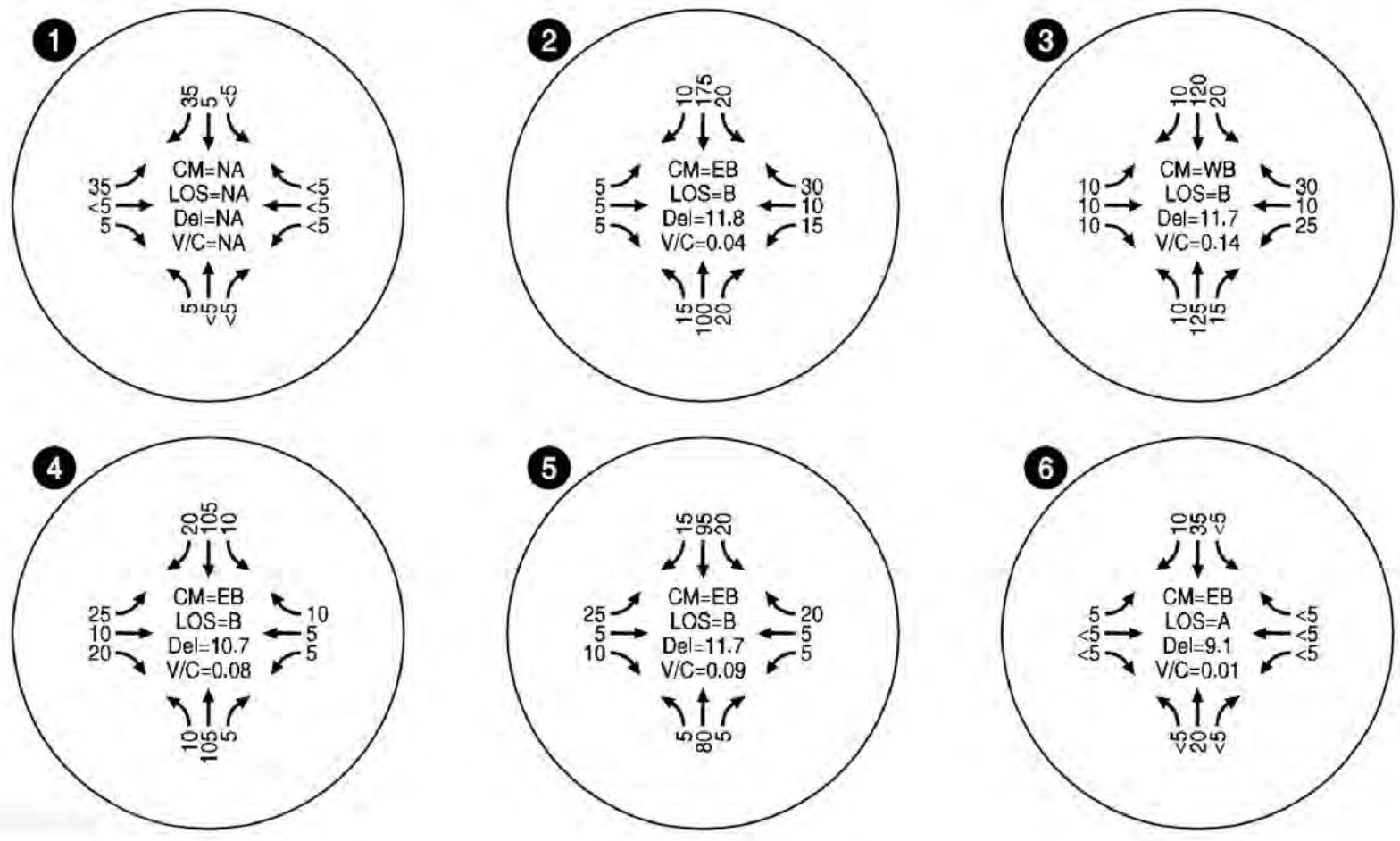
Intersection Delay and Capacity Analysis

Figure 6 summarizes the future intersection operations. All study intersections are evaluated against OHP targets for non-signalized intersections. Based on this analysis, all study intersections are forecast to continue to operate within acceptable performance targets. *Appendix 2 details the results of the operations analysis.*

Intersection Queuing Analysis

Queuing analysis is performed at the study intersections. The 95th-percentile queue length reported are from those calculated using Synchro 8 software, which implements the *2010 Highway Capacity Manual* methodology. The queuing analysis shows that all intersections have minimal queuing over the peak hour, well below capacity of the existing lane configurations. *Appendix 2 contains the results of the queuing analysis for all of the study intersections.*





Study Intersection
Arterial
Major Collector
Collector
Local
Union City Limits
Union UGB
City Hall
Library
Park
School

Future 2034 Intersection Volumes and Operations

UNION OREGON

Figure 6

Future Conditions Operations Summary

- All six study intersections are found to meet operational performance standards under future 2034 conditions.
- All six study intersections are found to have no problems with queuing for all movements under future 2034 conditions.

CRASH ANALYSIS

The purpose of documenting the crash history from the past five years in Union and conducting crash analyses for the study intersections and key roadway segments in the area is to identify intersections and roadway segments that may benefit from roadway and/or operation adjustments to reduce the occurrence and severity of crashes. However, not all crashes are preventable through roadway engineering.

The five most recent years of crash data were collected from ODOT for the study intersections and key roadway segments within Union. The Statewide Priority Index System (SPIS) was also reviewed to determine if any crash sites within the study area are included in the top ten percent of all crash sites in the state. ODOT's SPIS analysis uses the most recent three years of data (i.e., 2009 through 2011); the intersection and segment crash analysis conducted as part of this TSP update uses the five most recent years of crash data (i.e. 2008 through 2012). No SPIS sites were identified in the study area.

Within the last five years, only eleven crashes have been reported in Union. Because so few crashes have occurred across the network in Union, a more detailed statistical analysis is not beneficial and a more qualitative examination of crashes will be used. No fatal crashes have been reported in the last five years.

Of the eleven crashes that have occurred, the most common crash type is rear-end crashes (four total). However, each rear-end crash has occurred at different intersections and in different years, showing no trends to identify. Table 7 summarizes the crash data by study intersection. The table summary provides the number of crashes and crash severities reported from 2008 through 2012.

Table 7 Summary of Reported Crashes at Study Intersections (2008-2012)

Intersection	PDO[1]	Injury	Fatal	Total
OR 237 (N Cove Hwy) & Cove Street	0	0	0	0
OR 203/237 (Main Street) & OR 237 (Bryan Street)	1	1	0	2
OR 203/237 (Main Street) & OR 203 (Beakman Street)	1	1	0	2
OR 237 (Main Street) & Dearborn Street	0	0	0	0
OR 237 (Main Street) & Fulton Street	0	0	0	0

Intersection	PDO[1]	Injury	Fatal	Total
OR 237 (Main Street) & Oregon Street	0	0	0	0
OR 203/237 (Main Street) & Arch Street[2]	2	1	0	3
Total Study Intersection Crashes	**4**	**3**	**0**	**7**

[1]PDO stands for property damage only
[2]Intersection is not a designated TSP study intersection

Table 7 shows that four of the eleven crashes occurred at study intersections. Three of the eleven crashes occurred at the intersection of Main Street and Arch Street; the most of any intersection within the last five years. This is most likely due to the limited intersection sight distance on the eastbound leg facing north, currently blocked by an existing business.

Overall, considering there are no prevailing trends and the number of crashes is minimal, there is little safety concern with respect to traffic in Union, with the exception of the intersection of Bryan Street and OR 203 (Main Street). This intersection is a two-way stop controlled intersection, with the north leg skewed to the west, and has limited sight distance due to trees and shrubs obstructing the view. Further discussion of this concern is discussed below.

All crash data can be found in Appendix 4.

EVALUATION OF STREET SYSTEM

As documented in the existing and future year traffic operations analyses, all roadway and study intersections are projected to have more than adequate levels of capacity to accommodate local and regionial growth projectsions. As such, a high-level overview of the street system needs and opportunities will focus on traffic safety needs, improved pavement quality[1], and ensuring future growth will be integrated and connected into the existing roadway grid.

Bryan Street & OR 203 Intesection

The intersection at Bryan Street and OR 203 (Main Street) has been identified as having limited intersection sight distance on the eastbound approach. This intersection sight distance limitation is due to the skew of the intersection and existing vegetation growing on the property in the northwest quadrant. The southbound movement of the north leg, OR 203 (La Grande-Baker Highway), approaches the city as a speed transistion zone initially reducing from a speed limit of 55 mph to 35 mph (approximately 0.25 miles upstream of the intersection) to 25 mph (approximately 325 feet

[1] A Pavement Maintenance Plan (Referance 5) was developed in 2013. The findings and recommendations from this report are not included in this memorandum, but will be taken into consideration as part of the TSP update.

upstream of the intersection). Considering the movement is not stop controlled, vehicles traveling southbound may be traveling at higher speeds than permitted. While not indicated as an issue from the crash history in Table 7, the intersection sight distance limitation remains a concern.

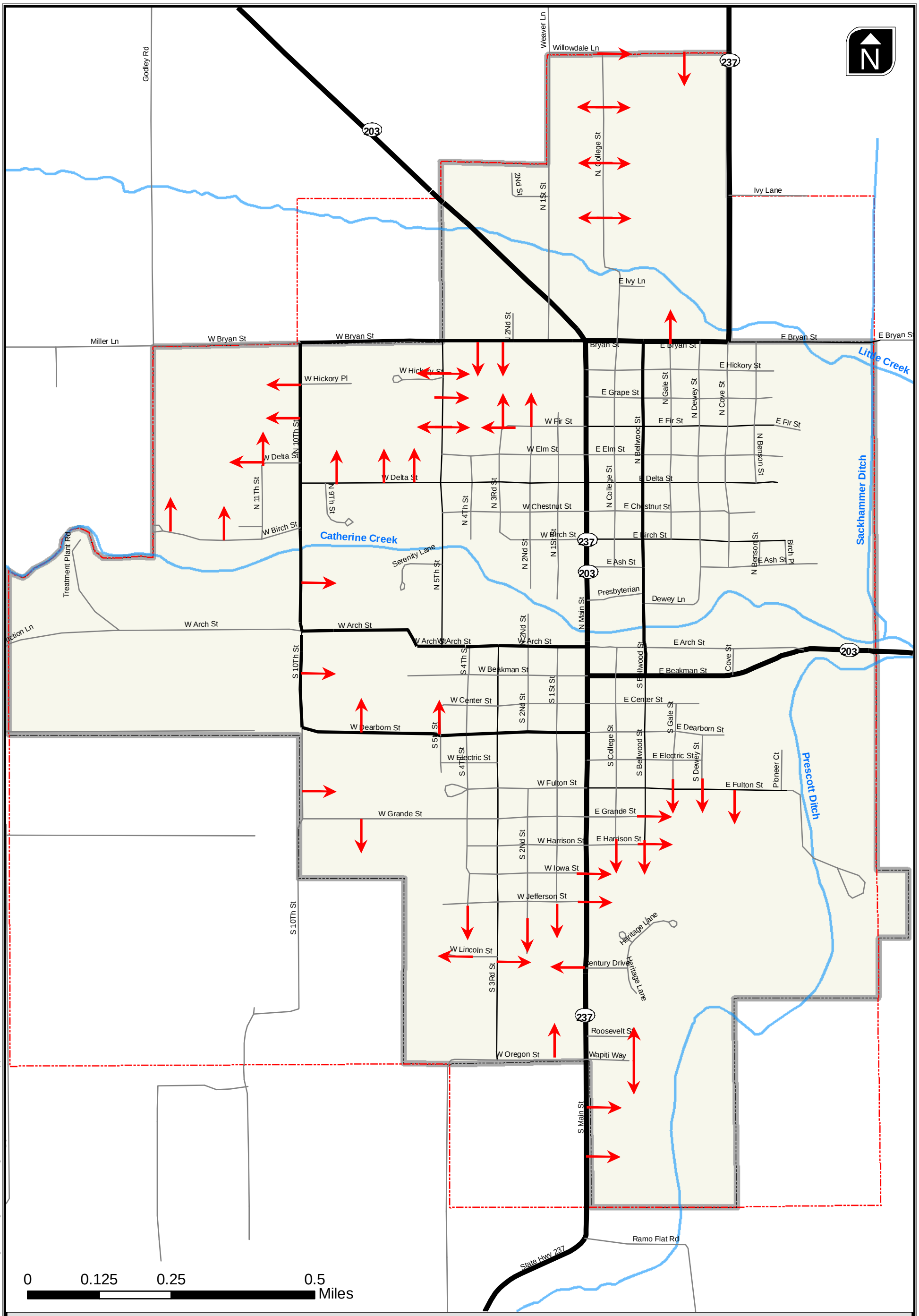
Currently, trees and other forms of foliage block the sight lines when looking north from the eastbound intersection approach as shown in Exhibits 2A and 2B. According to the American Association of State Highway and Transportation Officials (AASHTO) *Geometric Design of Highways and* Streets, the intersection sight distance standard for a 25 mph highway required for a left turn movement from Bryan Street to OR 203 is a minimum of 280 feet (Reference 6). The intersection sight distance that is currently available for that turn is approximately 160 feet; roughly 120 feet short of the minimum requirement. ODOT and the City of Union will want to work with the property owner in the northwest quadrant of the intersection to find ways to improve the intersection sight distance at the eastbound Bryan Street approach. Such improvements could be as drastic as significant geometic realignment of the intersection or coordinating with the property owner to remove the shrubs and trees obstructing the intersection sight lines.

Exhibit 2A Limited Intersection Sight Distance at the OR 203/Bryan Street Intersection; from Bryan Street EB viewing north (top)

Exhibit 2B Limited Intersection Sight Distance at the OR 203/Bryan Street Intersection; from Bryan Street EB viewing north (top); from OR 203 SB (bottom)

Improved Roadway Connectivity

Union is currently served by a traditional street grid pattern. Ensuring future extensions of the street grid as part of new or in-fill development will be important to continuing a transportation network that will reduce reliance upon the north-south and east-west state highways. Opportunities for potentially expanding and enhancing the existing street grid are identified in Figure 7. To the extent possible, these opportunities take into account existing development and land use, focusing primarily on undeveloped lands that are likely to see the greatest potential for near- and long-term future development.



Arterial
Major Collector
Collector
Local

Union City Limits
Union UGB
Roadway Connection Opportunities

Future Roadway Connection Opportunities

UNION OREGON

Figure 7

H:\proj\file\13445 - Union TSP Update and Goal 12 Plan\gis\Existing Conditions Figs\13445_FIG07_FutureOpportunities.mxd

BICYCLE AND PEDESTRIAN SYSTEM

The following subsections detail the existing infrastructure, operations, and evaluations for bicyclists and pedestrians in Union.

BICYCLE FACILITIES

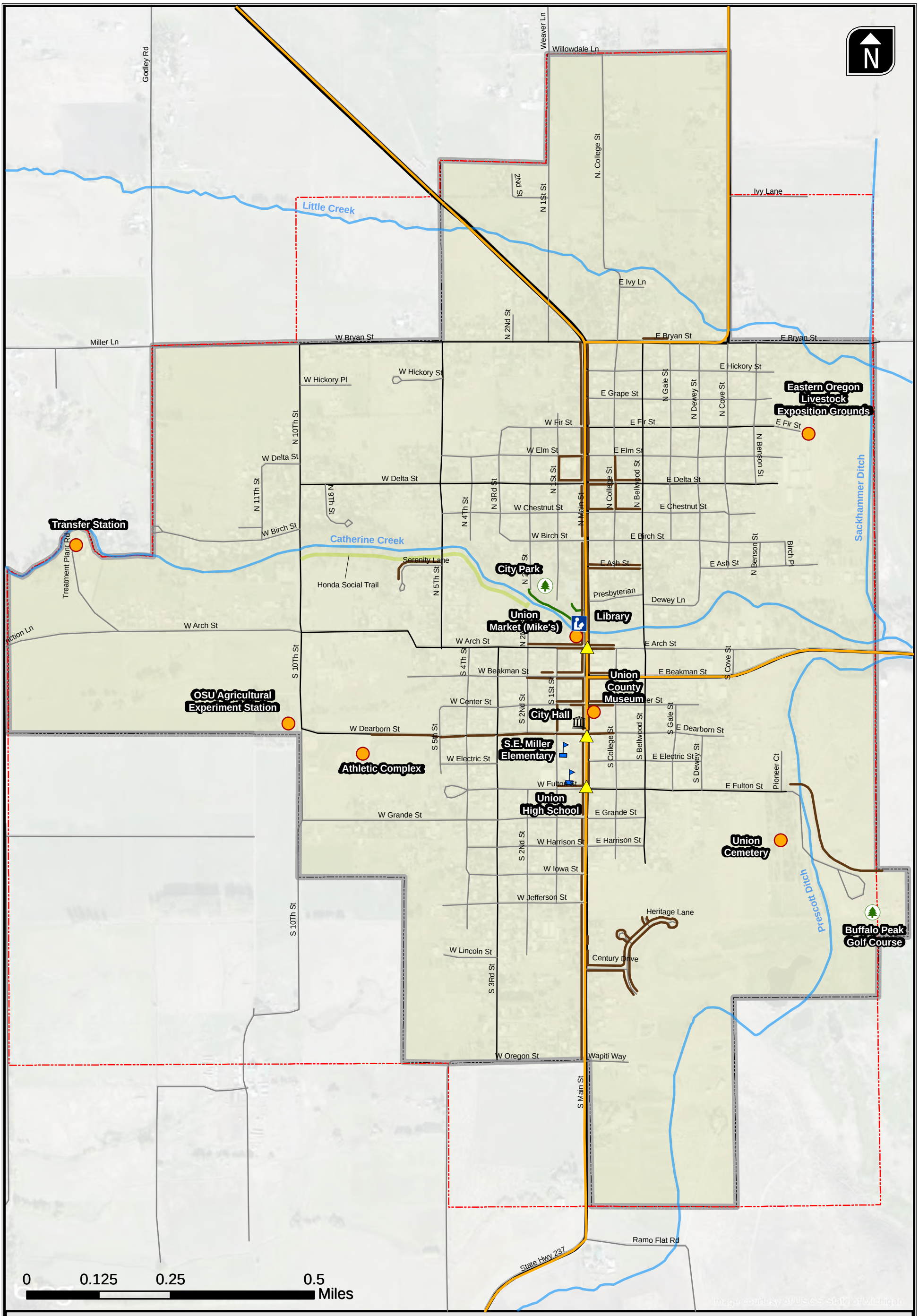
Existing bicycle facilities in Union are illustrated in Figure 8 and described in more detail below.

Bike lanes are portions of the roadway designated specifically for bicycle travel via a striped lane and pavement stencils. Bike lanes are most appropriate on collector and arterial roadways to provide a dedicated space for bicycling that is separate from the motor vehicle lane. ODOT standard width for a bicycle lane is six feet. The minimum width of a bicycle lane against a curb or adjacent to a parking lane is five feet. A bicycle lane may be as narrow as four feet, but only in very constrained situations.

- Existing: There are currently no bike lanes in Union.
- Opportunities: Adding bike lanes to all or a portion of Main Street would serve local bicycle travel (including to school) as well as for visitors traveling the Grande Tour Scenic Bikeway. Bryan Street and Beakman Street are both on the Grande Tour Route and would also benefit from either bike lanes or shared lane markings.

Shoulder Bikeways are paved roadways that have striped shoulders wide enough for bicycle travel. ODOT recommends a six-foot paved shoulder to adequately provide for bicyclists, and a four-foot minimum width in constrained areas. Roadways with shoulders less than four feet are considered shared roadways. Shoulder bikeways are sometimes signed to alert motorists to expect bicycle travel along the roadway.

- Existing: There are no shoulder bikeways in Union.
- Opportunities: The roads to Cove (Hwy 237) and La Grande (Hwy 203) have gravel shoulders within the city limits that could be paved to accommodate bicycle travel. Beyond city limits, ensuring adequate shoulders for bicycle travel would be a separate project potentially led by ODOT.
- Neighborhood Greenways help encourage active transportation by providing comfortable, low-stress routes between neighborhoods and local parks, schools, and shopping areas. These facilities are developed off the main motor vehicle street system, on low traffic volume and low speed streets, to attract less experienced walkers and bikers. Local streets are modified to prioritize the through movement of bicyclists and pedestrians while maintaining local access for automobiles. Neighborhood greenways typically include wayfinding signage and pavement markings and sometimes make use of traffic calming features that reduce motor vehicle speeds and volumes. Where these facilities cross major roadways, it is important to provide safe and comfortable pedestrian and bicycle crossings. Further enhancements may include "green street" features such as bio-swales and street trees, pervious concrete or asphalt, in



Scenic Bike Route
Existing Sidewalk
Existing Multi-use Path
Existing Crossings
Local Street
Highway
Civic
Library
Other
Park
School
Streams
Union City Limits
Union UGB

Walking and Bicycling Existing Conditions

UNION OREGON

Figure 8

addition to wider sidewalks and improved pedestrian amenities (e.g., benches and pedestrian-scale lighting).

- Existing: There are no neighborhood greenways in Union, though many local streets are comfortable for bicycle travel due to their low traffic volumes and slow speeds. There is currently a parthway in the city park.
- Opportunities: There is an opportunity to identify a network of low volume streets for bicycle travel in Union. At minimum, these routes could be identified with Shared Lane Markings and wayfinding signage. Traffic calming measures such as speed humps could be added as desired to reduce the speed differential between bicyclists and motor vehicles. Crossings treatments should be provided where these routes cross busier streets such as Main Street.

Bicycle Parking is an essential component of a community's bikeway network, and can strongly influence one's decision whether to make a trip by bicycle. Bicycle parking can be broadly defined as either short-term or long-term parking. Short-term parking is meant to accommodate visitors, customers, and others expected to depart within two hours. Long-term parking is meant to accommodate employees, students, residents, commuters, and others expected to park more than two hours. It is especially important that parking meant to accommodate longer-term users be provided in a secure, weather-protected manner and location.

- Existing: Bicycle parking is present at Union schools and City Park, as shown in Exhibit 3. The city does not have an ordinance that requires bicycle parking as part of residential or commercial development.
- Opportunities: The City of Union could develop a program to install bike racks at select locations downtown. It could also install bike parking upon request of business owners (e.g., Experimental Station). The city could consider adopting a bicycle parking ordinance to require bicycle parking with new development (e.g., future employment areas).

Exhibit 3 Existing bicycle parking at City Park (left) and the elementary school (right).

Signed Bike Routes alert bicyclists to the preferred streets for riding through directional and wayfinding signage. These facilities may, or may not, be combined with paved shoulders, bike lanes, or shared lane markings.

- Existing: The Grande Tour Scenic Bikeway is a signed route through Union that travels along Main Street (Hwy 203/237), Beakman Street (Hwy 203) out toward Catherine Creek State park, and Bryan Street/Cove Street (Hwy 237) on the way to Cove. Exhibit 4 shows some examples of existing signage.
- Opportunities: Signage could be used to identify the network of bike routes in Union identified as part of this TSP.

Exhibit 4 Existing wayfinding signage in Union.

PEDESTRIAN FACILITIES

Existing sidewalks in Union can be seen in Figure 8 and are described below.

Sidewalks are the most fundamental element of the walking network. Sidewalks are typically constructed of concrete and separated by a curb and gutter, landscaping, and on-street parking. The unobstructed travelway for pedestrians on a sidewalk should be clear of utility poles, sign posts, fire hydrants, vegetation, and other street furnishings. The ODOT standard for sidewalk width is six feet, with a minimum width of five feet acceptable on local streets. The Union sidewalk specifications are found in the Standard Street Details for Sidewalk and Curb Details (Figure R6) and Typical Section Local Street (R1), which both identify a five foot sidewalk standard.

- Existing: As indicated in Figure 8, the sidewalk network in Union is concentrated on Main Street, on one side of Dearborn Street adjacent to the elementary and high school, on Fulton Street (only part of which has lighting) leading up to the Buffalo Peak Golf Course, and Arch

Street from Main Street to Second Street. Sidewalks are generally not present in residential neighborhoods.

- Issues: Sidewalks in Union generally drop down to street level at driveways, which results in an uneven walking surface that can be particularly challenging for people in wheelchairs or pushing strollers. An alternate design uses a planter strip to allow sidewalks to remain level, with the driveway grade change occurring within the planter strip (see Exhibit 5)
- Opportunities: Most streets in Union have a 60' right-of-way, so there is generally room to add sidewalks and a planter strip. It may be most appropriate to provide a separate walking realm on local roadways that carry higher volumes of vehicular traffic, such as Bellwood Street. Walkways on residential streets could be placed several feet off of the street to allow rainwater to drain off the street and eliminate the need for more costly curb and gutter.

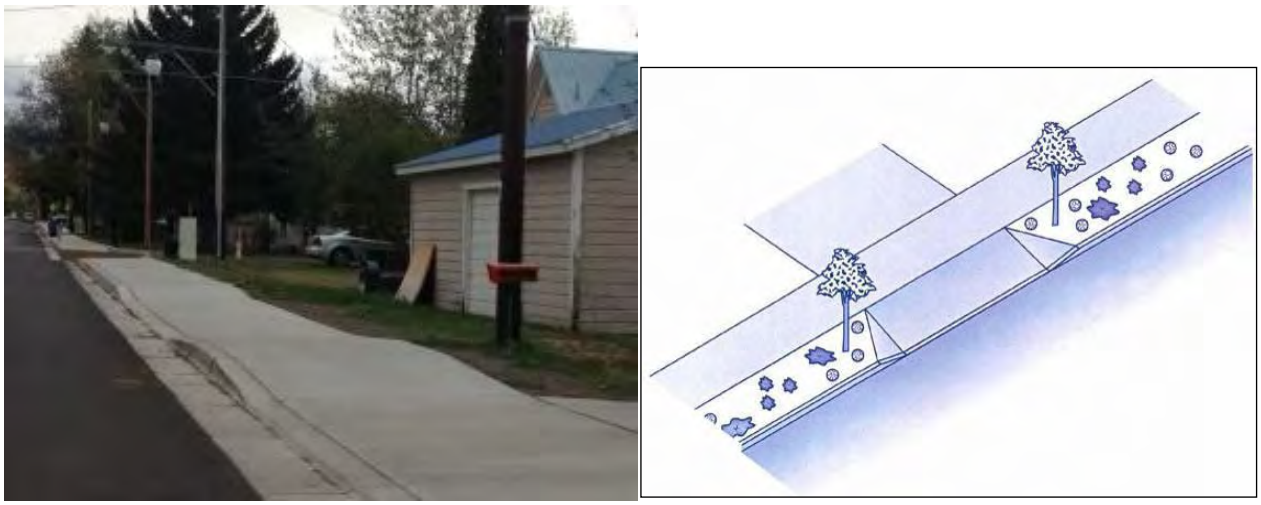


Exhibit 5 Existing sidewalks in Union dip at driveways, creating an uneven walking surface (left). Planter strips allow sidewalks to remain level, with the driveway grade change occurring within the planter strip (right).

Roadway shoulders serve as pedestrian routes in many rural Oregon communities. On roadways with low traffic volumes (i.e., less than 3,000 vehicles per day), roadway shoulders can be adequate for pedestrian travel. These roadways should have shoulders wide enough so that both pedestrians and bicyclists can use them, usually six feet or greater.

- Existing: There are no designated shoulders in Union, with the exception of some gravel shoulders on Beakman Street east of Main Street.

SHARED PEDESTRIAN AND BICYCLE FACILITIES

Existing facilities that benefit both walking and bicycling in Union include marked crossings that aid crossings of busy streets, multi-use trails and traffic calming.

Marked Crossings are present in two different forms in Union. Transverse Crosswalks are marked crossings that consist of two parallel white lines. Continental (or Zebra) Crosswalks increase the visibility of the crossing by marking the crossing with a series of parallel or diagonal lines. An example of each crossing type is shown in Exhibit 6.

- Existing: Transverse crossings are the typical crossing type along Main Street except near the schools, where continental crossings are used to increase visibility.
- Issues: Streets with higher traffic volumes and speeds can be difficult to cross and serve as barriers to pedestrian and bicycle travel. The TSP project list will identify projects that would benefit from additional marked crossings or enhancements to existing crossings. Particularly on Main Street, where local streets intersect with proposed pedestrian and bicycle routes, increased design emphasis at intersections is important.
- Opportunities: Marked crossings are more common along the South end of Main Street, including those that provide access to Union schools. More frequent marked crossings could be provided on the North end of Main Street near destinations such as City Park, the library and the difficult intersection of Bryan Street at Main. While ODOT typically reserves continental crosswalks to highlight the presence of schools, this higher visibility crossing type could be used throughout Main Street. In fact, kids can be observed crossing Main Street at various intersections on their way to school, including those on the North end of town.

Exhibit 6 Continental crosswalks near Union Elementary School (left) and transverse crosswalks near Union Market (right).

Multi-use paths are used by a variety of non-motorized users, including pedestrians, bicyclists, skateboarders, and runners. Multi-use paths are typically paved (asphalt or concrete) but may also consist of an unpaved smooth surface as long as it meets Americans with Disabilities Act (ADA) standards. Multi-use paths are usually wider than an average sidewalk (i.e. 10 – 14 feet).

- Existing: There is a relatively short multi-use path (~600') along Catherine Creek in City Park.

- Opportunities: A network of multi-use paths could be developed to serve recreational and utilitarian walking and bicycling trips in Union, including extending the path along Catherine Creek.

Curb extensions – Curb extensions minimize pedestrian exposure by shortening the crossing distance and giving pedestrians a better chance to see and be seen before committing to crossing. They are appropriate for any crosswalk where it is desirable to shorten the crossing distance and there is a parking lane adjacent to the curb.

- Existing: There is a curb extension along Dearborn Street to enhance the connection between school campuses on either side of the street (see Exhibit 7).
- Opportunities: Curb extensions could enhance existing and future pedestrian crossings of Main Street, a wider street where cars reportedly do not always stop for waiting pedestrians.

Refuge island crossings are located at the mid-point of a marked crossing and help improve safety by allowing pedestrians to cross one direction of traffic at a time. Refuge islands minimize pedestrian exposure by shortening crossing distance and increasing the number of available gaps for crossing.

- Existing: There are no examples of median refuge island crossings in Union.
- Opportunities: There has been some discussion of creating a gateway treatment near the entrances of Union, especially at the intersection of Bryan Street and Main Street. Refuge island crossings could be used as part of a gateway treatment.

Traffic Calming is designed to reduce motor vehicle speeds and volumes to create a more safe and comfortable environment for walking and bicycling. Common traffic calming treatments include speed humps, traffic circles, diverters and chicanes.

- Existing: Traffic calming is uncommon in Union. A speed bump is present at the entrance to City Park. During the consultant team field visit, a sheriff owned speed reader board was stationed along Main Street near the schools to encourage compliance with the 20 mph school speed limit, as shown in Exhibit 7.
- Opportunities: While traffic speeds and volumes are generally low in Union, traffic calming could be considered to reduce vehicular speeds on local streets identified as pedestrian or bicycle routes.

Exhibit 7 Speed reader board (left) and curb extension (right), both located near Union schools.

QUALITATIVE MULTI-MODAL LEVEL OF SERVICE

The qualitative multi-modal level of service methodology (QMMLOS) is outlined in the draft APM V2 (Reference 3). A QMMLOS was performed for the arterial and collector network in Union. This section outlines the QMMLOS methodology and findings along the roadway segments in the network.

OVERVIEW OF QMMLOS

In general QMMLOS integrates the following characteristics for pedestrians, bicyclists, transit, and auto modes:

Pedestrian Facilities

- Outside travel lane width
- Bike lane/shoulder width
- Buffers
- Sidewalk path presence
- Pavement Condition
- Volume and Speed
- Traffic Control
- Crossing Width
- Median Islands

Bicycle Facilities

- Bicycle lane presence and effective width
- Shoulder presence and width
- Outside travel lane width
- Pavement Condition
- On Street Parking
- Volume, type, and speed of motorized traffic in the adjacent travel lane
- Traffic Control
- Crossing Width

Transit

- Service frequency
- Bus Speed/Travel Times
- Bus Stop Features
- Pedestrian Network

Auto

- V/C Ratio
- Delay
- Safety

Given these high level roadway characteristics, the select corridors will first be inventoried for the presence of their transportation facilities. Additionally, due to the limited presence of transit (discussed in the next section), no QMMLOS will be conducted for the transit portion. The following subsections describe analysis for the state routes; *the remaining collector network is summarized in Table 8 and detailed in Appendix 5.*

Main Street (OR 203/237; La Grande-Baker Highway)

Main Street is a two-lane facility with a posted speed of 25 mph through the city limits. The roadway curb-to-curb width ranges between 40 feet and 50 feet with parking permitted on both sides for the full extents. Additionally, curb and gutter run along most of the extents between Bryan Street and Oregon Street.

Bicycle Facilities

There are no bike lanes or sharrow markings along Main Street and bicyclists are required to mix with traffic.

Pedestrian Facilities

Sidewalks run along both sides of Main Street between Bryan Street and Oregon Street. There are no planters used to separate pedestrians from the roadway however there is some street furniture and utility poles. Additionally, on-street parking provides a buffer for pedestrians within downtown Union (between Fulton Street and Ash Street).

Beakman Street (OR 203; Medical Springs Highway)

Beakman Street is a two-lane facility with a posted speed of 25 mph through the city limits and is a major collector road east of Main Street. The roadway width ranges between 36 feet and 40 feet with parking permitted on both sides for the full extents. Additionally, curb and gutter run along Beakman Street between Main Street and College Street. To the east of College Street, shoulders are gravel all the way out to the eastern city limits.

Bicycle Facilities

There are no bike lanes or sharrow markings along Beakman Street and bicyclists are required to mix with traffic.

Pedestrian Facilities

Sidewalks run along both sides of Beakman Street between Main Street and College Street. There are no planters used to separate pedestrians from the roadway however there are utility poles. The remaining extents requires pedestrians to use the gravel shoulders.

Bryan Street (OR 237; Cove Highway)

Bryan Street is a two-lane facility with a posted speed of 25 mph through the city limits and is a major collector road east of Main Street and bends to the north at Cove Street towards the City of Cove. The roadway width ranges between 36 feet and 40 feet with parking permitted on both sides for the full extents. To the east of Main Street, shoulders are gravel all the way out to the eastern city limits.

Bicycle Facilities

There are no bike lanes or sharrow markings along Bryan Street and bicyclists are required to mix with traffic.

Pedestrian Facilities

There are no sidewalks along Bryan Street requiring pedestrians to use the gravel shoulders.

Network QMMLOS Summary

Table 8 summarizes the QMMLOS findings for Union's arterial and collector network.

Table 8 Existing Multimodal Assessment

Location	Travel Mode		
	Bicycle	Pedestrian	Auto
Main St from Oregon to Harrison	Fair	Fair	Good
Main St from Harrison to Fulton	Fair	Good	Good
Main St from Fulton to Dearborn	Fair	Good	Good
Main St from Dearborn to Beakman	Fair	Good	Good
Main St from Beakman to Arch	Fair	Good	Good
Main St from Arch to Catherineerine Creek	Fair	Good	Good
Main St from Catherineerine Creek to Delta	Fair	Good	Good
Main St from Delta to Fir	Fair	Good	Good
Main St from Fir to Bryan	Fair	Good	Good
Main St from Bryan to City Limits	Poor	Fair	Good
Bryan St from 10th to 5th	Good	Fair	Good
Bryan St from 5th to Main	Good	Fair	Good
Bryan St from Main to Bellwood	Fair	Fair	Good
Bryan St from Bellwood to Cove	Fair	Fair	Good
Beakman St from Main to College	Fair	Fair	Good

Location	Travel Mode		
	Bicycle	Pedestrian	Auto
Beakman St from College to Bellwood	Fair	Fair	Good
Beakman St from Bellwood to Cove	Fair	Fair	Good
Beakman St from Cove to City Limits	Fair	Fair	Good
Fir St from Main to Bellwood	Good	Fair	Good
Fir St from Bellwood to Benson	Good	Fair	Good
Delta St from 10th to 5th	Good	Fair	Good
Delta St from 5th to Main	Good	Fair	Good
Delta St from Main to Bellwood	Good	Fair	Good
Delta St from Bellwood to Benson	Good	Fair	Good
Arch St from 10th to 5th	Good	Fair	Good
Arch St from 5th to 3Rd	Good	Fair	Good
Arch St from 3rd to Main	Good	Fair	Good
Dearborn St from 10th to Sports Complex	Good	Fair	Good
Dearborn St from Sports Comlpex to 3rd	Good	Fair	Good
Dearborn St from 3rd to Main	Good	Fair	Good
Fulton St from Main to Bellwood	Good	Fair	Good
Fulton St from Bellwood to Pioneer	Good	Fair	Good
10th St from Bryan to Delta	Good	Fair	Good
10th St from Delta to Catherineerine Creek	Good	Fair	Good
10th St from Catherineerine Creek to Arch	Good	Fair	Good
10th St from Arch to Dearborn	Good	Fair	Good
5th St from Bryan to Delta	Good	Fair	Good
5th St from Delta to Catherineerine Creek	Good	Fair	Good
5th St from Catherineerine Creek to Arch	Good	Fair	Good
3rd St from Arch to Dearborn	Good	Fair	Good
3rd St from Dearborn to Oregon	Good	Fair	Good
Bellwood St from Bryan to Fir	Good	Fair	Good
Bellwood St from Fir to Delta	Good	Fair	Good
Bellwood St from Delta to Catherineerine Creek	Good	Fair	Good
Bellwood St from Catherineerine Creek to Beakman	Good	Fair	Good
Cove Hwy from Bryan Street to city limits	Poor	Fair	Good

As shown in Table 8, the network provides generally good level-of-service for automobiles due to the system being under capacity and having minimal safety concerns. The pedestrian network is generally rated as only fair due to lack of sidewalks (except along Main Street) and does not qualify as poor due to lower traffic speeds and volumes, relative short crossings, and the presence of shoulders. The bicycle network is generally good with the exception of the state highways due to increased traffic presence and lack of bike lanes. The higher speeds leaving town to the north result in a “poor” rating for bicycles.

BICYCLE LEVEL OF TRAFFIC STRESS

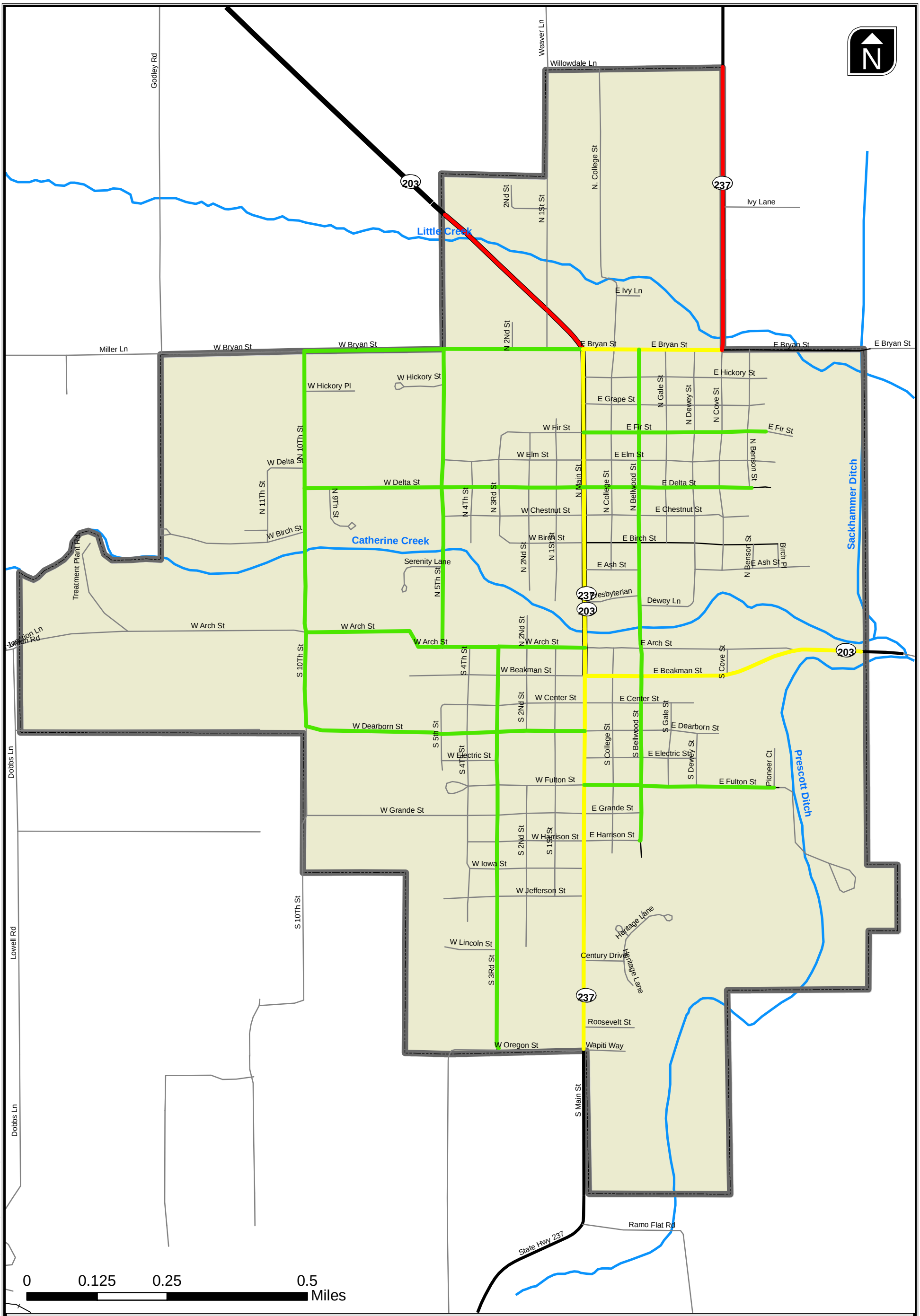
The bicycle level of traffic stress (LTS) integrates a variety of roadway characteristics to evaluate the comfort of a bicyclist riding on a street network, in which there are four different LTS levels; LTS 1 being the best and LTS 4 being the worst. Generally, bicyclists have the lowest stress when they are riding on their own dedicated bicycle path or multi-use path and have the highest stress when riding on highways with vehicles passing them at speeds at and above 45 mph. A variety of different factors which contribute to a high or low LTS are described below, which generally apply to the City of Union:

- Vehicle speeds
    - 25 mph ≤ LTS 1 with unmarked centerlines or classified as a local roadway, otherwise LTS 2
    - 35 mph or above is considered LTS 4
- Intersections
    - Unsignalized crossings at 25 mph with two-lane cross sections is LTS 1

More detail of how the LTS methodology applies can be found in the APM version 2 and the publication by the Mineta institute <http://transweb.sjsu.edu/project/1005.html>.

Figure 9 illustrates the LTS methodology applied to the City of Union. As shown in Figure 9, according to the variables considered by the LTS methodology, Union generally has low levels of traffic stress for bicyclists, aside from OR 203/237 north of Bryan Street. The primary reason the segments north of Bryan Street are characterized by LTS 4 is due to the higher speed entering and leaving the city. This is the same case for Cove Highway, north of Bryan Street.

The main routes through town that would be considered to be more stressful for bicyclists (notably Main Street, Bryan Street, and Beakman Street) is characterized as LTS 2 because of the low travel speeds, the network being entirely made of two-lane roadways, and the lack of conflicting turn lanes at intersections. What separates these roads from the rest of the network analyzed is the presence of roadway markings. The pavement marking do not contribute anything in of themselves, but rather indicate a higher classification of roadway that generally carries greater volumes of traffic.



Bicycle Level of Traffic Stress

- LTS 1
- LTS 2
- LTS 3 or 4

Bicycle Level of Traffic Stress

UNION OREGON

Figure 9

EVALUATION OF BICYCLE AND PEDESTRIAN MOBILITY, SAFETY, AND ACCESS

This section discusses bicycle and pedestrian conditions in relation to major destinations, including downtown, residential neighborhoods, schools, employment or industrial areas, and recreational or other natural areas. Opportunities for improvement are also identified.

Downtown

Main Street is the commercial and social center of Union, with a variety of retail and other destinations such as Union Market, the Historic Carnegie Library, City Park, and the post office. Main Street is also a key route taken by many students on their way to and from Union schools. Main Street has a modern and complete sidewalk network on both sides of the street. Street corners have ADA compliant curb ramps to facilitate travel by people with physical disabilities or people pushing a stroller. Yellow lines demarcate a no parking zone in the vicinity of each intersection to maintain visibility between motorists traveling along Main Street and pedestrians, bicyclists or other motorists wishing to cross or enter Main Street. There are limited marked crossing opportunities along Main Street, particularly at the North end of town where Arch Street is the only marked crossing. Higher visibility continental crosswalks are only present at the south end of Main Street near Union schools. There are no bicycle facilities and students, in particular, frequently ride on the sidewalks.

- Opportunities: Additional high visibility crossings could be added along Main Street while existing crossings can be enhanced by converting them to higher visibility continental crosswalks and adding curb extensions to shorten wide crossings. Bike infrastructure such as bike lanes could be added to Main Street. In addition to facilitating local bicycle travel, bike facilities on Main Street could encourage people traveling the Grand Tour Scenic Bikeway to explore downtown Union and visit local shops or restaurants. There is also the opportunity to implement gateway treatments at the entrances of Union to welcome visitors and signal to motorists that they should reduce their speeds.

Residential Neighborhoods

Most residential streets lack sidewalks and facilities for bicycles. With low vehicle speeds and volumes, most residential streets in Union are relatively comfortable for walking and biking. However, some residential streets do experience higher traffic volumes, including the few North-South streets that cross Catherine Creek (e.g. Bellwood St). Residential streets in Union are of varying pavement quality, which presents challenges to people with physical disabilities or pushing a stroller. With the exception of limited crossings of Catherine Creek, Union streets are on a well-connected grid which is supportive of direct walking and bicycling routes.

- Opportunities: A core network of prioritized walking (and biking) routes would enhance access within neighborhoods and connections to destinations such as downtown or schools. Where these routes cross busier streets, such as Main Street, a marked crossing would be

appropriate. As discussed in the Downtown section, additional marked crossings of Main Street would enhance residential access to destinations. A network of sidewalks would particularly benefit young children, the elderly, and people with physical disabilities. Dedicated walking facilities may be particularly appropriate on those residential streets that carry higher motor vehicle volumes, such as Bellwood and the 5th Street to 3rd Street route to school. Most residential streets in Union have 60 feet of right of way, which means there is ample room to implement sidewalks. To limit cost, these sidewalks could be constructed as walkways without curb and gutter and can be located on one side of the street.

Schools

Many students in Union walk or bike to school and there are a number of facilities to support this type of travel. The approach to the schools northern and eastern entrances are signed with school crossing signs and high visibility crosswalks. Main Street is the only north/south route to connect to the school that has complete sidewalks and crosswalks. In addition to providing access to school, Main Street also provides access to a number of destinations that are routinely frequented by students (e.g., Union Market, Library, and City Park). A new sidewalk with pedestrian-scale lighting on the south side of Dearborn Street provides for east/west movement near the school campus, including access to the sports complex. Curb extensions and a high visibility crosswalk across Dearborn Street provide an enhanced crossing opportunity for students to access the Middle School at the intersection of Dearborn Street and 1st Street. Traffic circulation at the student pickup/drop-off location is controlled using one-way streets and appropriate signage. This traffic circulation strategy was employed to improve safety for students and to reduce congestion, though it is reported that some motorists continue to disregard the rules.

Though sufficiently wide and complete with ADA visual-tactile warning strips, the new Dearborn sidewalks dip at all driveway access points, which is not consistent with current best practices. Sidewalks are absent on the north side of Dearborn Street and there are no sidewalks on the southern and western borders of the school campus (Fulton Street and 3rd Street).

- Opportunities: The existing sidewalk network could be expanded to enhance connections between the schools and nearby residential neighborhoods. This would include completing sidewalks around the perimeter of the schools (i.e. Fulton and 3rd Street). Sidewalks on Dearborn could be extended one block to 10th Street to connect to the baseball field.

  Some parents expressed a desire to direct students off of Main Street by giving them viable alternatives. On the other hand, other parents prefer that their kids travel on Main Street, where there are 'eyes on the street', as opposed to quieter local streets. An issue for students bicycling to school is that there are no bicycle facilities on Main Street and a city ordinance forbids riding bicycles on the sidewalk. Alternate north/south routes that could be optimized for bicycle and pedestrian travel include 5th Street and Bellwood Street.

While students use the high visibility crossings on Main Street in front of the school campus, this is not the only place they are choosing to cross Main Street. There is an opportunity to increase the number of high visibility crossings across Main Street north of the school. Potential new high visibility crossing locations include in front of the library or at the Museum.

Recreation/Parks

There are a number of recreational facilities and parks in Union that are popular walking and biking destinations, particularly with children. The following section describes existing conditions at recreational destinations in Union and documents opportunities for improvement.

City Park

Union City Park can be accessed via Main Street, 1st Street, or 2nd Street. Sidewalks on Main Street provide good walking access to that park entrance, but the other two access points do not have sidewalks. A paved recreational path in the park follows the alignment of Catherine Creek between Main Street and 2nd Street. The small berm in the creek next to the park, or "waterfall" as it is known locally, is a popular swimming hole for children during the warm summer months.

- Opportunities: Walking and biking access to the park from the neighborhoods west of 2nd Street and north of Birch Street could be improved with sidewalks. Marked crossings at all park entrances should also be considered. The park entrance on Main Street is especially important, given the higher vehicle volumes and speeds.

Sports Complex

The Athletic Sports Complex is located on Dearborn Street, between 10th Street and 5th Street. A new sidewalk facility on the south side of Dearborn Street provides good east/west access to the complex, but facilities on 10th Street are notably absent. There is also a 500' gap in the sidewalk on Dearborn Street, west of the football field to the baseball field.

- Opportunities: Filling in the sidewalk gap would ensure ADA compatible access to the baseball field from Dearborn Street. Access from the north could be enhanced by providing sidewalks along 10th Street (which is a gravel road).

Golf Course

The Buffalo Peak Golf Course is owned by Union County and located at the southeast edge of town. Sidewalks are present on one side of Fulton Street beginning at the Union Cemetery. A number of paved trails within the golf course are used by golfers, but could also potentially provide a recreational function during hours when the golf course is not operating.

- Opportunities: An easement through Fisher Field provides an opportunity to connect to the Golf Course from Main Street. This connection could also link to the circular roadway in the Cemetery.

The "Five-Mile Loop"

The Five-Mile Loop is an informal recreational walking and biking route that is well-known to community members. The loop begins at the intersection of Beakman Street and Main Street. The route travels in from Beakman Street (Hwy 203) past the city limits to Kofford Road, High Valley Road, Bryan Street, and back to Main Street. This route is popular with walkers, joggers, and bicyclists. Some concern about traffic speeds and volumes along Hwy 203 was heard from the community.

- Opportunities: This route could be formalized with wayfinding signage and small plaques or mile-markers. While much of this route is outside of the city limits, Bryan Street and Beakman Street could both benefit from dedicated sidewalk.

Natural and Historic Features

Ramo Flat

Ramo Flat is a popular destination, especially as a training ground for Union's cross-country team. The area represents some of the steepest terrain within close distance to the town and offers views of Pyles Canyon to the south. Ramo Flat is outside the city limits and access is provided via Hwy 237.

- Opportunity: Wayfinding signage on Main Street could help direct people to Ramo Flat.

Eastern Oregon Livestock Grounds

The Eastern Oregon Livestock Grounds are located east of downtown and, for one week in June, is Union's most popular destination. People travel from all over the country to attend the annual Eastern Oregon Livestock Show. The grounds are relatively unused during the rest of the year.

- Opportunity: A ditch on the eastern edge of the Livestock Grounds property could be developed into a trail between Bryan Street and Hwy 203. There is also a gate opening up onto Bryan Street that, if access were granted, could allow people to travel through the grounds via Bryan Street and connect directly to the residential neighborhood near Fir Street.

Catherine Creek Greenway

The Catherine Creek Greenway is a significant asset for the community. The creek runs horizontally through town, separating north from south with a limited number of streets crossing the creek. A number of homes enjoy a backyard view of the creek and some owners use sections of the river bank as if their own. Though some residential parcels do encroach on the creek alignment, there are long

sections with few private property constraints (e.g., between 10th Street and 5th Street). There is a short trail in City Park and popular swimming holes associated with the creek. A network of informal trails west of City Park known as the "Honda Trails" were once a popular destination for Union children, but access is now closed off by fences on private property.

- Opportunities: There is the potential to increase access to a wonderful community asset by developing a multi-use path along Catherine Creek between the existing Transfer Station west of town and the eastern city limits. Access along some parts of the creek is currently controlled by ditch companies while other areas have private property abutting the creek edge. Close coordination with all stakeholders would be required during the planning of a potential trail along the creek. The segment between the City Park and 10th Street, on the south side of the creek, presents the fewest obstacles to future trail development.

Grande Tour Scenic Bikeway

The Grande Tour Scenic Bikeway is a popular 134-mile Oregon Scenic Bikeways route that passes through the communities of La Grande, Union, Baker City, and other smaller towns. It attracts many recreational and touring bicyclists and the figure-8 shape of the route brings bicyclists through town twice along the route.

Opportunities:

- As the community at the center of the route, Union could develop a park-and-ride facility in town where touring bicyclists can drive into town, drop off a car in a secure location and depart on a multi-day ride. This facility could include a camping area, restrooms, water, and bike parking. The City is already planning to put overnight parking signs on Main Street and kiosks in the park to help support this kind of activity.
- Main Street has no on-street bikeways or bike parking. Both would help welcome bicyclists and increase the chance of them stopping to refuel at a local dining establishment or pick up supplies at Union Market.
- Signage welcoming bicyclists, placed at each of the four main entrances to town, would also help to send a positive message to riders. Such signage could be located along with the existing 'Grande Tour' signs and could highlight where restaurants and other amenities (e.g., the public restroom at the City Park) are located.

Industry / Workplaces

There is limited industry and employment in Union, with most residents working outside of town, particularly in La Grande. Larger employers in Union include the schools, the Agricultural Experiment Station (Oregon State University extension office), and Union Market. There is some interest in attracting light industrial to the area. The current site of the old mill is located north of the school and

is zoned light industrial. If an employer were to obtain the site, truck and freight access to the area would need to be carefully managed to ensure safety near the school and adjacent residential areas.

- Opportunities: With major employment centers residing outside of Union, there is an opportunity to work with Union County to improve routes between Union and La Grande. This could involve widening existing shoulders along Highway 203 and signing them with 'Bike Route' signs to encourage commuter cycling. Should a park-and-ride facility or vanpool location be established in Union, dedicated bike routes or on-street bikeways and secure bike parking at the facility could encourage people to eliminate driving from one leg of their trip.

SUMMARY

As discussed in this memo, Union has a number of characteristics that contribute to a positive walking and bicycling environment. These include:

- Complete sidewalks and ADA compliant curb ramps along Main Street and on one side of Dearborn Street connect to the schools and sports complex. Yellow paint restricts parking at intersections to maintain visibility between pedestrians, bicyclists and motorists.
- Neighborhood streets with low vehicle volumes are comfortable for walking and bicycling.
- Sufficient right-of-way (generally 60 feet) on most local streets for sidewalk infill on select routes.
- A well-connected street grid facilitates convenient and direct bicycle and pedestrian travel.
- High visibility marked crossings of major roadways are present across Main Street in the vicinity of Union schools.
- Relatively slow vehicle speeds on most streets.
- Informal walking paths along portions of Catherine Creek.
- An active community that enjoys walking, jogging, and bicycling.

There are opportunities to build on the many positive characteristics in Union to further improve conditions for walking and bicycling, which are shown in Table 9.

Table 9 Potential Improvement to Bicycle and Pedestrian Conditions

Improvement	Description
Identify priority walking and bicycling routes	Prioritize ADA compliant walking improvements along a network of routes that provide access to schools, recreational areas, employment and other destinations. Provide marked crossings where these routes cross major roadways such as Main Street. These routes could be marked with wayfinding signage. The decision to install sidewalk with curb and gutter should be sensitive to the context, with paved walkways (without curb and gutter) suitable for residential areas. While formal bike lanes are not needed on these routes because low traffic volumes and speeds support bicycling without separate facilities, shared lane markings could be used to designate these as preferred bicycling routes, to separate bicyclists and pedestrians.
Identify a network of multi-use paths	Consider extending the short trail along Catherine Creek from the existing Transfer Station west of town and the eastern city limits. Consider additional trail connections, including near the

	Buffalo Peak Golf Course. Maps to identify potential new trail alignments are being developed as part of this TSP. These trail maps will be stand-alone documents that are separate from the TSP.
Additional and enhanced visibility of marked crossings on Main Street	High visibility marked crossings and curb extension can be added to enhance the visibility of pedestrians and bicyclists and increase access to destinations along Main Street.
Main Street bicycle enhancements or other parallel route	Provide facilities for bicycle travel along Main Street to accommodate students bicycling to schools, visitors using the Grand Tour Scenic Route, or other local bicycle traffic. Alternatively, bicycle improvements could be added to a parallel north-street.
Additional wayfinding signage	Consider additional signage to welcome scenic route bicyclists, to designate the Five-Mile Loop, etc.
Increase bicycle parking	Consider a city-run bicycle rack installation program to increase the amount of bicycle parking available at destinations.
Gateway treatments	Consider gateway treatments to welcome people to Union and indicate that motorists have entered a pedestrian area where slower speeds are appropriate.

.

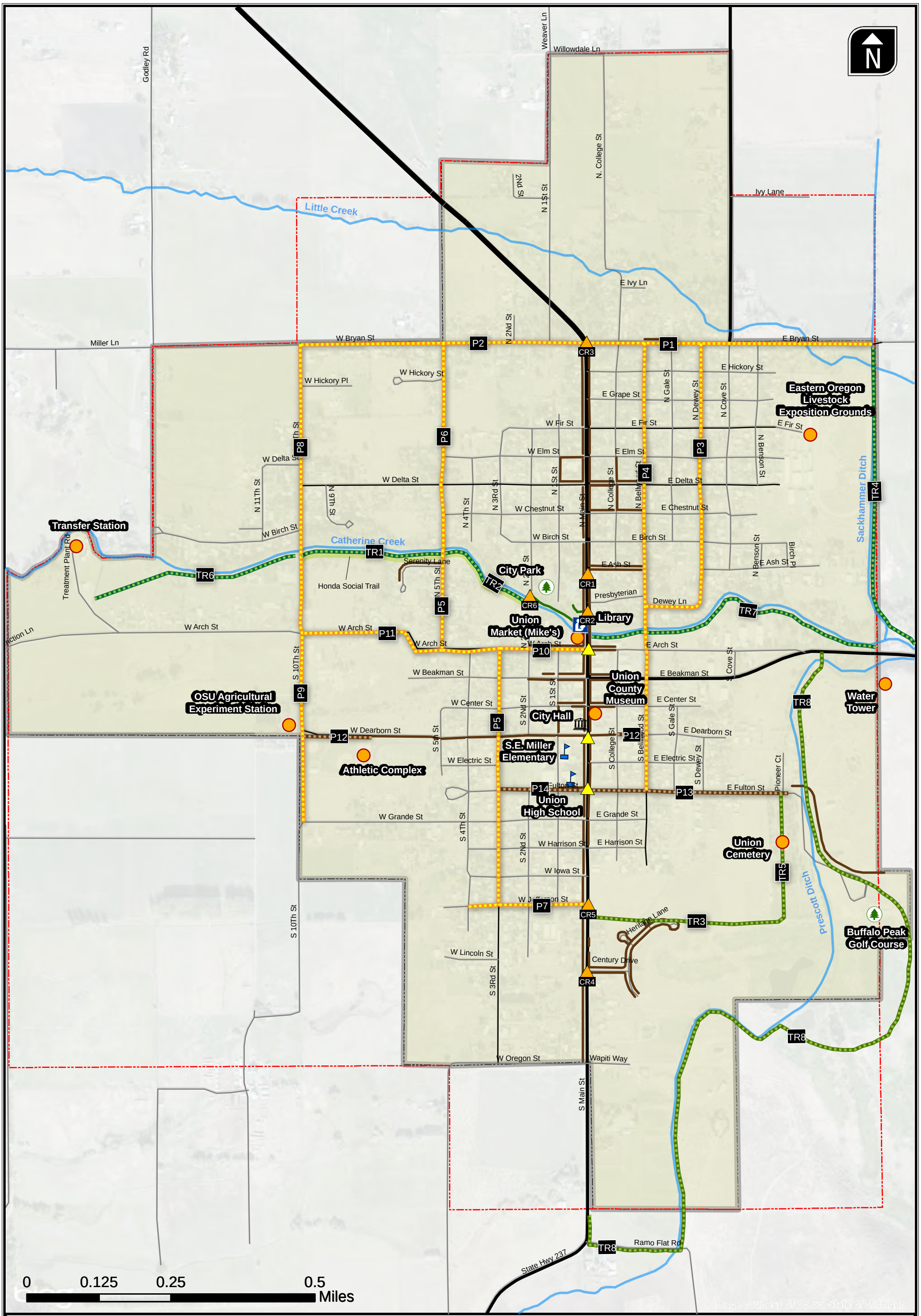
Table 10 provides an initial list of improvement opportunities that compliment Figures 10 and 11 for walking and bicycling, respectively.

Table 10 Potential Walking and Bicycling Improvement Opportunities

ID[1]	Name	From	To	Project Detail	Benefits	Notes
B1	Main Street	Beakman Street	Oregon Street	Bike Lane	Improves bicyclist accommodation on a designated bike route.	Sufficient pavement width to accommodate bike lanes without removing parking.
B2	Main Street	Bryan Street	Beakman Street	Shared Lane Markings	Improves bicyclist accommodation on a designated bike route.	Bike lane would be desirable but would require removing parking from one side of the street.
B3	Cove Street	Bryan Street	City Limit	Shoulder Bikeway	Improves bicyclist accommodation on a designated bike route.	Work with County staff to develop an improved bike facility to Cove.
B4	Main Street	Bryan Street	City Limit	Shoulder Bikeway	Improves bicyclist accommodation on a designated bike route.	Work with County staff to develop a shoulder bikeway to La Grande.
P1	Bryan Street	Main Street	East to City Limit	Sidewalk (no curb and gutter) and SLMs	Improves pedestrian/bicycle comfort on a portion of a popular walking route (5-Mile Loop).	Provide a sidewalk on south side of the street to connect to "5-mile Loop." End at gate to stock yard.
P2	Bryan Street	10th Street	Main Street	Sidewalk (no curb and gutter) and SLMs	Provides a pedestrian/bicycle route at north end of town.	Provide sidewalk on north side of street where there is available ROW and fewer conflicts with driveways.
P3	Dewey Street/Lane	Bryan Street	Bellwood Avenue	Sidewalk (no curb and gutter) and SLMs	Provides a pedestrian/bicycle route to serve northeast part of town.	Provide sidewalk on either side of the street.
P4	Bellwood Street	Bryan Street	Fulton Street	Sidewalk (no curb and gutter) and SLMs	Provides an alternate pedestrian/bicycle route to Main Street.	Bridge over Catherine Creek makes this route a viable alternative to Main Street.
P5	3rd Street	Arch Street	Fulton Street	Sidewalk (no curb and gutter) and SLMs	Provides a north-south pedestrian/bicycle route that connects to schools.	Provide sidewalk on east side of street to connect to school. Ditches present on both sides of street south of school.
P6	5th Street	Bryan Street	Catherine Creek Bridge	Sidewalk (no curb and gutter) and SLMs	Provides a north-south pedestrian/bicycle route that connects to schools.	Provide sidewalk on either side of street. Transition route to from 5th to 3rd Street at Arch.
P7	Jefferson Street	4th Street	Main Street	Sidewalk (no curb and gutter) and SLMs	Provides a pedestrian/bicycle route at south end of town.	Provide sidewalk on either side of street.
P8	10th Street	Bryan Street	Catherine Creek Bridge	Sidewalk (no curb and gutter) and SLMs	Provides a north-south pedestrian/bicycle route along key route that crosses Catherine Creek.	Provide sidewalk on the west side of street; ditch on east side. Connects to proposed Honda Trailhead.

ID[1]	Name	From	To	Project Detail	Benefits	Notes
P9	10th Street	Catherine Creek Bridge	Grande Street	Sidewalk (no curb and gutter) and SLMs	Provides a north-south pedestrian/bicycle route along key route that crosses Catherine Creek.	Provide sidewalk on either side of street.
P10	Arch Street	5th Street	Main Street	Sidewalk (no curb and gutter) and SLMs	Provides an east-west pedestrian/bicycle route.	Provide sidewalk on south side of street where there is more ROW.
P11	Arch Street	10th Street	5th Street	Sidewalk (no curb and gutter) and SLMs	Provides an east-west pedestrian/bicycle route.	Provide sidewalk on south side of street where there is more ROW.
P12	Dearborn Street	Baseball field	10th Street	Sidewalk (with curb and gutter) and SLMs	Extends sidewalk on the south side of Dearborn Street to baseball field and a 1-block segment between College Street and Bellwood Avenue.	SLMs should be placed from 10th Street to Bellwood Avenue.
P13	Fulton Street	Main Street	Union Cemetery	Sidewalk (with curb and gutter) and SLMs	Connects to existing sidewalks providing access to cemetery and golf course.	Provide sidewalks on north side (same as existing sidewalks further east on Fulton) or both sides of street.
P14	Fulton Street	3rd Street	60' west of Main Street	Sidewalk (with curb and gutter)	Provides sidewalks on the south side of the Union schools campus.	
TR1	Honda Trail	10th Street	5th Street	Trail	Promotes recreational and non-motorized travel.	Relatively few property ownership issues. Requires coordination with ditch company. South side of creek is preferred alignment.
TR2	Honda Trail	5th Street	City Park	Trail	Promotes recreational and non-motorized travel.	Some property owner issues. Requires marked crossing at 2nd Street to reach existing trail in City Park.
TR3	Fisher Field	Main Street	Century Drive	Trail	Promotes recreational and non-motorized travel.	Trail to follow sewer easement.
TR4	Stockshow Ditch	Bryan Street	Hwy 203	Trail	Promotes recreational and non-motorized travel.	Requires coordination with property owners.
TR5	Cemetery Loop Connection	Fulton Street	Century Drive	Trail	Promotes recreational and non-motorized travel.	Requires coordination with golf course and cemetery.
TR6	Honda Trail	10th Street	Transfer Station parking lot	Trail	Promotes recreational and non-motorized travel.	This section requires the most coordination with adjacent property owners.
TR7	Catherine Creek Greenway East	Main Street	East to City Limit	Trail	Promotes recreational and non-motorized travel.	Requires coordination with property owners.
TR8	Golf Course Loop Trail	Ramo Flat	Beakman St	Trail	Promotes recreational and non-motorized travel.	Requires coordination with golf course and adjacent property owners.
CR1	Main Street south of Presbyterian	-	-	Enhanced crossing	Provides a safe crossing where people routinely cross the highway	
CR2	Main Street at Ash Street	-	-	Enhanced crossing	Provides a safe crossing at a popular destination.	
CR3	Main Street and Bryan Street	-	-	Enhanced crossing	Provides an enhanced crossing facility at a blind corner.	
CR4	Main Street and Century Drive	-	-	Enhanced crossing	Provides crossing opportunity near future development.	
CR5	Jefferson Street and Main Street	-	-	Enhanced crossing	Provides access to proposed trail (TR3).	
CR6	Catherine Creek 2nd Street Crossing	North end of S. 2nd Street	South end of N. 2nd Street	Creek Crossing	Provides a north-south pedestrian/bicycle route that crosses Catherine Creek.	

[1]Refernces designations in Figures 10 and 11.



Existing Facilities

- Existing Sidewalk
- Existing Multi-use Path
- Existing Crossings
- Union City Limits
- Union UGB

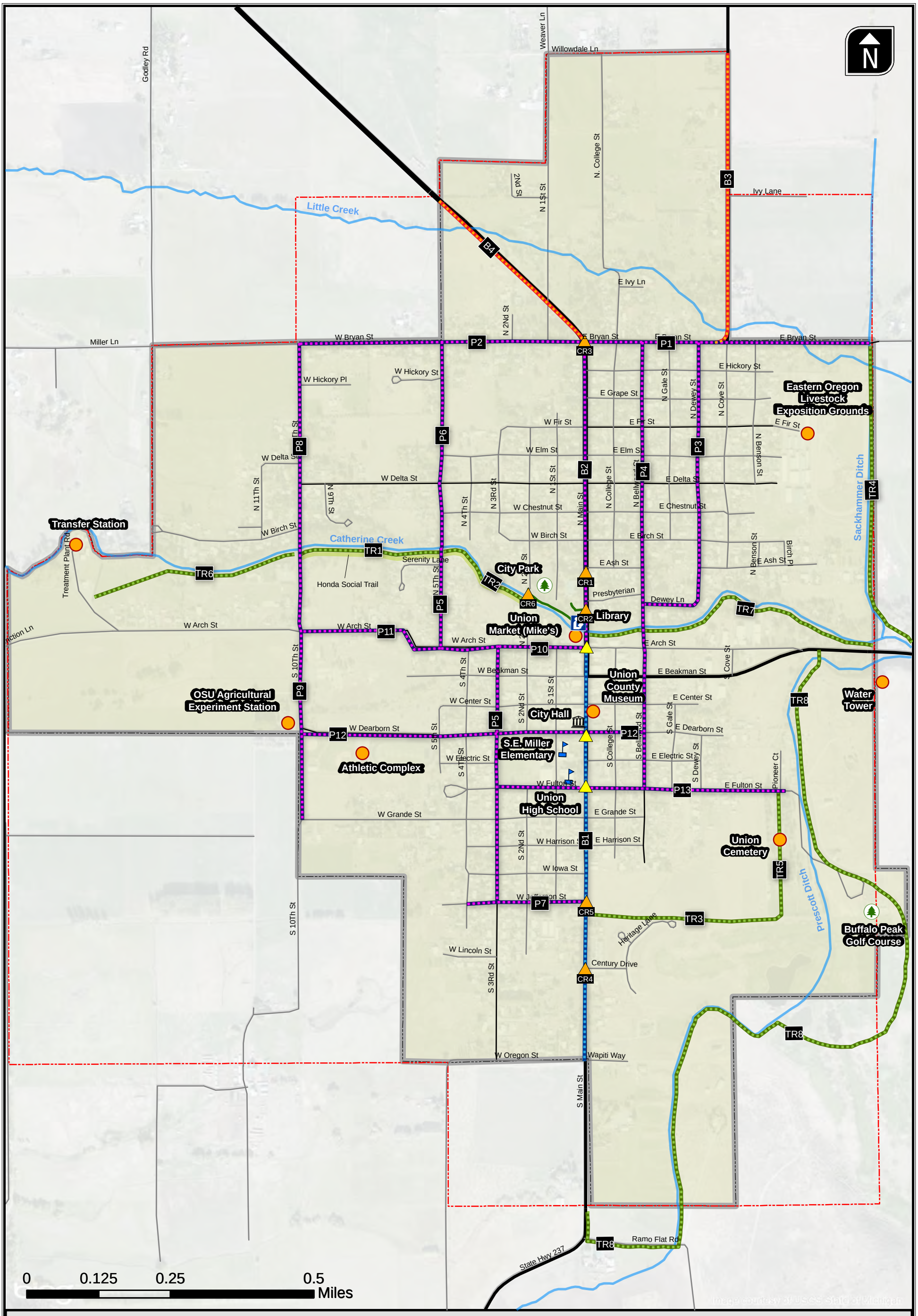
Proposed Facilities

- Sidewalk (no curb/gutter)
- Sidewalk (curb/gutter)
- Multi-use Path
- Crossings

Walking Network Opportunties

UNION OREGON

Figure 10



Existing Facilities
- Existing Multi-use Path
- Existing Crossings
- Union City Limits
- Union UGB

Proposed Facilities
- Bike Lane
- Shared Lane Markings
- Shoulder Bikeway
- Multi-use Path
- Crossings

Bicycling Network Opportunities

UNION OREGON

Figure 11

PUBLIC TRANSPORTATION SYSTEM

Northeast Oregon Transit (NEOtransit) provides public transportation services within Union County. For the City of Union, transit services are limited to the BobCat intercity bus that runs between Union to La Grande on Thursdays. There are no internal transit systems or paratransit systems and no formal park-and-ride locations offered in Union.

BobCat Intercity Service

NEOtransit offers the BobCat intercity service connecting Union to La Grande weekly on Thursdays. The service connects the La Grande Transit hub, the Union Hotel, and the Union Clinic. By reservation, stops are offered at Baretto Manufacturing, the La Grande/Union County Airport, and Northwood Manufacturing. The BobCat service is accessible to people using ADA compliant mobility devices. The service is offered at $3.50 per day which includes a pass to use the local transit system in La Grande. Table 11 details the transit schedule.

Table 11 BobCat Transit Service Fixed Route Schedule[1]

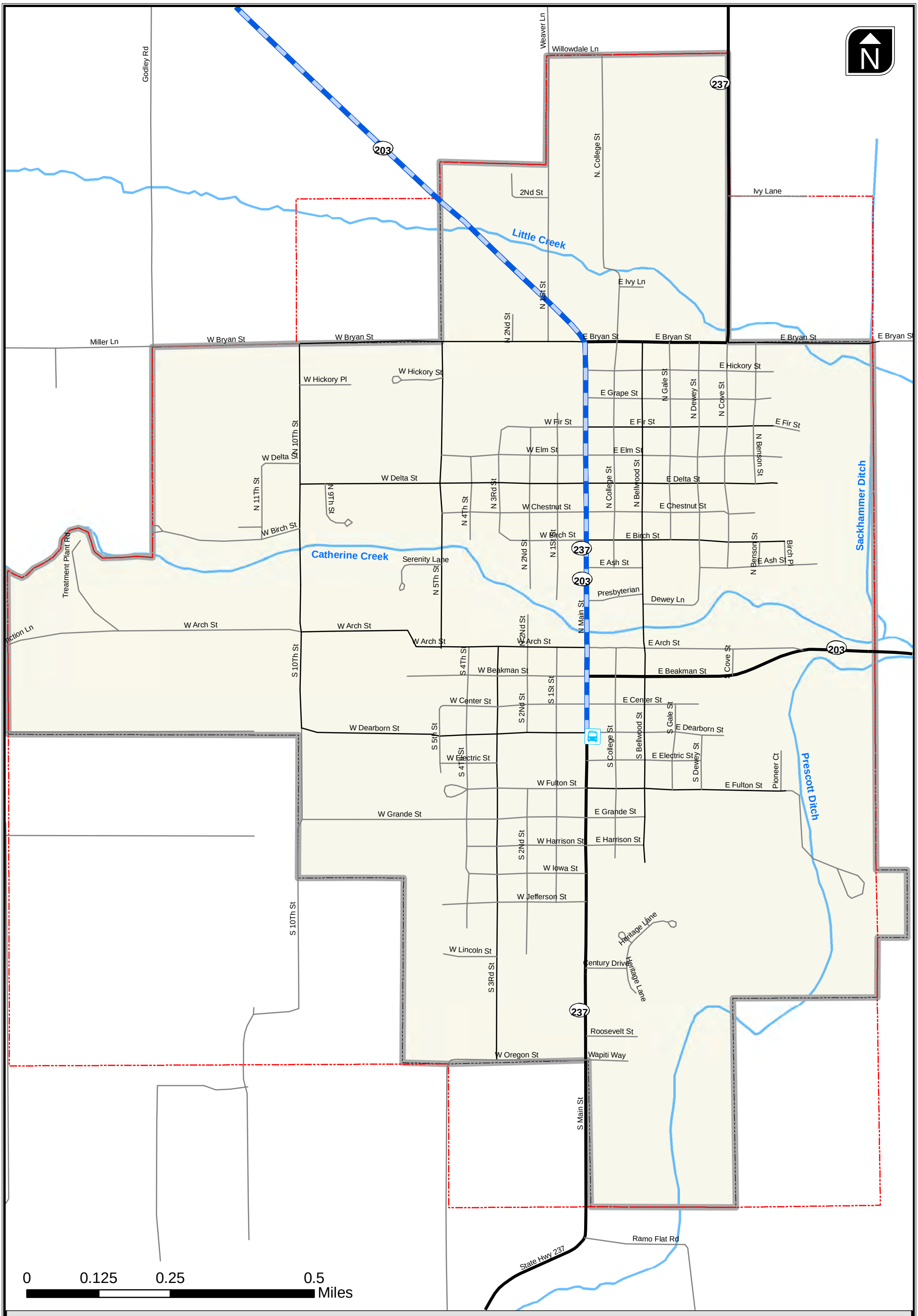
Stop	Thursday Morning		Thursday Afternoon	
	Arrival	Departure	Arrival	Departure
La Grande Transit Hub	--	9:00AM	--	3:00PM
Union Hotel	9:20AM	9:21AM	3:20PM	3:21PM
Union Clinic	9:25AM	9:40AM	3:35PM	3:40PM
La Grande Transit Hub	10:00AM	--	4:00PM	--

Source: NEO Transit. http://www.neotransit.org/union-county/elgin-union-intercity

Figure 12 shows the route BobCat Intercity Service runs.

TRUCK FREIGHT ROUTES

Regional freight through the county is primarily carried on I-84 which connects Boise through to Portland. Regionally, I-84 connects through North Powder and La Grande. Union is most directly connected to I-84 through OR 203 from La Grande. Currently, ODOT has not designated any of the state routes (OR 203 and OR 237) with formal Freight Route designations within Union. Segments of OR 203 (east of Main Street; milepost 0 to approximately milepost 7) and OR 237 (south of Oregon Street; approximately milepost 18 to milepost 25) are considered highly restricted to truck and oversize load traffic. These roads are accessible by local permits, but are not permissible for general freight use.


Godley Rd
Weaver Ln
Willowdale Ln
237
203
N. College St
2Nd St
Ivy Lane
Little Creek
E Ivy Ln
N 1St St
N 2Nd St
Miller Ln
W Bryan St
W Bryan St
E Bryan St
E Bryan St
E Bryan St
E Bryan St
W Hickory St
W Hickory Pl
E Hickory St
E Grape St
N Gale St
N Dewey St
N Cove St
W Fir St
E Fir St
E Fir St
N Benson St
W Elm St
E Elm St
W Delta St
N 10Th St
W Delta St
E Delta St
N 11Th St
N 9Th St
N 4Th St
N 3Rd St
N College St
N Bellwood St
W Chestnut St
E Chestnut St
W Birch St
E Birch St
Sackhammer Ditch
Treatment Plant Rd
Catherine Creek
Serenity Lane
N 5Th St
N 2Nd St
N 1St St
E Ash St
E Ash St
N Benson St
Birch Pl
Presbyterian
Dewey Ln
N Main St
W Arch St
W Arch St
W Arch St
W Arch St
E Arch St
S 10TH St
S 4Th St
W Beakman St
E Beakman St
S Cove St
W Center St
E Center St
S 2Nd St
S 1St St
S Gale St
W Dearborn St
S 5th St
S College St
S Bellwood St
E Dearborn St
W Electric St
S 4TH St
E Electric St
S Dewey St
W Fulton St
E Fulton St
Pioneer Ct
Prescott Ditch
W Grande St
E Grande St
W Harrison St
E Harrison St
S 2Nd St
W Iowa St
W Jefferson St
S 10TH St
Heritage Lane
W Lincoln St
Century Drive
Heritage Lane
S 3Rd St
237
Roosevelt St
W Oregon St
Wapiti Way
S Main St
Ramo Flat Rd
State Hwy 237
0
0.125
0.25
0.5
Miles
Transit Stop
Transit Route
Union City Limits
Union UGB
Arterial
Major Collector
Collector
Local
Existing Transit Service
UNION OREGON
Figure
12
H:\proj\file13445 - Union TSP Update and Goal 12 Plan\gis\Existing Conditions Figs\13445_FIG12_Transit.mxd

AIR TRANSPORTATION SYSTEM

La Grande/Union County Airport (LGD) is approximately 8.7 miles northwest of the city limits and urban grown boundary to the east of I-84. It is most directly accessible from the Exit 265 interchange along I-84. The airport is publically owned by Union County. Service is operated by Baker Aircraft and offers fueling, aircraft parking (ramp or tiedown), hangar leasing/sales, flight instruction, aircraft charter, and maintenance. Table 12 below provides information regarding the LGD runway inventory.

Table 12 LGD Runway Inventory

Detail	Runways	
	12-30	16-34
Length and Width	5600' x 100'	3876' x 60'
Approach Type	12 - nonprecision 30 - nonprecision	16 - nonprecision 34 - nonprecision
Landing Aids	12 – 2-light PAPI 30 – None	16 – 4-light PAPI 34 – None
Runway Lighting	Medium Intensity	MKD with Reflectors
Taxiway Lighting	None	None

Source: AirNav.com. http://www.airnav.com/airport/KLGD. Accessed October 24, 2013

The nearest airport providing scheduled commercial passenger service is in Pendleton, approximately 61 miles away at Eastern Oregon Regional Airport (PDT), followed by Boise, Idaho (BOI), approximately 168 miles away.

RAIL TRANSPORTATION SYSTEM

Union currently has no active freight or passenger rail service within the Union city limits. There is an abandoned rail spur that approaches from the west just south of Arch Street.

WATER TRANSPORTATION SYSTEM

There is no water based transportation in Union.

REFERENCES

1. Transportation Research Board. *Highway Capacity Manual.* 2010.
2. The Oregon Department of Transportation. *Oregon Highway Plan*. 1999.
3. The Oregon Department of Transportation. *Analysis Procedures Manual*. 2006.
4. Institute of Transportation Engineers. *Trip Generation Manual, 9th Edition*. 2012.
5. Andreson Perry & Associates. *Pavement Maintenance Plan, City of Union, Oregon*. 2013.
6. American Association of State Highway and Transportation Officials. *Geometric Design of Highways and Streets*. 2011.

APPENDICIES

Appendix 1 – Traffic Count Summary Sheets

Appendix 2 – Operations and Queuing Analysis Results

Appendix 3 – Trip Generation and Distribution

Appendix 4 – Crash Data

Appendix 5 – Qualitative MMLOS & Bicycle Level of Traffic Stress

Appendix 1 Traffic Count Summary Sheets

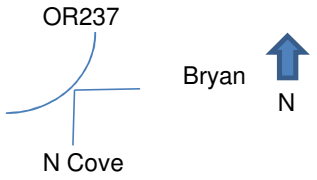
	Start Time Vehicle Count															
Movement	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
OR237 NB	5	5	5	5	6	5	5	5	9	5	10	9	9	5	13	14
OR237 NB-LT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OR237 NB-RT	2	0	2	1	0	0	0	2	0	2	0	0	0	2	2	0
OR237 SB	2	3	2	5	1	4	9	7	3	9	8	15	4	4	2	8
OR237 SB-LT to Cove St	2	0	0	0	0	0	0	0	3	0	1	0	2	1	0	0
OR237 SB-LT to Bryan St	0	2	0	1	0	0	0	0	0	0	0	0	1	0	0	1
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
NB-LT	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	0
NB-RT	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0
WB-LT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB-RT	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	13	9	14	7	9	14	14	15	16	21	25	17	15	17	23

Peak Hour				
4:15	4:30	4:45	5:00	Total
5	10	9	9	33
0	0	0	0	0
2	0	0	0	2
9	8	15	4	36
0	1	0	2	3
0	0	0	1	1
0	0	0	0	0
0	2	0	0	2
0	0	0	0	0
0	0	1	1	2
0	0	0	0	0
0	0	0	0	0
16	21	25	17	79

Intersection: US237 and North Cove
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 25
PHF 0.79

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0



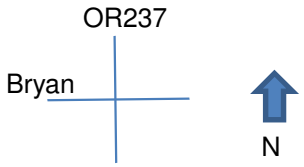
	Start Time Vehicle Count															
Movement	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
SB	16	29	15	24	17	21	24	30	37	45	38	37	35	44	30	27
SB-LT	1	3	5	2	3	3	5	2	4	6	3	4	3	6	8	7
SB-RT	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0
NB	20	14	11	13	17	13	19	24	19	25	14	6	18	9	10	9
NB-LT	2	2	1	3	2	1	3	7	0	3	0	1	2	1	1	2
NB-RT	1	5	2	2	0	3	4	3	6	6	2	6	6	5	9	7
EB	1	0	0	0	0	2	0	2	0	1	1	0	2	2	1	1
EB-LT	1	0	0	0	0	0	1	0	1	1	0	0	0	1	1	2
EB-RT	1	0	1	1	1	3	2	1	0	5	1	1	0	5	2	2
WB	2	0	0	0	0	0	1	1	1	3	4	1	1	2	0	1
WB-LT	1	1	1	3	1	1	3	4	3	3	2	0	1	1	1	0
WB-RT	7	6	2	2	5	3	6	3	5	10	8	2	5	4	9	7
	53	60	38	50	47	50	68	77	76	109	74	58	73	80	72	65

Peak Hour				
3:45	4:00	4:15	4:30	Total
30	37	45	38	150
2	4	6	3	15
0	0	1	1	2
24	19	25	14	82
7	0	3	0	10
3	6	6	2	17
2	0	1	1	4
0	1	1	0	2
1	0	5	1	7
1	1	3	4	9
4	3	3	2	12
3	5	10	8	26
77	76	109	74	336

Intersection: US237/203 and Bryan
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 109
PHF 0.77

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
WB	0	0	0	1	0	0	0	0	2	0	0	0	0	0	0	0
NB	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0
SB	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0



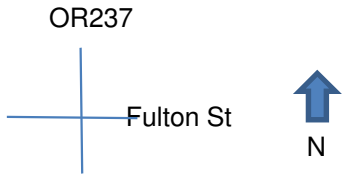
	Start Time Vehicle Count															
Movement	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	1	2	0	2	1	0	5	2	2	1	1	1	0	0	0	1
EB-LT	2	1	2	2	7	5	12	2	9	3	10	3	4	1	5	7
EB-RT	2	1	0	1	0	2	7	5	1	1	1	3	0	0	0	0
WB	1	1	0	0	0	1	4	2	1	0	1	2	0	0	0	2
WB-RT	2	5	3	3	0	1	6	6	4	5	6	5	0	2	3	5
WB-LT	2	2	1	2	0	2	3	2	1	3	1	3	0	0	4	1
NB	13	10	10	8	12	8	15	19	11	19	12	18	12	19	14	11
NB-LT	2	1	0	2	0	2	5	2	1	1	1	1	0	0	0	1
NB-RT	1	1	1	1	0	2	5	1	0	0	2	1	0	0	0	1
SB	15	8	12	10	14	13	17	21	13	13	18	18	14	18	20	16
SB-RT	2	1	1	1	1	2	13	4	5	3	3	1	0	0	3	2
SB-LT	6	8	2	2	3	3	6	4	7	5	5	5	2	2	2	4
	49	41	32	34	38	41	98	70	55	54	61	61	32	42	51	51

Peak Hour					
3:30	3:45	4:00	4:15	Total
5	2	2	1	10
12	2	9	3	26
7	5	1	1	14
4	2	1	0	7
6	6	4	5	21
3	2	1	3	9
15	19	11	19	64
5	2	1	1	9
5	1	0	0	6
17	21	13	13	64
13	4	5	3	25
6	4	7	5	22
98	70	55	54	277

Intersection: OR237 and Fulton
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 98
PHF 0.71

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	0	0	0	0	0	0	4	3	1	0	0	0	0	1	0	0
WB	0	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0
NB	0	0	0	0	0	0	1	2	0	1	0	5	2	1	0	0
SB	0	0	2	0	0	0	7	7	2	0	0	0	0	0	3	0



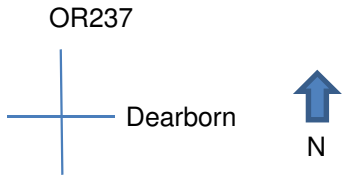
	Start Time Vehicle Count															
Dar	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
SB	21	16	20	19	13	28	16	27	16	19	25	21	20	21	24	26
SB-LT	3	3	1	2	2	2	3	1	2	3	5	4	1	4	2	1
SB-RT	3	1	1	1	0	3	2	3	2	7	6	9	2	4	5	6
NB	22	25	11	20	20	22	15	25	22	21	19	12	19	16	16	15
NB-RT	2	2	2	2	2	1	2	2	0	2	0	4	0	2	0	0
NB-LT	1	0	2	2	0	2	2	3	1	4	1	1	0	1	0	0
EB	0	0	1	2	1	1	2	2	1	1	0	0	1	0	0	0
EB-LT	2	3	2	1	2	12	7	2	5	3	4	5	3	1	2	3
EB-RT	2	0	2	2	1	3	3	3	2	3	0	2	0	2	3	0
WB	1	0	1	3	1	1	2	1	2	2	0	2	1	1	0	1
WB-RT	2	1	2	2	1	4	3	2	3	3	2	1	3	1	4	1
WB-LT	1	0	2	1	0	1	2	1	1	1	0		0	0	0	0
	60	51	47	57	43	80	59	72	57	69	62	61	50	53	56	53

Peak Hour				
3:45	4:00	4:15	4:30	Total
27	16	19	25	87
1	2	3	5	11
3	2	7	6	18
25	22	21	19	87
2	0	2	0	4
3	1	4	1	9
2	1	1	0	4
2	5	3	4	14
3	2	3	0	8
1	2	2	0	5
2	3	3	2	10
1	1	1	0	3
72	57	69	62	260

Intersection: OR237 and Dearborn
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 69
PHF 0.94

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	1	1	2	11	0	7	1	2	0	2	2	3	0	3	0	0
WB	3	3	4	0	3	9	13	2	10	5	3	3	1	1	0	0
NB	0	1	0	0	1	10	0	1	0	2	0	0	0	3	0	0
SB	0	0	1	0	2	5	6	2	1	0	0	4	0	0	0	0



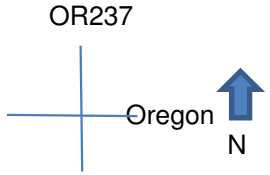
	Start Time Vehicle Count															
Movement	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
NB	15	7	4	2	4	9	6	5	4	5	3	5	6	5	8	8
NB-LT	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
NB-RT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB	4	2	6	4	6	7	5	9	9	7	5	5	6	3	1	6
SB-RT	1	1	2	1	0	3	1	2	2	5	0	0	2	0	0	4
SB-LT	1	1	0	2	1	1	0	0	0	1	0	0	0	0	1	0
WB	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
WB-LT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB-RT	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
EB	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
EB-RT	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
EB-LT	0	1	2	0	0	0	2	0	3	2	1	0	0	0	1	0
	22	12	15	10	11	20	15	16	19	20	10	10	14	8	12	19

Peak Hour					
3:30	3:45	4:00	4:15	Total
6	5	4	5	20
0	0	0	0	0
0	0	0	0	0
5	9	9	7	30
1	2	2	5	10
0	0	0	1	1
0	0	0	0	0
0	0	0	0	0
1	0	0	0	1
0	0	1	0	1
0	0	0	0	0
2	0	3	2	7
15	16	19	20	70

Intersection: US203/237 and Oregon
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 20
PHF 0.88

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



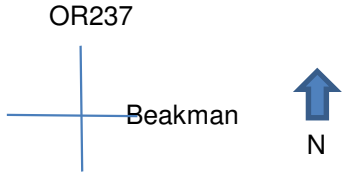
	Start Time Vehicle Count															
Movement	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
SB	42	29	18	15	17	37	41	44	30	35	35	35	25	31	35	35
SB-LT	8	4	1	3	5	6	5	3	5	7	5	3	3	2	2	2
SB-RT	1	2	1	0	2	2	1	2	2	3	2	1	3	1	1	3
NB	43	21	14	19	20	20	24	42	29	27	23	25	20	17	30	25
NB-RT	3	3	1	0	2	2	3	6	5	1	2	2	4	2	2	3
NB-LT	1	0	0	2	1	1	2	3	3	2	2	3	2	1	1	2
EB	1	2	1	1	1	2	2	5	2	1	1	1	1	2	1	2
EB-LT	0	0	2	1	1	3	2	3	3	2	2	4	3	1	1	1
EB-RT	3	0	1	0	0	3	1	2	2	2	2	2	2	1	2	2
WB	0	2	0	0	0	2	1	3	3	2	1	2	2	1	2	1
WB-LT	3	2	2	1	5	4	5	7	7	7	6	4	7	4	4	3
WB-RT	2	3	2	3	1	5	6	7	10	6	5	9	5	6	2	4
	107	68	43	45	55	87	93	127	101	95	86	91	77	69	83	83

Peak Hour				
3:30	3:45	4:00	4:15	Total
41	44	30	35	150
5	3	5	7	20
1	2	2	3	8
24	42	29	27	122
3	6	5	1	15
2	3	3	2	10
2	5	2	1	10
2	3	3	2	10
1	2	2	2	7
1	3	3	2	9
5	7	7	7	26
6	7	10	6	29
93	127	101	95	416

Intersection: US203/237 and Beakman
Count 2:00 to 6:00 PM
Date Jun-13

Peak 15 Minutes 127
PHF 0.82

	Start Time Ped Count															
Leg	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
EB	1	2	2	1	2	2	1	0	4	7	2	0	2	3	0	4
WB	2	3	0	0	3	3	14	20	4	5	4	2	2	4	2	6
NB	3	1	3	0	2	0	3	1	1	0	0	0	2	1	1	2
SB	1	0	3	0	3	0	2	1	1	2	0	1	0	0	1	2



Appendix 2 Operations and Queuing Analysis Results

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	1	0	0	0	0	1	18	0	1	32	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	7	1	0	0	0	0	1	22	0	1	40	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	73	73	46	74	79	22	52	0	0	22	0	0
Stage 1	48	48	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	49	54	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	923	821	1029	921	815	1061	1567	-	-	1607	-	-
Stage 1	971	859	-	998	878	-	-	-	-	-	-	-
Stage 2	998	878	-	969	854	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	922	819	1029	919	813	1061	1567	-	-	1607	-	-
Mov Capacity-2 Maneuver	922	819	-	919	813	-	-	-	-	-	-	-
Stage 1	970	858	-	997	877	-	-	-	-	-	-	-
Stage 2	997	877	-	967	853	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	0	0.4	0.2
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	906	0	1607	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	+	0.001	-	-
HCM Control Delay (s)	7.299	0	-	9	0	7.242	0	-
HCM Lane LOS	A	A		A	A	A	A	
HCM 95th %tile Q(veh)	0.002	-	-	0.029	+	0.002	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	4	7	13	9	27	11	88	18	16	161	2
Conflicting Peds, #/hr	4	0	2	2	0	4	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	5	0	5	0	3	0	0	3	0
Mvmt Flow	3	5	9	17	12	35	14	114	23	21	209	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	438	426	216	422	416	132	216	0	0	142	0	0
Stage 1	256	256	-	159	159	-	-	-	-	-	-	-
Stage 2	182	170	-	263	257	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.545	4	3.345	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	532	524	829	537	530	909	1366	-	-	1453	-	-
Stage 1	753	699	-	836	770	-	-	-	-	-	-	-
Stage 2	824	762	-	736	699	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	490	507	825	514	512	904	1364	-	-	1451	-	-
Mov Capacity-2 Maneuver	490	507	-	514	512	-	-	-	-	-	-	-
Stage 1	742	686	-	824	759	-	-	-	-	-	-	-
Stage 2	770	751	-	710	686	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	10.9	0.7	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1364	-	-	636	674	1451	-	-
HCM Lane V/C Ratio	0.01	-	-	0.027	0.094	0.014	-	-
HCM Control Delay (s)	7.667	0	-	10.8	10.9	7.517	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.032	-	-	0.082	0.312	0.044	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM research does not support the intersection geometry. Minor approaches are expected on either sid

Intersection	
Intersection Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	9	8	27	9	28	11	103	15	21	106	10
Conflicting Peds, #/hr	4	0	2	2	0	4	13	0	33	33	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	12	11	10	33	11	35	14	127	19	26	131	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	383	370	174	371	367	173	147	0	0	150	0	0
Stage 1	193	193	-	168	168	-	-	-	-	-	-	-
Stage 2	190	177	-	203	199	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	579	563	875	589	565	876	1447	-	-	1444	-	-
Stage 1	813	745	-	839	763	-	-	-	-	-	-	-
Stage 2	816	756	-	804	740	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	518	542	848	542	544	849	1407	-	-	1404	-	-
Mov Capacity-2 Maneuver	518	542	-	542	544	-	-	-	-	-	-	-
Stage 1	801	728	-	827	752	-	-	-	-	-	-	-
Stage 2	742	745	-	746	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	11.4	0.6	1.2
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1407	-	-	595	644	1404	-	-
HCM Lane V/C Ratio	0.01	-	-	0.056	0.123	0.018	-	-
HCM Control Delay (s)	7.584	0	-	11.4	11.4	7.612	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.029	-	-	0.178	0.417	0.056	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	4	8	3	5	10	10	93	4	12	93	19
Conflicting Peds, #/hr	3	0	3	3	0	3	6	0	20	20	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	20	20	20	0	3	0	0	3	0
Mvmt Flow	15	4	9	3	5	11	11	99	4	13	99	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	271	265	132	269	273	124	122	0	0	106	0	0
Stage 1	138	138	-	125	125	-	-	-	-	-	-	-
Stage 2	133	127	-	144	148	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.68	4.18	3.48	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	686	644	923	648	605	881	1478	-	-	1498	-	-
Stage 1	870	786	-	837	759	-	-	-	-	-	-	-
Stage 2	875	795	-	818	742	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	652	630	905	618	592	864	1453	-	-	1473	-	-
Mov Capacity-2 Maneuver	652	630	-	618	592	-	-	-	-	-	-	-
Stage 1	861	777	-	828	751	-	-	-	-	-	-	-
Stage 2	837	787	-	785	733	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.1	0.7	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1453	-	-	709	724	1473	-	-
HCM Lane V/C Ratio	0.007	-	-	0.039	0.026	0.009	-	-
HCM Control Delay (s)	7.496	0	-	10.3	10.1	7.465	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.022	-	-	0.122	0.081	0.026	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	24	6	8	7	4	21	5	65	3	22	70	16
Conflicting Peds, #/hr	9	0	3	3	0	9	4	0	5	5	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	0	0
Mvmt Flow	34	8	11	10	6	30	7	92	4	31	99	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	315	300	124	308	309	108	130	0	0	105	0	0
Stage 1	181	181	-	117	117	-	-	-	-	-	-	-
Stage 2	134	119	-	191	192	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	642	616	932	648	609	951	1468	-	-	1499	-	-
Stage 1	825	754	-	892	803	-	-	-	-	-	-	-
Stage 2	874	801	-	815	745	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	598	590	921	613	584	940	1462	-	-	1493	-	-
Mov Capacity-2 Maneuver	598	590	-	613	584	-	-	-	-	-	-	-
Stage 1	815	732	-	881	793	-	-	-	-	-	-	-
Stage 2	833	791	-	775	723	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	9.8	0.5	1.5
HCM LOS	B	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	644	788	1493	-	-
HCM Lane V/C Ratio	0.005	-	-	0.083	0.057	0.021	-	-
HCM Control Delay (s)	7.474	0	-	11.1	9.8	7.462	0	-
HCM Lane LOS	A	A		B	A	A	A	
HCM 95th %tile Q(veh)	0.015	-	-	0.271	0.182	0.064	-	-

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	1	0	0	0	0	1	21	0	1	34	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	7	1	0	0	0	0	1	26	0	1	42	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	79	79	48	79	85	26	54	0	0	26	0	0
Stage 1	51	51	-	28	28	-	-	-	-	-	-	-
Stage 2	28	28	-	51	57	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	914	815	1027	914	809	1056	1564	-	-	1601	-	-
Stage 1	967	856	-	994	876	-	-	-	-	-	-	-
Stage 2	994	876	-	967	851	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	913	813	1027	912	807	1056	1564	-	-	1601	-	-
Mov Capacity-2 Maneuver	913	813	-	912	807	-	-	-	-	-	-	-
Stage 1	966	855	-	993	875	-	-	-	-	-	-	-
Stage 2	993	875	-	965	850	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	0	0.3	0.2
HCM LOS	A	A		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1564	-	-	897	0	1601	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	+	0.001	-	-
HCM Control Delay (s)	7.304	0	-	9.1	0	7.25	0	-
HCM Lane LOS	A	A		A	A	A	A	
HCM 95th %tile Q(veh)	0.002	-	-	0.029	+	0.002	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	5	6	7	17	10	28	13	101	21	18	176	8
Conflicting Peds, #/hr	4	0	2	2	0	4	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	5	0	5	0	3	0	0	3	0
Mvmt Flow	6	8	9	22	13	36	17	131	27	23	229	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	492	481	240	476	473	151	243	0	0	162	0	0
Stage 1	285	285	-	183	183	-	-	-	-	-	-	-
Stage 2	207	196	-	293	290	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.545	4	3.345	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	490	487	804	494	493	887	1335	-	-	1429	-	-
Stage 1	727	679	-	812	752	-	-	-	-	-	-	-
Stage 2	800	742	-	709	676	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	446	468	800	468	474	883	1333	-	-	1427	-	-
Mov Capacity-2 Maneuver	446	468	-	468	474	-	-	-	-	-	-	-
Stage 1	714	664	-	798	739	-	-	-	-	-	-	-
Stage 2	742	729	-	678	661	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	11.6	0.7	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	549	617	1427	-	-
HCM Lane V/C Ratio	0.013	-	-	0.043	0.116	0.016	-	-
HCM Control Delay (s)	7.735	0	-	11.8	11.6	7.565	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.038	-	-	0.133	0.391	0.05	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

HCM research does not support the intersection geometry. Minor approaches are expected on either sid

Intersection	
Intersection Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	9	8	27	9	32	11	125	15	21	121	10
Conflicting Peds, #/hr	4	0	2	2	0	4	13	0	33	33	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	3	0
Mvmt Flow	12	11	10	33	11	40	14	154	19	26	149	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	431	415	193	417	413	201	166	0	0	177	0	0
Stage 1	211	211	-	195	195	-	-	-	-	-	-	-
Stage 2	220	204	-	222	218	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	538	531	854	550	532	845	1424	-	-	1411	-	-
Stage 1	796	731	-	811	743	-	-	-	-	-	-	-
Stage 2	787	737	-	785	726	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	476	511	828	505	512	819	1385	-	-	1372	-	-
Mov Capacity-2 Maneuver	476	511	-	505	512	-	-	-	-	-	-	-
Stage 1	785	713	-	799	732	-	-	-	-	-	-	-
Stage 2	709	726	-	727	708	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	11.7	0.6	1.1
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1385	-	-	559	618	1372	-	-
HCM Lane V/C Ratio	0.01	-	-	0.06	0.136	0.019	-	-
HCM Control Delay (s)	7.625	0	-	11.8	11.7	7.674	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.03	-	-	0.19	0.468	0.058	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	25	10	19	4	5	10	12	103	7	12	107	19
Conflicting Peds, #/hr	3	0	3	3	0	3	6	0	20	20	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	20	20	20	0	3	0	0	3	0
Mvmt Flow	27	11	20	4	5	11	13	110	7	13	114	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	302	298	147	310	305	136	137	0	0	120	0	0
Stage 1	152	152	-	142	142	-	-	-	-	-	-	-
Stage 2	150	146	-	168	163	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.68	4.18	3.48	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	654	617	905	609	580	867	1459	-	-	1480	-	-
Stage 1	855	775	-	820	746	-	-	-	-	-	-	-
Stage 2	857	780	-	793	730	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	619	602	888	567	566	850	1435	-	-	1455	-	-
Mov Capacity-2 Maneuver	619	602	-	567	566	-	-	-	-	-	-	-
Stage 1	844	765	-	810	737	-	-	-	-	-	-	-
Stage 2	818	770	-	744	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	10.4	0.7	0.7
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1435	-	-	689	687	1455	-	-
HCM Lane V/C Ratio	0.009	-	-	0.083	0.029	0.009	-	-
HCM Control Delay (s)	7.531	0	-	10.7	10.4	7.496	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.027	-	-	0.272	0.091	0.027	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	24	6	8	7	6	21	5	80	3	22	93	17
Conflicting Peds, #/hr	9	0	3	3	0	9	4	0	5	5	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	0	0
Mvmt Flow	34	8	11	10	8	30	7	113	4	31	131	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	371	354	157	362	364	129	164	0	0	126	0	0
Stage 1	214	214	-	138	138	-	-	-	-	-	-	-
Stage 2	157	140	-	224	226	-	-	-	-	-	-	-
Follow-up Headway	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Capacity-1 Maneuver	589	574	894	598	567	926	1427	-	-	1473	-	-
Stage 1	793	729	-	870	786	-	-	-	-	-	-	-
Stage 2	850	785	-	783	721	-	-	-	-	-	-	-
Time blocked-Platoon, %								-	-		-	-
Mov Capacity-1 Maneuver	545	550	884	564	543	915	1421	-	-	1467	-	-
Mov Capacity-2 Maneuver	545	550	-	564	543	-	-	-	-	-	-	-
Stage 1	783	707	-	859	776	-	-	-	-	-	-	-
Stage 2	806	775	-	743	699	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	10.3	0.4	1.3
HCM LOS	B	B		

Minor Lane / Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1421	-	-	594	733	1467	-	-
HCM Lane V/C Ratio	0.005	-	-	0.09	0.065	0.021	-	-
HCM Control Delay (s)	7.546	0	-	11.7	10.3	7.507	0	-
HCM Lane LOS	A	A		B	B	A	A	
HCM 95th %tile Q(veh)	0.015	-	-	0.296	0.209	0.065	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Appendix 3 Trip Generation and Distribution

Assume: 65 new home starts

~~Map #~~	TAZ	Category	Land Use Description	ITE Land Use	Code	% Total House	Units	Daily	PM Peak In	PM Peak Out	PM Peak Total	Notes
~~8~~	1	Residential Homes	Single family homes	Single-Family Detached Housing	210	50%	33	*380*	25	15	40	New subdivision and in-fill
~~1~~	2	Residential Homes	Single family homes	Single-Family Detached Housing	210	10%	7	*90*	5	5	10	In-fill
~~2~~	3	Residential Homes	Single family homes	Single-Family Detached Housing	210	30%	20	*240*	15	10	25	NW parcel development and in-fill
~~2~~	4	Residential Homes	Single family homes	Single-Family Detached Housing	210	10%	7	*90*	5	5	10	In-fill
	2	Light Industrial	Small operation, no store front	General Light Industrial	110	--	20	*60*	0	10	10	Light industrial without a store front
	2	Manufacturing		Manufacturing	140	--	15	*30*	5	10	15	Small manufacturing operation

Distribution of traffic volumes was determined by allocating newly generated trips from future development between TAZs and via the state highways entering/exiting the Union city limits. Due to the grid like system of Union, there are likely a significant number of trips between zones that do not pass through the study intersections. As a result, volumes were allocated through the network based primarily on the collector grid to connect the new trip generators and attractors. The tables to the right show the in/out volumes for each zone and detail the destinations.

To/From Description	VIA	TAZ 1 FROM	TAZ 1 TO
		IN 25	OUT 15
La Grande via OR203	N 203	10	5
Cove via OR 237	N 237	3	1
North Powder via OR 237	S 237	2	1
Medical Springs via OR 203	E 203	1	3
TAZ 1	TAZ 1	0	0
TAZ 2	TAZ 2	6	2
TAZ 3	TAZ 3	2	2
TAZ 4	TAZ 4	1	1
	TOT	**25**	**15**

TAZ 2			
		IN 10	OUT 25
VIA		FROM	TO
N 203		4	8
N 237		1	2
S 237		0	1
E 203		0	5
TAZ 1		2	6
TAZ 2		0	0
TAZ 3		2	2
TAZ 4		1	1
TOT		**10**	**25**

TAZ 3			
		IN 15	OUT 10
VIA		FROM	TO
N 203		6	3
N 237		1	1
S 237		1	0
E 203		2	1
TAZ 1		2	2
TAZ 2		2	2
TAZ 3		0	0
TAZ 4		1	1
TOT		**15**	**10**

TAZ 4			
		IN 5	OUT 5
VIA		FROM	TO
N 203		2	1
N 237		0	0
S 237		0	0
E 203		0	1
TAZ 1		1	1
TAZ 2		1	1
TAZ 3		1	1
TAZ 4		**0**	**0**
TOT		**5**	**5**

Appendix 4 Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

City of Union
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2012														
REAR-END	0	1	0	1	0	1	0	1	0	1	0	0	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	0	0	0
2012 TOTAL	0	1	1	2	0	1	0	2	0	2	0	0	0	0
YEAR: 2011														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
SIDESWIPE - MEETING	0	1	0	1	0	1	0	1	0	1	0	0	0	1
2011 TOTAL	0	1	1	2	0	1	0	2	0	2	0	1	0	1
YEAR: 2010														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	1	0	1	0	0	0	1
REAR-END	0	0	1	1	0	0	0	1	0	1	0	0	0	1
2010 TOTAL	0	0	2	2	0	0	0	2	0	2	0	0	0	2
YEAR: 2009														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	0	0	0
HEAD-ON	0	1	0	1	0	1	0	0	1	0	1	0	0	0
REAR-END	0	1	0	1	0	1	0	0	1	1	0	0	0	1
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2009 TOTAL	0	2	3	5	0	2	0	1	4	2	3	2	0	1
FINAL TOTAL	0	4	7	11	0	4	0	7	4	8	3	3	0	4

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

066 LA GRANDE-BAKER

City of Union
January 1, 2008 through December 31, 2012

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	VEH TYPE	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00097	Y	N	N	N	N	06/05/2010	UNION	1	06		CURVE		N	Y	CLR	FIX OBJ	01	NONE	0	STRGHT										072,030	27,30
STATE						Sat	UNION	0	0	MAIN ST	N	(NONE)	UNKNOWN	N	DRY	FIX		PRVTE		N S									007	072,030	00
						4P		15.87		BRYAN AVE	06			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	27	M	OR-Y		050,016	038		27,30
												(02)															OR<25					
00121	Y	N	N			06/10/2012	UNION	1	06		STRGHT		N	N	CLR	S-1STOP	01	NONE	0	STRGHT											07
COUNTY						Sun	UNION	0	0	MAIN ST	N	(NONE)	NONE	N	DRY	REAR		PRVTE		N S									000		00
						5P		16.00		GRAPE ST	03			N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	26	F	OR-Y		050,043	000		07
												(02)															OR<25					
																	02	NONE	0	STOP										011	004	00
																		PRVTE		N S									000		00
																		PSNGR CAR			01	DRVR	NONE	24	F	OR-Y		000	000		00
																											OR<25					
00104	N	N	N			04/07/2011	UNION	1	06		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	0	STRGHT											07
NO RPT						Thu	UNION	0	0	ELM ST	N		UNKNOWN	N	DRY	REAR		PRVTE		N S									000		00
						5P		16.13		MAIN ST	06	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	64	F	OR-Y		026	000		07
																											OR<25					
																	02	NONE	0	STOP										012		00
																		PRVTE		N S									000		00
																		PSNGR CAR			01	DRVR	NONE	69	M	OR-Y		000	000		00
																											OR<25					
00179	N	N	N	N	N	09/24/2010	UNION	1	06		STRGHT		N	Y	CLR	PRKD MV	01	NONE	0	STRGHT											21
CITY						Fri	UNION	0	0	MAIN ST	N	(NONE)	NONE	N	DRY	REAR		PRVTE		N S									000		21
						9A		16.42		ARCH ST	03			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	64	M	OR-Y		026	000		12
												(02)															OR<25					
																	02	NONE	0	PRKD-P										008		00
																		PRVTE		N S											
																		PSNGR CAR													
00239	N	N	N	N	N	10/08/2011	UNION	1	06		STRGHT		N	Y	CLR	O-STRGHT	01	NONE	0	STRGHT										013		32,05
STATE						Sat	UNION	0	0	MAIN ST	N	(NONE)	UNKNOWN	N	DRY	SS-M		PRVTE		N S									000	013	00
						10A		16.44		ARCH ST	06			N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	58	M	OR-Y		052,080	028		32,05
												(02)															OR<25					
																	02	POLCE	0	STOP										011		00
																		PUBLC		S N									000		00
																		PSNGR CAR			01	DRVR	INJC	58	M	OR-Y		000	000		00
																											OR<25					
																	03	NONE	0	PRKD-P										008		00
																		PRVTE		S N											
																		PSNGR CAR													
																	04	NONE	0	PRKD-P										008		00
																		PRVTE		S N											
																		PSNGR CAR													

066 LA GRANDE-BAKER

City of Union
January 1, 2008 through December 31, 2012

SER# / INVEST	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / LIGHT	SURF	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00275	N	N	N			11/11/2009	UNION	1	06		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											02
NO RPT						Wed	UNION	0 0		ARCH ST	CN		STOP SIGN	N	WET	TURN		PRVTE	N S									000		00
						4P		16.46		MAIN ST	04	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y OR<25		000	000		00
																		02	NONE 0	TURN-R									015		00
																			PRVTE	W S											
																			PSNGR CAR		01	DRVR	NONE	16	F	OR-Y OR<25		028	000		02
00090	N	N	Y			03/22/2009	UNION	1	07		STRGHT		N	Y	RAIN	PRKD MV	01	NONE 0	STRGHT											059	16
STATE						Sun	UNION	0 0		MAIN ST	S	(NONE)	NONE	N	WET	REAR		PRVTE	S N									000	059	00
						10A		16.52		BEAKMAN ST	04	(02)		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	42	M	OTH-Y OR<25		026	025		16
																		02	NONE 0	PRKD-P									008		00
																			PRVTE	S N											
																			PSNGR CAR												
00219	N	N	N			10/05/2012	UNION	1	07		ALLEY		N	N	CLR	S-1TURN	01	NONE 0	STRGHT											06
NONE						Fri	UNION	0 0		MAIN ST	S	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	N S									031		00
						9A		16.53		BEAKMAN ST	04	(02)		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25		019	000		06
																		02	NONE 0	TURN-L									019		00
																			PRVTE	N E											
																			PSNGR CAR		01	DRVR	NONE	68	M	OR-Y OR<25		000	000		00
00295	Y	Y	N			12/17/2009	UNION	1	06		CURVE		N	N	RAIN	O-STRGHT	01	NONE 0	STRGHT											079,062	05,33
COUNTY						Thu	UNION	0 0		MAIN ST	N	(NONE)	UNKNOWN	N	WET	HEAD		PRVTE	S N									000	079,062	00
						8P		999.99		BRYAN AVE	03	(02)		N	DARK	INJ		PSNGR CAR		01	DRVR	INJB	62	M	OR-Y OR<25		050,051	000		05,33
																		02	NONE 0	STRGHT									000		00
																			PRVTE	N S											
																			PSNGR CAR		01	DRVR	NONE	37	M	OR-Y OR<25		000	000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF UNION, UNION COUNTY

City of Union

January 1, 2008 through December 31, 2012

SER# / INVEST	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00291	N	N	N			11/28/2009	09	5TH ST	STRGHT		N	N	RAIN	OTH OBJ	01	NONE 0	STRGHT										100	
NO RPT						Sat	100	ELM ST	N	(NONE)	UNKNOWN	N	ICE	FIX		PRVTE	N S									000	100	00
						2A			08			N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		000	000		12
										(02)													OR<25					
00182	N	N	N			07/30/2009	09	BELLWOOD ST	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											03
NO RPT						Thu	0	BIRCH ST	CN		STOP SIGN	N	DRY	ANGL		PRVTE	W E									000		00
						9A			04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		021	000		03
																							OR<25					
															02	NONE 0	STRGHT											
																PRVTE	S N									000		00
																PSNGR CAR		01	DRVR	NONE	69	F	OR-Y		000	000		00
																							OR<25					

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP ANOTHER VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF-ROAD
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS--RAG	DISREGARDED R-A-G TRAFFIC SIGNAL.
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST CLOTHING NOT VISIBLE
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1TURN	FROM OPPOSITE DIRECTION - ONE TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	FAILED TO DIM LIGHTS (UNTIL 4/1/97) / INATTENTION (AFTER 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY (DELIBERATELY TRAVELING ON WRONG SIDE)
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAYON RD	STANDING OR LYING IN ROADWAY
073	ELUDING	ELUDING
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVERCORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	PED INV	PEDESTRIAN INVOLVED (NON-PEDESTRIAN ACCIDENT)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	BIKE INV	TRICYCLE-BICYCLE INVOLVED
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE (OCCUPANTS ONLY)
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BARS OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING (ON BRIDGE AND APPROACH)
047	BR ABUT	BRIDGE ABUTMENT (APPROACH ENDS)
048	BR COLMN	BRIDGE PILLAR OR COLUMN (EVEN THOUGH STRUCK PROTECTIVE GUARD RAIL FIRST)
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	SPEED BUMP, OTHER BUMP, POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	HOLE	CHUCKHOLE IN ROAD, LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ F MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY OTHER MOVING OR FLYING OBJECT
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTH ACDT	ACCIDENT RELATED TO ANOTHER SEPARATE ACCIDENT
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE (ON PAR OR REPORT)
093	CELL-POL	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL-WTN	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	UNKNOWN TYPE OF FIXED OBJECT
101	OTHER OBJ	OTHER OR UNKNOWN OBJECT, NOT FIXED
104	OUTSIDE V	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS AND/OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS AND/OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR/TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE
125	SHLDR	SHOULDER GAVE WAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, MOTOR SCOOTER, OR MOTOR BICYCLE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 203/237 La Grande-Baker Hwy (Hwy 066) (Main St) & OR 203 Medical Springs Hwy (Hwy 340) (Beakman St)
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 203 La Grande-Baker Highway (Hwy 066) Main Street & OR 237 Cove Highway (Hwy 342) Bryan Street
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 237 Cove Highway (Hwy 342) & Cove Street
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 237 La Grande-Baker Hwy (Hwy 066) (Main St) & Dearborn Street
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 237 La Grande-Baker Hwy (Hwy 066) (Main St) & Fulton Street
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 237 La Grande-Baker Hwy (Hwy 066) (Main St) & Oregon Street/ Wapiti Way
January 1, 2008 through December 31, 2012

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR:														
TOTAL														
FINAL TOTAL														

Disclaimer: A higher number of crashes are reported for the 2011 data file compared to previous years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

Appendix 5 Qualitative MMLOS and Bicycle Level of Traffic Stress

SEG	STREET	FROM	TO	BLTS_SEG	BLTS_APP	BLTS_XING	BLTS_TOT	PED_OTLW	PED_BLSW	PED_BUFF	PED_SW	PED_PAVE	PED_VOLSP	PED_TC	PED_XINGW	PED_MED	PED_MMLOS	AUTO_VC	AUTO_DEL	AUTO_SAFE	AUTO_MMLOS
1	MAIN	OREGON	HARRISON	1		1	1	3	2	1	2	3	3	3	2	1	2	3	3	3	3
2	MAIN	HARRISON	FULTON	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
3	MAIN	FULTON	DEARBORN	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
4	MAIN	DEARBORN	BEAKMAN	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
5	MAIN	BEAKMAN	ARCH	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
6	MAIN	ARCH	cath creek	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
7	MAIN	cath creek	DELTA	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
8	MAIN	DELTA	FIR	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
9	MAIN	FIR	BRYAN	1		1	1	3	3	2	3	3	3	3	2	1	3	3	3	3	3
10	MAIN	BRYAN	city limits	4		1	4	1	1	2	3	3	1	3	2	1	2	3	3	3	3
11	BRYAN	10TH	5TH	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
12	BRYAN	5TH	MAIN	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
13	BRYAN	MAIN	BELLWOOD	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
14	BRYAN	BELLWOOD	COVE	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
15	BEAKMAN	MAIN	COLLEGE	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
16	BEAKMAN	COLLEGE	BELLWOOD	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
17	BEAKMAN	BELLWOOD	COVE	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
18	BEAKMAN	COVE	city limits	1		1	1	2	2	1	1	2	3	3	3	1	2	3	3	3	3
19	FIR	MAIN	BELLWOOD	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
20	FIR	BELLWOOD	BENSON	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
21	DELTA	10TH	5TH	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
22	DELTA	5TH	MAIN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
23	DELTA	MAIN	BELLWOOD	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
24	DELTA	BELLWOOD	BENSON	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
25	ARCH	10TH	5TH	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
26	ARCH	5TH	3RD	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
27	ARCH	3RD	MAIN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
28	DEARBORN	10TH	sports	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
29	DEARBORN	sports	3RD	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
30	DEARBORN	3RD	MAIN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
31	FULTON	MAIN	BELLWOOD	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
32	FULTON	BELLWOOD	PIONEER	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
33	10TH	BRYAN	DELTA	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
34	10TH	DELTA	cath creek	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
35	10TH	cath creek	ARCH	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
36	10TH	ARCH	DEARBORN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
37	5TH	BRYAN	DELTA	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
38	5TH	DELTA	cath creek	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
39	5TH	cath creek	ARCH	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
40	3RD	ARCH	DEARBORN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
41	3RD	DEARBORN	OREGON	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
42	BELLWOOD	BRYAN	FIR	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
43	BELLWOOD	FIR	DELTA	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
44	BELLWOOD	DELTA	cath creek	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
45	BELLWOOD	cath creek	BEAKMAN	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
46	BELLWOOD	BEAKMAN	FULTON	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
47	BELLWOOD	FULTON	HARRISON	1		1	1	1	2	1	1	2	3	3	3	1	2	3	3	3	3
48	COVE	BRYAN	city limits	4		1	4	1	1	2	3	3	1	3	2	1	2	3	3	3	3

Variable	Definition
SEG	Segment Number; corresponds to GIS OBJECTID
STREET	Street segment
FROM	From north/west block
TO	To south/east block
BLTS_SEG	Bicycle level of traffic stress segment rating
BLTS_APP	Bicycle level of traffic stress intersection approach rating
BLTS_XING	Bicycle level of traffic stress intersection crossing rating
BLTS_TOT	Final bicycle level of traffic stress rating
PED_OTLW	Pedestrian MMLOS rating for outside travel lane width
PED_BLSW	Pedestrian MMLOS rating for bike lane/shoulder width
PED_BUFF	Pedestrian MMLOS rating for presence of buffers
PED_SW	Pedestrian MMLOS rating for sidewalk presence
PED_PAVE	Pedestrian MMLOS rating for pavement condition
PED_VOLSP	Pedestrian MMLOS rating for traffic volume and speed
PED_TC	Pedestrian MMLOS rating for traffic control considerations
PED_XINGW	Pedestrian MMLOS rating for crossing width
PED_MED	Pedestrian MMLOS rating for presence of median isalnds
AUTO_VC	Auto MMLOS rating for V/C
AUTO_DEL	Auto MMLOS rating for delay
AUTO_SAFE	Auto MMLOS rating for safety

BLTS Rating	
1	LTS 1 - lowest stress
2	LTS 2 - little stress
3	LTS 3 - moderate stress
4	LTS 4 - high stress

MMLOS Rating	
1	Poor
2	Fair
3	Good

Appendix 6 SHPO Query

Oregon Historic Sites Search Results List

Property Name	Address/Location	City	County	Yr Built	Elig	NR Stat
Home Independent Telephone Company, Inc		Union	Union	c.1970	NP	NHD
	401 N 1st St	Union	Union	c.1925	NC	NHD
	425 N 1st St	Union	Union	c.1960	NP	NHD
Creamery	E Arch St	Union	Union	1922	EC	NHD
Fruit Warehouse	E Arch St	Union	Union	c.1910	EC	NHD
Warehouse	E Arch St	Union	Union	c.1905	EC	NHD
Freight Depot	E Arch St	Union	Union	1893	EC	NHD
Wash House	169 W Arch St	Union	Union	c.1920	NC	NHD
Wright's Hall	183-185 W Arch St	Union	Union	1875	NC	NHD
McCaslin Lumber Co	219 E Beakman St	Union	Union	1894	EC	NHD
Wilson Brothers Brick Building	101 S Main St	Union	Union	1890	EC	NHD
Wright's Drug Store Building	105 N Main St	Union	Union	1903	EC	NHD
Knights Of Pythias Hall	118 S Main St	Union	Union	1898	EC	NHD
Baxter Building	122-126 S Main St	Union	Union	c.1930	EC	NHD
Morrison Auto Electric; Country Flowers	130 N Main St	Union	Union	c.1891	NC	NHD
Wright & Davis Mercantile; Union Auto Parts	130 N Main St	Union	Union	1880	EC	NHD
Cock Bros. Furniture and Undertaking; Union Cash Grocery	132 N Main St	Union	Union	c.1912	EC	NHD
Wells Fargo Bank	144 S Main St	Union	Union	1952	NP	NHD
Eagle Tavern	156 S Main St	Union	Union	c.1920	NC	NHD
	164-176 S Main St	Union	Union	c.1930	EC	NHD
Oregon Trail Garage	181 S Main St	Union	Union	c.1910	EC	NHD
Union National Bank	181 S Main St	Union	Union	1910	EC	NHD
Union City Park	182 N Main St	Union	Union	1917	EC	NHD
Carnegie Library	182 N Main St	Union	Union	1912	EC	NHD
Reuter's Hardware 1	206 S Main St	Union	Union	1873	EC	NHD
Reuter's Hardware 2	206 S Main St	Union	Union	1877	EC	NHD
Shanks Café; The Hut Lounge & Café	219 S Main St	Union	Union	1910	NC	NHD
Benson Bros. Benson Bros. Meat & Packing Co.	239-251 S Main St	Union	Union	c.1881	EC	NHD
Roe's Barber & Beauty Shop	251 S Main St	Union	Union	c.1930	NC	NHD
Union Liquor Store	263 S Main St	Union	Union	c.1920	EC	NHD
Millinery; Harness Shop; Anderson's Shoe Repair Shop	267 S Main St	Union	Union	c.1870	EC	NHD
Levy's General Store	304 S Main St	Union	Union	c.1870	EC	NHD
	324 S Main St	Union	Union	c.1930	NC	NHD
Union Hotel	326 N Main St	Union	Union	1921	EC	NHD
Benson, Richard, House	328 N Main St	Union	Union	c.1920	EC	NHD
Sloat's Playland; Ivan's Food Store	331 S Main St	Union	Union	1947	NP	NHD
First National Bank of Union Building	333 S Main St	Union	Union	1881	EC	NHD
Union City Hall	342 S Main St	Union	Union	1892	EC	NHD
Methodist Church	366 S Main St	Union	Union	c.1874	EC	NHD
Blue Mountain Brewery; Union School District Bus Garage	400 S Main St	Union	Union	1879	XD	NHD
	410 N Main St	Union	Union	c.1920	NC	NHD
Baird, George and Minnie, House	415 N Main St	Union	Union	c.1888	NC	NHD
Eaton, Abel Elsworth, House	464 N Main St	Union	Union	1904	ES	NRB
Thompson, Jeremiah, House	475 N Main St	Union	Union	1873	EC	NHD
Cock, Thomas, House	511 N Main St	Union	Union	c.1888	EC	NHD
Union Women's Club	518 N Main St	Union	Union	1921	EC	NHD
Union High School	540 S Main St	Union	Union	1872	EC	NHD
Masonic Lodge	S Main & Center	Union	Union	1898	EC	NHD

48 Records Found

Elig Codes: ES=elig/signif EC=elig/contr NC=not elig/non-contrib NP=not elig/out of period UN=undetermined XD=demolished
NR Stat Codes: NRI=indiv listed NHD=listed in hist dist NRB=listed indiv and in hist dist NHL=Natl Historic Landmark NS=included in NR listing

Section 2
Multi-Modal Circulation Alternatives Analysis Technical Memorandum

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

TECHNICAL MEMORANDUM #2

Union TSP Update

Multi-Modal Circulation Alternatives Analysis FINAL

Date: February 28, 2014 Project #: 13445.0

To: Sandra Patterson, City of Union
Cheryl Jarvis-Smith, Oregon Department of Transportation

From: Matt Hughart, AICP; and Jon Crisafi (KAI)
Matt Berkow and Drew Meisel (Alta Planning + Design)
Andy Lindsey, Anderson-Perry & Associates, Inc.

The purpose of this memorandum is to present a series of multi-modal circulation alternatives and street/path standards available to address existing and future circulation deficiencies in the City of Union. For organizational purposes, the alternatives focus first on the creation of a complete multi-modal transportation network for the City of Union, taking into account those improvement recommendations identified in the 1998 Union Transportation System Plan that have not been constructed and additional roadway and intersection improvements needed to mitigate the connectivity and safety deficiencies noted in the Technical Memorandum #1.

The information contained in this memorandum is organized into a series of sections. The name and the first page of these sections are listed below.

ENHANCING THE MULTI-MODAL NETWORK

Enhancing the transportation network for all modes of transportation is a fundamental component of modern transportation planning. For the City of Union, multi-modal network enhancements are grouped into the following categories:

- Pedestrian System Improvements
- Bicycle System Improvements
- Trail System Improvements
- Marked Crossing Improvements
- Potential Special Transportation Area and Urban Business Area Designations
- Potential Roadway Cross Section Standard Revisions

PEDESTRIAN SYSTEM IMPROVEMENTS

Improvements to the pedestrian network include sidewalk installation and infill along key corridors. Proposed priority sidewalk infill or construction projects (i.e., on roads where no sidewalks exist) are listed in Table 1, and can be viewed in Figure 1.

Table 1 Proposed Pedestrian System Improvements

Project (#) Name	Project Detail	Benefits	Considerations
(P1) Bryan Street (East)	Install curb less sidewalk along the south side of Bryan Street	Will provide an important east-west route for pedestrians and provide a connection to the Eastern Oregon Livestock Exposition Grounds	• Sidewalk on the south side of the roadway would provide better connections to the 5-Mile Loop and could connect to the gate to the Eastern Oregon Livestock Grounds. • Will require special treatment at Bryan Street/Cove Street intersection. • If continued over Little Creek, widening of the bridge may be needed.
(P2) Bryan Street (West)	Install curb less sidewalk along one side of Bryan Street	Will provide an extension of the current walking route and allow for full east-west connection on the northern perimeter of the city.	• North side of street has more available ROW and fewer driveway conflicts.
(P3) Delta Street	Install curb less sidewalk along one side of Delta Street	Will provide an east-west connection for pedestrians to the Livestock Grounds.	• Would likely require shoulder reconstruction for all or part of the corridor. • Some segments of sidewalk already exist along the corridor.
(P4) Bellwood Street	Install curb less sidewalk along the west side of Bellwood Street	Will provide an important parallel north-south route that crosses Catherine Creek on the east side of town.	• Would likely require shoulder reconstruction for all or part of the corridor. • Bridge over Catherine Creek may require widening to accommodate sidewalks.
(P5) 3rd Street	Install curb less sidewalk along the east side of 3rd Street	Will provide an important north-south pedestrian and bicycle route that connects to the school campuses from Arch Street to Jefferson Street.	• Sidewalks on the east side of 3rd Street would better accommodate access to/from the school campuses.

Project (#) Name	Project Detail	Benefits	Considerations
(P6) 5th Street	Install curb less sidewalk along the east side of 5th Street	Will provide an important north-south pedestrian and bicycle route that connects to the school campuses in conjunction with the 3rd Street enhancement from Bryan Street to Arch Street.	• Transition route from 5th to 3rd Street at Arch Street. • Would likely require shoulder reconstruction for all or part of the corridor.
(P7) Jefferson Street	Install curb less sidewalk along the north side of Jefferson Street	Will provide a pedestrian and bicycle route in the south end of town connecting the 3rd Street enhancements to Main Street.	• May need to address right-of-way encroachment and private driveway access issues.
(P8) 10th Street (North)	Install curb less sidewalk along the east side of 10th Street	Will provide a complete north-south route for pedestrians and bicycles on the far west edge of the city, crossing Catherine Creek, and connecting from Bryan Street to Arch Street	• Could connect to proposed Honda Trailhead in the future. • Bridge over Catherine Creek may require widening to accommodate sidewalk(s). • Drainage ditch on east side of 10th Street would need to be addressed.
(P9) 10th Street (South)	Install curb less sidewalk along the east side of 10th Street	Will continue the 10th Street (North) project to connect through to the Athletic Complex.	• Would likely require shoulder reconstruction for all or part of the corridor.
(P10) Arch Street (East)	Sidewalk infill	Will continue to establish Arch Street as a primary east-west route in town connecting to downtown.	• Some segments of narrow sidewalks already exist on the north side of Arch Street east of 2nd Street. • South side of street has more available ROW and fewer driveway conflicts.
(P11) Arch Street (West)	Install curb less sidewalks along the south side of Arch Street	Will continue to establish Arch Street as a primary east-west route in town connecting to downtown.	• South side of street has more available ROW and fewer driveway conflicts.
(P12) Dearborn Street	Sidewalk infill	Will extend the sidewalk on the south side of Dearborn Street to baseball field	• Integrate with existing sidewalk system
(P13) Fulton Street (East)	Sidewalk infill	Will provide a connection from existing sidewalks to the cemetery and golf course.	• Provide sidewalks on north side (same as existing sidewalks further east on Fulton)
(P14) Fulton Street (West)[2]	Install curb less sidewalks along the north side of Fulton Street	Will complete connection along Fulton Street and provide direct access to school campus.	• Will need to address on-street parking near the high school • Part of recent ODOT STIP project.
(P15) 1st Street/Center Street	Sidewalk infill	Will provide sidewalks on all sides of the elementary and high school campuses	• Integrate with existing sidewalk network surrounding the schools. • Part of recent ODOT STIP project.

Walking/Bicycling Routes

A network of walking and bicycling routes is proposed to connect residential neighborhoods, parks, schools, visitor attractions, and commercial/employment areas. Many of these routes are along residential streets with lower traffic volumes and speeds, making them comfortable for biking, without separated bike facilities. To increase safety for all road users in Union, the following enhancements are proposed as means to further support walking and bicycling:

- Sidewalks without curb and gutter on at least one side of the street
- Marked crossings where these routes cross busier streets
- Wayfinding consisting of signs and/or pavement markings to alert pedestrians and bicyclists of the preferred routes and to increase motorist expectations of encountering active transportation users

0 0.125 0.25 0.5 Miles

Existing Facilities
- Existing Multi-use Path
- Existing Crossings
- Union City Limits
- Union UGB

Proposed Facilities
- Bike Lane
- Walk/Bike Routes
- Shoulder Bikeway
- Multi-use Path
- Potential Future Crossings

Proposed Walking and Biking Projects

UNION OREGON

Figure 1

BICYCLING SYSTEM IMPROVEMENTS

Improvements to the bicycle network include facilities to accommodate cyclists within the city and who utilize the Grande Scenic Bikeway. The focus of these improvements targets the state routes within Union to provide more appeal to bicycle tourism. Other bicycle improvements are also listed in conjunction with the pedestrian improvements to provide bike lanes along proposed pedestrian facilities. These improvements are more complimentary of the overall internal circulation of bicycle users within Union and are further detailed in Table 1 (projects with shared lane markings). Proposed bicycle solutions can be viewed in Figure 1, and are described in more detail in Table 2.

Table 2 Proposed Bicycle System Improvements

Project (#) Name	Details	Benefits	Considerations
(B1) Main Street (Arch Street to south city limits)	Install bike lanes	Bicycle lane accommodation on a designated bike route through the main throughway in Union (Main Street). Would potentially reduce bicycle riding along the commercial portion of Main Street sidewalks.	• Sufficient pavement width to accommodate bike lanes without removing parking in the commercial downtown area. • Cycle track could be an option, but lacks an adequate buffer width without removing on-street parking on one side of Main Street.
(B2) Main Street (Arch Street to Bryan Street)	Install bike lanes	Striped bicycle accommodation on a designated bike route through the main throughway in Union (Main Street).	• Installation of formal bike lane could be accommodated without roadway widening if on-street parking were removed from one side of Main Street.
(B3) Cove Highway	Install shoulder bikeway	Bicyclist accommodation on a designated bike route.	• Work with ODOT staff to develop an improved bike facility to Cove.
(B4) La Grande-Baker Highway (Main Street to City Limits)	Install shoulder bikeway	Bicyclist accommodation on a designated bike route.	• Work with ODOT staff to develop shoulder bike facility to La Grande.
(B5) Beakman Street	Install bike lanes	Bicycle lane accommodation on a designated bike route to/from the main part of town	• Installation of formal bike lane could be accommodated without roadway widening if on-street parking were removed from one side of Main Street.
(B6) Medical Springs Highway	Install shoulder bikeway	Bicyclist accommodation on a designated bike route.	• Work with ODOT staff to develop shoulder bike facility.
(B7) La Grande-Baker Highway	Install shoulder bikeway	Bicyclist accommodation on a designated bike route.	• Work with ODOT staff to develop shoulder bike facility.
(B8) Bryan Street (east of Main Street)	Install bike lanes	Striped bicycle accommodation on a designated bike route to/from Cove.	• Would require full reconstruction of this narrow unimproved section of roadway.

TRAIL SYSTEM IMPROVEMENTS

Development of a trail system to supplement the pedestrian and bicycle network allows for residents and tourists to engage in more recreational and non-motorized travel to explore the surrounding areas outside of the Union street system. Additionally, trails can provide opportunities to connect more easily to some of Union's attractions without the need for driving. The proposed trail system improvements for Union are summarized Table 3 and shown in Figures 1 and 2.

Table 3 Proposed Trail System Improvements

Project (#) Name	Location	Project Details	Benefits
(TR1) Honda Trail 1	Catherine Creek from 10th Street to 5th Street	Clear trail along Catherine Creek. Coordinate with property owners and ditch company. South side of the creek is preferred alignment.	Will provide a social trail along Catherine Creek for scenic route for walkers, joggers, and bicyclists. Promotes recreational and non-motorized travel.
(TR2) Honda Trail 2	Catherine Creek from 5th Street to City Park	Clear trail along Catherine Creek. Coordinate with property owners and ditch company. Requires marked crossing at 2nd Street to reach existing trail in City Park. Requires a footbridge over Catherine Creek near 2nd Street.	Will provide a social trail along Catherine Creek for scenic route for walkers, joggers, and bicyclists. Will provide an off-street east-west connection. Promotes recreational and non-motorized travel.
(TR3) Fisher Field	Southeast part of city from Main Street to cemetery	Clear trail that will connect Main Street to the cemetery and golf course along the existing sewer easement. Will also have access to new subdivision.	Promotes recreational and non-motorized travel.
(TR4) Livestock Grounds Ditch	East edge of city limits from Bryan Street to OR 203	Clear trail along east city limits around the Livestock Grounds	Will provide a means of recreational trail around the eastern edge of the city. Promotes recreational and non-motorized travel.
(TR5) Cemetery Loop Connection	Through cemetery from Fulton Street to Fisher Field Trail	Clear trail that will connect through the cemetery to the Fisher Field Trail to complete loop near the golf course. Would require coordination with golf course and cemetery.	In conjunction with Fisher Field trail, provides a loop in the southern part of the city with potential lookout points near the golf course. Promotes recreational and non-motorized travel.
(TR6) Honda Trail 3	Catherine Creek from 10th Street to Transfer Station parking lot	Clear trail along Catherine Creek. Would require coordination with adjacent property owners.	Will provide additional distance to travel along water features in Union connecting out to the transfer station. Promotes recreational and non-motorized travel.
(TR7) Catherine Creek Greenway East	Catherine Creek from Main Street to east of city limits	Clear trail along Catherine Creek to the east of the Honda Trails. Would require coordination with adjacent property owners.	Will provide additional distance to travel along water features in Union connecting out to the other proposed trail system surrounding the city. Promotes recreational and non-motorized travel.
(TR8) Golf Course Loop Tail	Golf course perimeter from Ramo Flat to Beakman Street	Develop trail around the perimeter of the golf course. Requires coordination with golf course and adjacent property owners.	Will provide additional and more completed perimeter trail around Union and most likely opportunity for lookout points. This trail would provide the only significant elevation change in the existing/proposed trail system. Promotes recreational and non-motorized travel.

ENHANCED CROSSING IMPROVEMENTS

Enhanced/marked pedestrian crossings have limited presence at intersections in Union due to low daily vehicle volumes, with exceptions near downtown as well as near schools. Opportunities remain to further enhance existing crossings for improved motor vehicle yielding compliance as well as to provide additional marked crossing opportunities, including where neighborhood routes or routes to schools cross higher volume/speed roadways such as Main Street. Several potential enhanced crossing applications that could be applicable to Union streets are highlighted in the sections below.

Raised Median Islands

Raised median islands provide a protected area in the middle of a crosswalk for pedestrians to stop while crossing the street. The raised median island allows pedestrians to complete a two-stage crossing if needed. The ODOT Traffic Manual states that for state highways a raised median, in combination with a marked crosswalk is desired when average daily traffic (ADT) volumes are greater than 10,000. There are currently no roadways in Union that experience these speeds or traffic volumes, however raised median islands might be appropriate to increase the visibility of some crossing locations.

Exhibit 1 - Raised Median Island, Molalla, OR

Advantages of raised medians include:

- Improves visibility of crossing to approaching motorists;
- Helps slow vehicle speeds by providing a sense of a narrower roadway to motorists;
- Provides a protected place for pedestrians to wait for a gap in traffic;
- Requires shorter gap in traffic for pedestrians to cross the street; and
- Effective for creating a gateway or entry type treatment in high pedestrian activity areas.

Challenges to implementing raised medians include:

- Raised median islands reduce the overall width of the travel way. On ODOT facilities, this potential reduction of travel way width would require special review and approval.
- Raised median must be able to provide at least six-feet of space to accommodate wheel chairs and not streets have sufficient right-of-way; and
- Places a physical barrier in the street and therefore requires distinctive visible attributes such as landscaping and signs.

Raised Crosswalk

A raised crosswalk is raised higher than the surface of the street to give motorists and pedestrians a better view of the crossing area. A raised crosswalk is similar to a speed table marked and signed for pedestrian crossing. Raised crosswalks are not permitted on state highways.

Advantages of a raised crosswalk include:

- Provides better view of pedestrians for motorists;
- Slows vehicle travel speeds; and
- Applicable on arterial and collector streets

Challenges to implementing raised crosswalks include:

- Can be difficult for large trucks, snow plows, and buses to navigate; and
- Requires adequate signing on the approach to inform motorists of raised roadway.

Rectangular Rapid Flashing Beacon

Rectangular Rapid Flashing Beacons, or RRFBs, are user-actuated amber lights that have an irregular flash pattern similar to emergency flashers on police vehicles. These supplemental warning lights are used at unsignalized intersections or mid-block crosswalks to improve safety for pedestrians using a crosswalk. Implementation of RRFBs requires meeting minimum design criteria and is not permitted on facilities over 45 miles per hour.

Exhibit 2 - RRFB, Irrigon, OR

Advantages of using rectangular rapid flashing beacons include:

- Typically increases yielding behavior of motorists;
- May be used at unsignalized intersections and mid-block crossing locations;
- May be installed on two-lane or multilane roadways;
- Low cost alternatives to traffic signals and hybrid signals.

Challenges to implementing rectangular rapid flashing beacons include:

- Not appropriate for all roadways; bright lights are aesthetically challenging;
- Pedestrians may choose to not active the flashing lights.

Curb Extensions

Curb extensions or bulb-outs are a form of traffic calming that involve a widening of the sidewalk at intersections. This widening is designed to narrow the roadway, thereby reducing the pedestrian crossing distance at the intersection.

Exhibit 3 - Curb Extension, Boise, ID

Advantages of using curb extensions include:

- Reduces the pedestrian crossing distance at intersections and minimizes pedestrian exposure times while in the cross walk;
- Provides additional visibility for pedestrians as they approach cross walks.

Disadvantages of using curb extensions include:

- Can be more difficult for large trucks, snow plows, and buses to navigate; and
- Would reduce on-street parking.

Enhanced Striping Patterns

Some crosswalk striping patterns offer enhanced visibility. One such pattern is the Continental striping pattern as shown in Exhibit 4. These patterns have been traditional reserved for school zones on all ODOT state highways.

Exhibit 4 – Continental Striping, Pendleton, OR

Advantages of Continental striping include:

- Provides enhanced visibility due to their unique pattern
- Strategic spacing of the bar stripes can minimize maintenance and increase the lifespan of the stripe.

Disadvantages of using curb extensions include:

- ODOT has traditionally reserved this pattern for school zones or at special crossings that require enhanced visibility.

Based on the proposed bicycle and pedestrian improvement projects identified in Figure 1, opportunities remain to further enhance major street bicycle and pedestrian crossings in Union. Table 4 identifies locations where enhanced crossing opportunities might make sense based on existing travel patterns or where future bicycle/pedestrian accommodations may be implemented. As this is a planning study, it is recognized that all crossing enhancements would require a more detailed engineering investigation and approval prior to being implemented.

Table 4 Enhanced Crossing Opportunities

Project Name	(Project #) Location	Project Type	Project Details	Benefits
Main Street Crossings	(CR1) Delta Street	Consider an enhanced striped crossing treatment	Provides enhanced crossing on Main Street at the significant east-west Delta Street corridor; allows connection to Eastern Oregon Livestock Grounds.	Will provide crossing opportunities for pedestrians and bicyclists traveling along the east-west routes to safely cross the most heavily traveled road (Main Street).
	(CR2) Future Catherine Creek Trail Crossing	Consider an enhanced crossing. A raised median island might be appropriate at this mid-block location.	Provide enhanced crossing if and when a Catherine Creek Trail is establish east of Main Street; allows connection to City Park and Library.	
	(CR3) Bryan Street	Consider an enhanced striped crossing treatment.	Provide enhanced crossing on Main Street at Bryan Street to accommodate pedestrian activity on the north end of town. This location would likely need an advanced warning device given that it is located on a curve in the roadway.	
	(CR4) Century Drive	Consider an enhanced striped crossing treatment.	Provide a formal crossing opportunity at Century Drive, allowing a connection to future residential development and golf course.	
	(CR5) Jefferson Street	Consider an enhanced striped crossing treatment	Provide enhanced cross on Main Street at Jefferson Street; allows access to proposed trail (T3).	
	All existing striped Main Street Crossings	Consider installation of curb extensions	Provide curb extensions to shorten the Main Street crossing distance at existing crosswalk locations at Arch Street, Dearborn Street, and Fulton Street	
Beakman/OR 203 Crossing	(CR6) Bellwood Street	Install enhanced striped crossing treatment	Provide enhanced crossing on Beakman/OR 203 at Bellwood Street. Accommodates enhanced pedestrian facilities vision on Bellwood Street.	Will provide a formal crossing of Beakman/OR 203 and allow Bellwood Street to continue as a viable north-south parallel alternative to Main Street
	(CR7) Future Trail Crossing	Consider an enhanced striped crossing treatment when future Fisher Field and Catherine Creek Tails are built	Provide enhanced crossing treatment when future trail connections are established.	Connects the potential city-wide trail system together.

SPECIAL TRANSPORTATION AREA AND URBAN BUSINESS AREA DESIGNATIONS

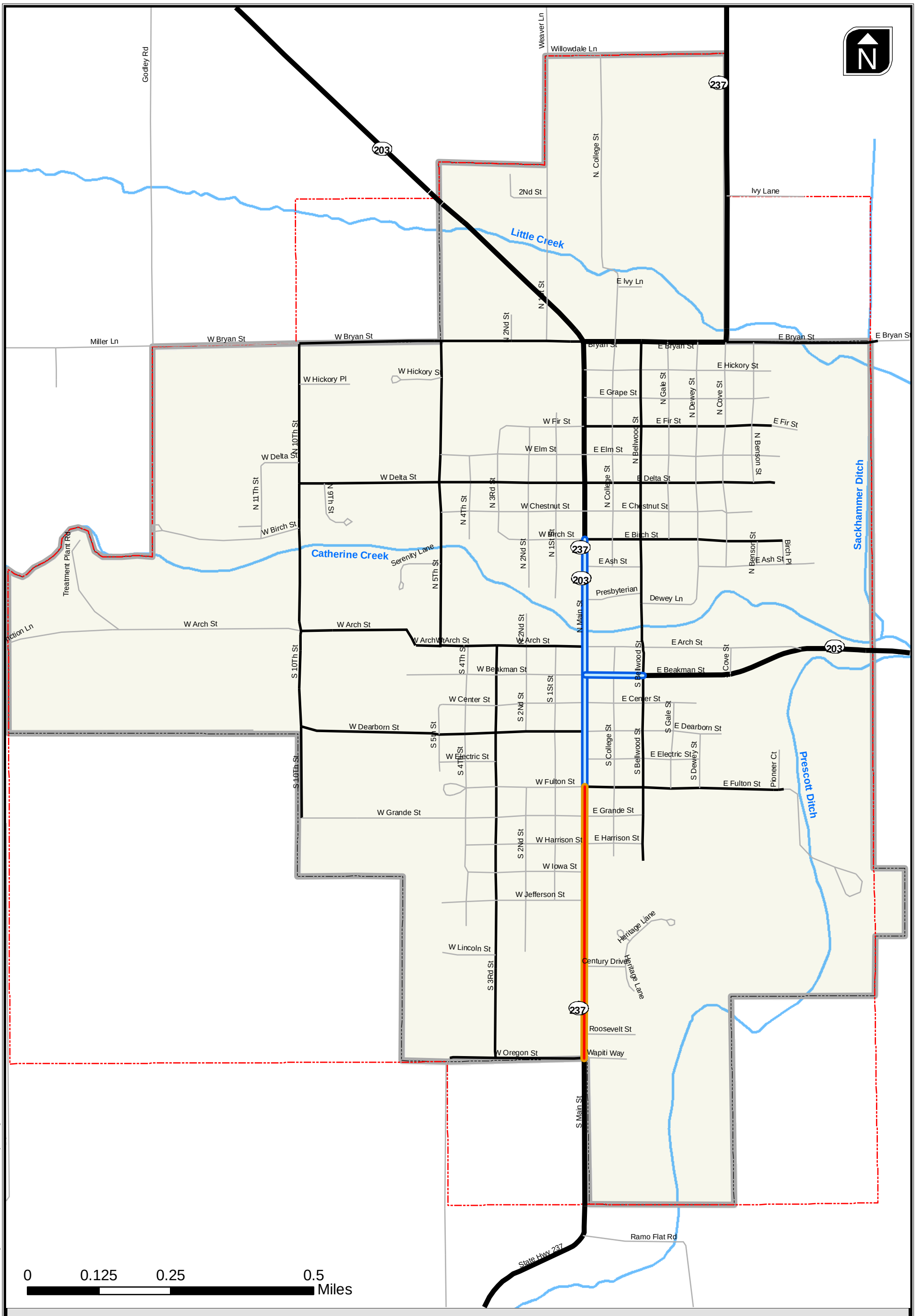
This section documents general information on Special Transportation Areas (STAs) and Urban Business Area (UBAs) as well as ideas for how the City of Union can use STAs and UBAs to achieve its goals of continuing to develop a transportation system that is inviting to pedestrian, bicyclists, and transit. Union currently has no STA or UBA designations on any of the state highway segments through the city. However, ODOT and the City have begun initial discussions on the potential designation of STAs and UBAs within the City. Figure 2 illustrates these potential locations. The evaluation of these designations as part of a TSP update is typically a first step in moving towards the adoption and official recognition of these designations. As such, this section provides background information on STAs and UBAs and addresses whether the five identified segments should be considered further for designation.

Background

The 1999 Oregon Highway Plan (OHP) established long-range policies and investment strategies for the State Highway System. Within the OHP, highway mobility standards are included as a policy. The highway mobility standards are established to maintain acceptable and reliable levels of mobility on the state highway system. Per the OHP, these standards shall be used for:

- Identifying state highway mobility performance expectations for planning and plan implementation;
- Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and
- Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance.

In establishing the mobility standards, the Oregon Department of Transportation (ODOT) and the Oregon Transportation Commission (OTC) identified that these mobility standards could have the unintended effect of discouraging development in downtowns and encouraging development in urban fringe areas. This could occur where highways in downtowns and central business districts are near capacity. With this in mind, alternate mobility standards can be developed and adopted for metropolitan areas, Special Transportation Areas (STAs), Urban Business Areas (UBAs), and constrained areas. The remainder of this section addresses the STAs and UBAs.



Special Transportation Area
Urban Business Area
Union City Limits
Union UGB

Proposed STA and UBA Designations

UNION OREGON

Figure 2

H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TM#2 - Alternatives Analysis Figs\13445_FIG02_STA_UBA.mxd

Special Transportation Areas (STAs)

STAs are highway locations where alternate mobility and access management standards can be considered. An STA is a designated district of compact development located on a state highway within an urban growth boundary in which the need for appropriate local access outweighs the considerations of highway mobility. The exception is on designated Oregon Highway Plan Freight

Routes, where through highway mobility has greater importance. None of the identified segments in Union are designated Freight Routes by ODOT.

STAs look like traditional "Main Streets" with development generally located near the back of sidewalk on both sides of the state highway. The primary objective of an STA is to provide access to and circulation amongst community activities, businesses and residences and to accommodate pedestrian, bicycle and transit movement along and across the highway. Direct street connections and shared on-street parking are encouraged. Local auto, pedestrian, bicycle and transit movements to the area are generally as important as the through movement of traffic. Traffic speeds are slow, generally 25 miles per hour or lower.

Mobility and Access Management Standards

OR 203 and OR 237 are District Highways in the OHP. The standard for mobility is lowest for District and Regional Highways in STAs. In STAs, in particular, higher levels of congestion are permitted to accommodate compact, pedestrian-oriented development. Mobility standards can range from 0.70 to 0.95 for a STA. In addition to the mobility standards, an STA has access management standards for District, Regional, and Statewide Highways.

The minimum access management spacing for public roadway approaches is the existing city block spacing or the city block spacing as identified in the local comprehensive plan. Public road connections are preferred over private driveways and in STAs, driveways are discouraged. However, where driveways are allowed and where land use patterns permit, the minimum access management spacing for driveways is 175 feet or mid-block if the current city block is less than 350 feet.

Currently the mobility standards on all potential STA designated highway segments within Union are 0.95. As illustrated in the future conditions analysis, none of the study intersections are forecast to exceed the current 0.95 mobility standard through 2034.

Planning and Development Guidance for STAs

STAs should be planned and developed to reflect the following kinds of characteristics:

- Buildings are spaced close together and located adjacent to the street
- Sidewalks with ample width are located adjacent to the highway and the buildings
- People who arrive by car or transit find it convenient to walk from place to place

- On-street parking, structured parking, or shared, general purpose parking lots are located behind or to the side of buildings
- Streets are designed with a pedestrian orientation for the ease of crossing by pedestrians
- Public road connections correspond to the existing city block pattern; private driveways directly accessing the highway are discouraged
- Adjacent land uses provide for compact, mixed-use development with buildings oriented to the street
- A well-developed parallel and interconnected street network facilitates local automobile, bicycle, transit and pedestrian circulation except where topography severely constrains the potential for street connections
- Speeds typically do not exceed 25 miles per hour
- Plans and provisions are made for infill and redevelopment
- Provisions are made for well-developed transit stops including van/bus stops, bicycle and pedestrian facilities, and including street amenities that support these modes

In addition to the above characteristics for developing an STA, an agency should apply the following strategies outlined in Table 5 to meet the objectives of the land use and transportation policy and support the development of an STA.

Table 5 Elements of Strategies for Development of STAs

Land Use	Traffic Management
• Adjacent land uses that provide for compact, mixed-use development. "Compact" means that buildings are spaced closely together, parking is shared and sidewalks bind the street to the building. Mixed-use development includes a mixture of community places and uses. • Infill and redevelopment. • Design and orientation of buildings that accommodate pedestrian and bicycle circulation, as well as automobile use. • An adopted management plan as part of the comprehensive plan that shows the area as a compact district with development requirements that address local auto trips, street connectivity, shared parking, design and layout of buildings, parking and sidewalks that encourage a pedestrian-oriented environment.	• A well-developed parallel and interconnected local roadway network. • A parking strategy that favors shared general purpose parking, preferably on-street parking and shared parking lots. • Streets designed for ease of crossing by pedestrians.
Alternative Modes	**Access Management**
• Well-developed transit, bicycle and pedestrian facilities, including street amenities that support these modes.	• Public road connections that correspond to the existing city block. • Private driveways discouraged.

STA Opportunities for Union

Based on conversations between ODOT Region 5 staff and City of Union staff, the segments below have been identified for potential STA designation:

- La Grande-Baker Highway (Main Street)
  - From Birch Street to Beakman Street (M.P. 16.28 – 16.51)
- La Grande-Baker Highway (Main Street)
  - From Beakman Street to Fulton Street (M.P. 16.51-16.71)
- Medical Springs Highway (E. Beakman Street)
  - From Main Street to Bellwood Street (M.P. 0.00 – 0.10)

All of these segments either traverse Downtown Union or serve predominately commercial corridors that lead into Downtown Union. In this environment, speeds are 25 mph, buildings are spaced close together, development is more compact, and streets are designed to a higher level of pedestrian accommodation. These segments have many characteristics that make it a potential STA candidate.

Urban Business Areas (UBAs)

UBAs are special overlay designations that can be applied to highways where existing commercial development exists and it has been determined that vehicular circulation and accessibility are important to ensure continued redevelopment and reinvestment. An important distinction however is that UBAs strive to encourage development that relies upon common accesses and some compatibility with bicycle and pedestrians.

Planning and Development Guidance for UBAs.

UBAs should be planned to reflect the following kinds of characteristics:

- Consolidation of vehicular access for new development and redevelopment;
- Crossover access between adjacent properties;
- Businesses and buildings set back from the highway and separated by parking lots;
- Visible access from the highway directly to parking and drive-through facilities;
- Limited or no on-street parking;
- Bicycle lanes, sidewalks, crosswalks, or other bicycle/pedestrian accommodations to address safe and accessible pedestrian movement along, across and within the commercial areas;

- Stop signs, traffic signals, medians and intersections designed to serve as pedestrian refuges;
- Provision for good traffic progression;
- Auto accessibility important to economic vitality of the area;
- Vehicular accessibility as important as pedestrian, bicycle and transit accessibility;
- Efficient parallel local street system where arterials and collectors connect to the state highway;
- Speeds that are generally 35 mph or less;
- Businesses and buildings clustered in centers or nodes for new development and potential redevelopment.

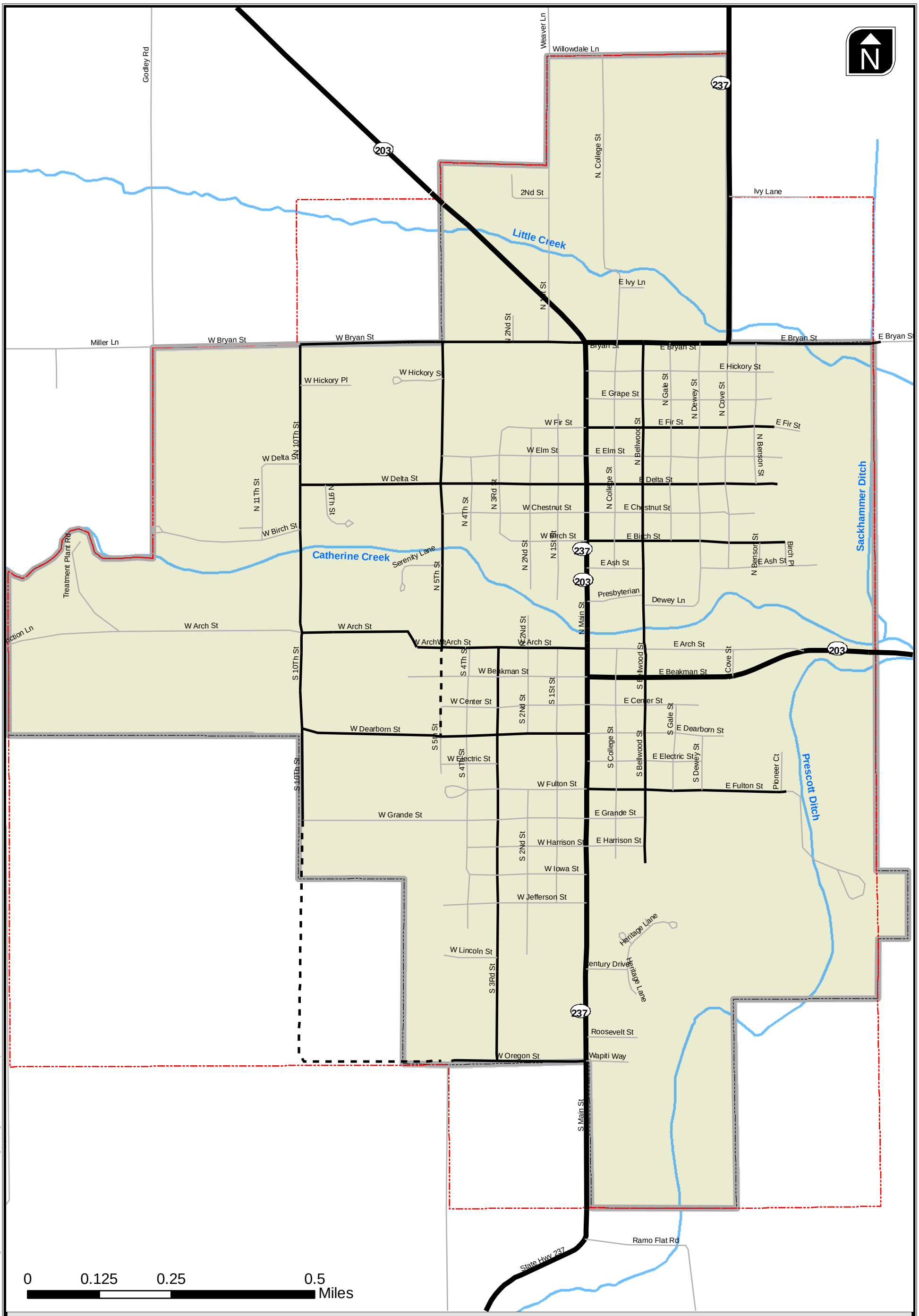
UBA Opportunities for Union

Based on conversations between ODOT Region 5 staff and City of Union staff, the segment illustrated in Figure 3 and outlined below has been identified for potential UBA designation:

- La Grande-Baker Highway (Main Street)
    - From Fulton Street to Oregon Street (M.P. 16.71 – 17.18)

POTENTIAL FUNCTIONAL CLASSIFICATION PLAN REVISIONS

Union classifies roadways as Arterials, Major Collectors, Minor Collectors, and Local Streets. When observing the roadway network, the differentiation between Major and Minor Collectors in Union is minor to non-existent. The two classifications do not exhibit enough variability in traffic volume or ROW width to support a greater degree of classification within the collector class. Additionally, the current roadway cross sections do not provide guidance between major/minor collector roadways. An opportunity would be to simplify the collector classification as simply “Collector” which would encompass all existing Major and Minor Collector Roadways. Figure 3 shows the proposed functional classification map with this revision.



H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TM#2 - Alternatives Analysis Figs\13445_FIG03_UpdatedFC.mxd

POTENTIAL ROADWAY CROSS SECTION STANDARD REVISIONS

The 1998 TSP provides a series of roadway cross section drawings for the various street classifications within Union. These cross sections are no longer utilized by the City of Union following a most recent street standards revision completed by Anderson Perry & Associates, Inc. in 2013. In addition to the more updated standards, the Arterial standard developed by Anderson Perry & Associates applies only to the state highways that are owned and operated by ODOT. A review of the Arterial standard reveals design details that are not supported by ODOT's updated minimum design criteria. To resolve the noted inconsistencies and to provide a discussion forum for several potential modifications to these standards, new cross section drawings were created as noted in the sections below.

Arterial Street Standard

A review of the City's functional classification map indicates that the only facilities with the arterial designation are the ODOT owned/controlled state highways. The current arterial cross section developed in 2013 is not fully supported by ODOT minimum design criteria, nor is it reflective of the existing arterial roadway segments that have been constructed within the City. As such, it was determined that the TSP Update should more thoroughly investigate the development of new Arterial standards that are reflective of ODOT's existing highway investment and can better accommodate all modes of travel.

Main Street Pavement Reallocation

An on-going circulation concern in Union is the use of Main Street sidewalks, particularly in downtown, by children on their bicycles. Bicycling on sidewalks presents particular issues for pedestrians, most notably outside of storefronts where bicycles are unexpected. Restrictions currently ban bicycling on the sidewalks through downtown. However, many children and parents feel that the lack of dedicated biking facilities on Main Street creates a less safe alternative and therefore makes bicycling on the Main Street sidewalks favorable. An objective in resolving this issue is to provide a more distinct biking environment for younger and less experienced riders.

Exhibits 5 and 6 graphically illustrate a potential reallocation of pavement for the key segments of Main Street from Bryan Street to the southern city limits. As shown, this reallocation would involve the restriping of segments to include 5-6' wide bike lane (as summarized in Bicycle Project B1 - Main Street South). The travel lanes have sufficient width to accommodate dedicated bike lanes without requiring modifications to the overall pavement width. Table 6 details the descriptions of the options shown in Exhibits 5 and 6.

Exhibit 5 - La Grande-Baker Highway (Main Street) Concepts

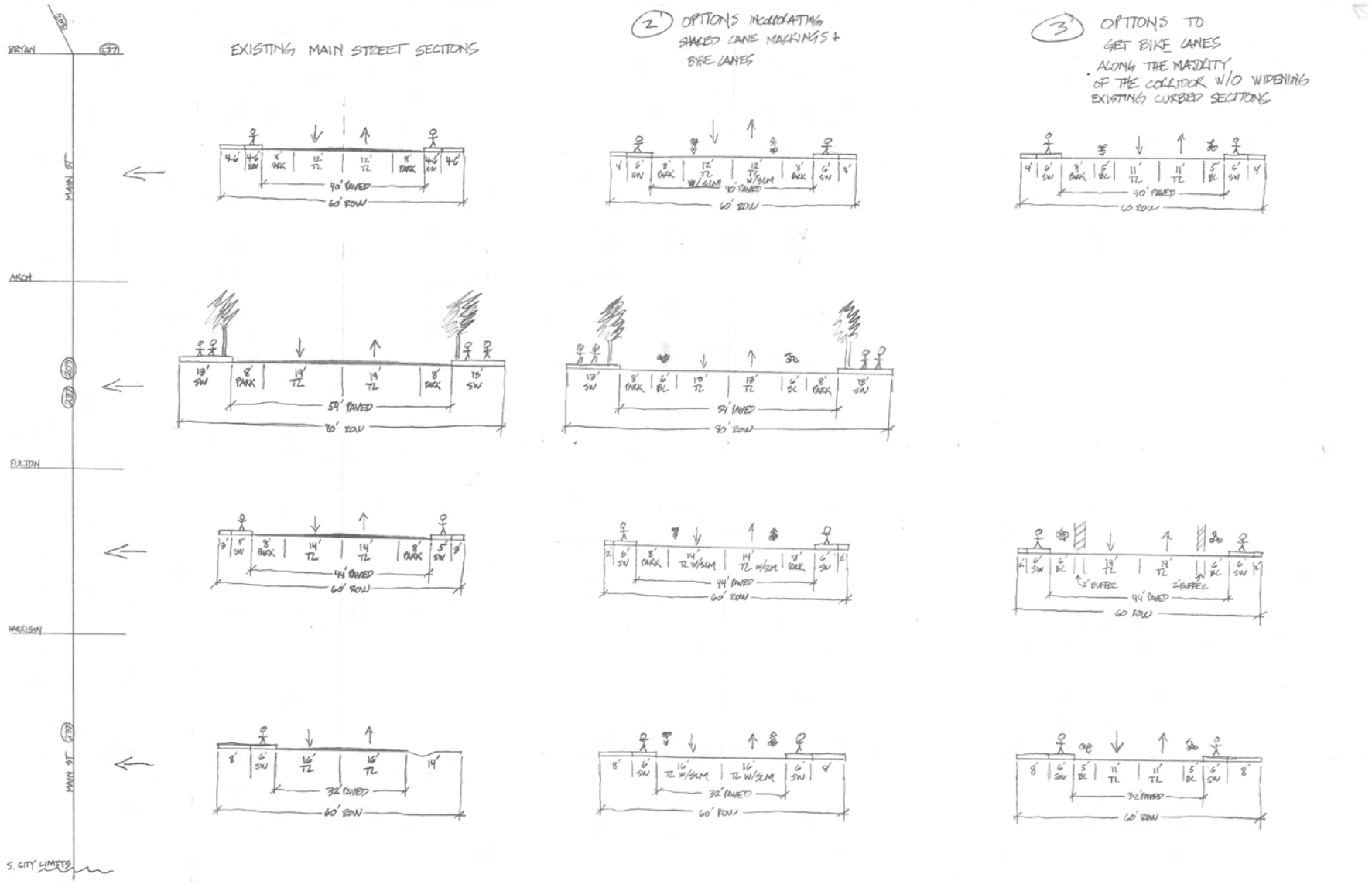


Exhibit 6 - La Grande-Baker Highway (Main Street) Concepts (Cont.)

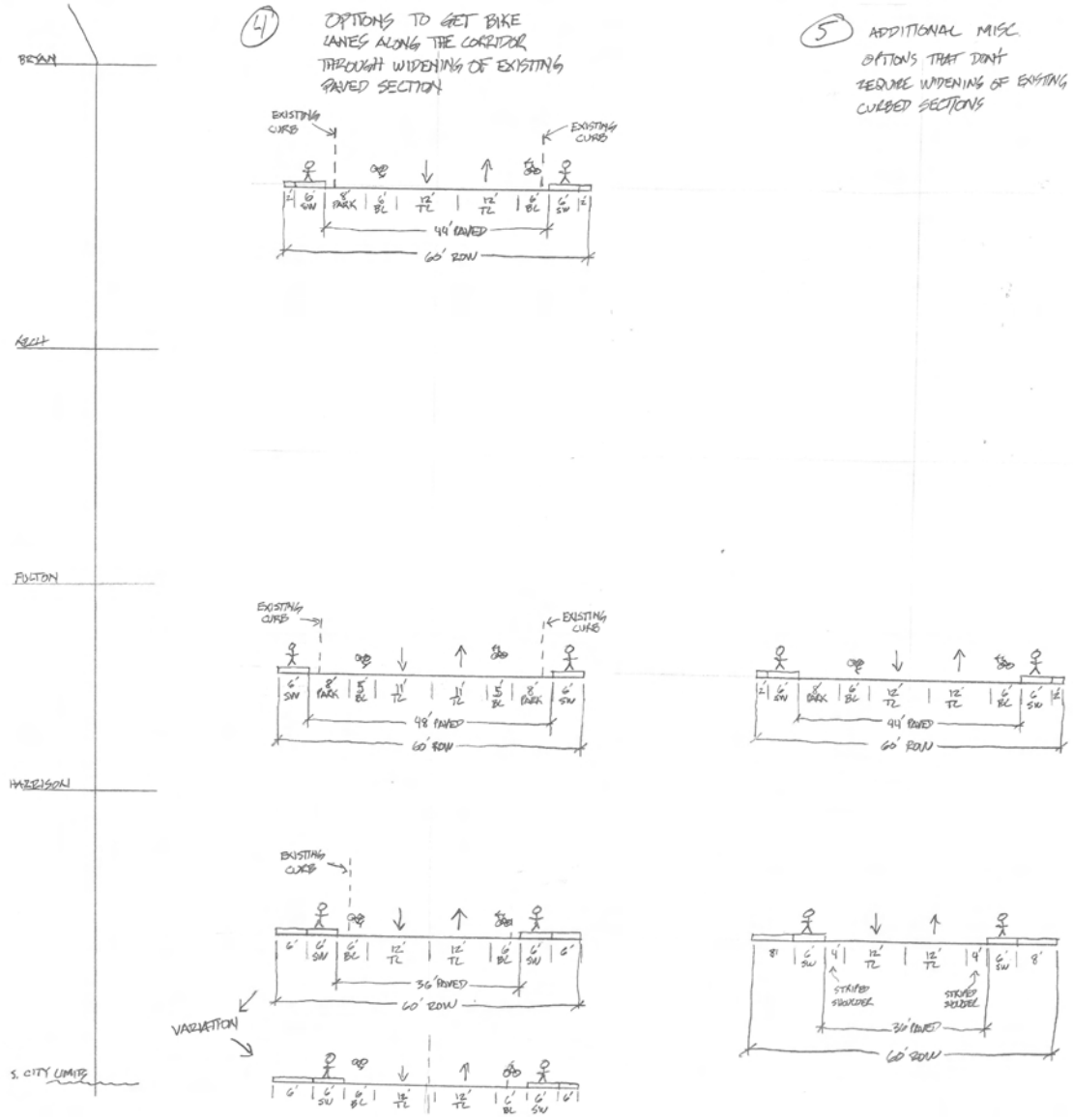
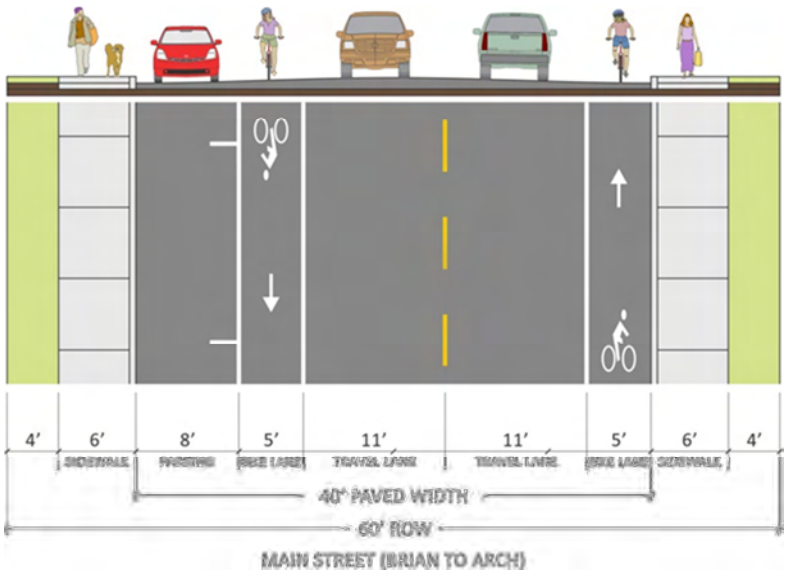


Table 6 La Grande-Baker Highway (Main Street) Standard Concepts

Roadway Segment	Options Incorporating Shared Lane Markings & Bike Lanes	Options Incorporating Bike Lanes w/o Widening the Existing Curbed Section	Options Incorporating Bike Lanes Along the Corridor Through Widening of Existing Curbed Section	Additional Miscellaneous Options w/o Widening of the Existing Curbed Section
Bryan St to Arch St	• Does not require modification of the existing curb-to-curb travel way • Shared lane markings help to establish Main Street as a bike corridor • Maintains on-street parking • Shared lane markings will on-going maintenance	• Dedicated bike lanes offer a greater sense of bicycle comfort • Does not require modification of the existing curb-to-curb travel way • Parking would be removed on the east side of Main Street, potential affecting some property owners/businesses • 5’ bike lanes, while allowed, are less than ideal widths.	• Dedicated 6’ bike lanes offer a greater sense of bicycle comfort • Parking would be removed on the east side of Main Street, potential affecting some property owners/businesses • Requires a costly modification of the existing curb-to-curb section of Main Street and reconstruction of the sidewalks on both sides of the street	
Arch St to Fulton St	• Does not require modification of the existing curb-to-curb travel way • Narrows the 19’ wide travel lanes and establishes a dedicated bike lane • Bike lanes will help keep some cyclists off the side walks			
Fulton St to Harrison St	• Does not require modification of the existing curb-to-curb travel way • Shared lane markings help to establish Main Street as a bike corridor • Maintains on-street parking • Shared lane markings will on-going maintenance	• Buffered bike lanes offer a greater sense of comfort to cyclists of all ages • Does not require modification of the existing curb-to-curb travel way • On-street parking would be removed from both sides of Main Street, potential affecting some property owners. • 14’ travel lanes would potentially be wider than upstream/downstream segments of Main Street • Volume of cyclists likely does not warrant buffered bike lanes	• Dedicated bike lanes offer a greater sense of bicycle comfort • Maintains on-street parking • 5’ bike lanes, while allowed, are less than ideal widths. • Requires a costly modification of the existing curb-to-curb section of Main Street and reconstruction of the sidewalks on both sides of the street • Leaves no right-of-way behind the sidewalk for utilities	• Dedicated 6’ bike lanes offer a greater sense of bicycle comfort • Parking would be removed on the east side of Main Street, potential affecting some property owners • Does not require modification of the existing curb-to-curb travel way
Harrison St to South City Limits	• Does not require modification of the existing curb-to-curb travel way • Shared lane markings help to establish Main Street as a bike corridor • Travel speeds are higher and may not be appropriate for shared lane markings • Shared lane markings will on-going maintenance	• Dedicated bike lanes offer a greater sense of bicycle comfort • Does not require modification of the existing curb-to-curb travel way • 5’ bike lanes, while allowed, are less than ideal widths.	• Dedicated 6’ bike lanes offer a greater sense of bicycle comfort • Requires a costly modification of the existing curb-to-curb section of Main Street and reconstruction of the sidewalks on the west side of the street	• Does not require modification of the existing curb-to-curb travel way • Striped shoulder is not technically a bike lane and it may be confusing for drivers and cyclists

After reviewing the different characteristics of each treatment, the following exhibits illustrate the preliminarily preferred standards for the various key segments of Main Street. As shown in the exhibits, there was a desire to establish a series of continuous bike lanes along the entire length of Main Street. In all segments, this can be achieved by re-striping and reallocating the existing curb-to-curb travel way width.

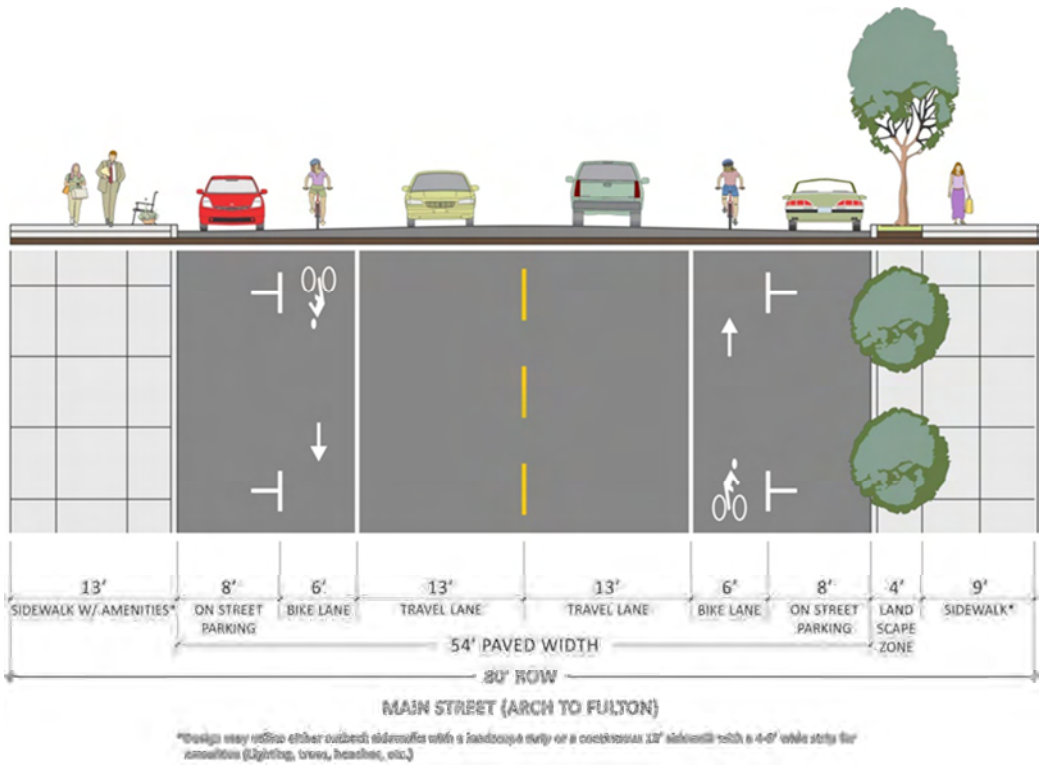
Main Street Preferred Cross Section Exhibits



MAIN STREET (BRIAN TO ARCH)

Considerations

- Dedicated bike lanes offer a greater sense of bicycle comfort.
- Does not require modification of the existing curb-to-curb travel way.
- Parking would be removed on the east side of Main Street, potential affecting some property owners/businesses
- 5’ bike lanes, while allowed, are less than ideal widths.
- Narrower travel lanes may help lower travel speeds.

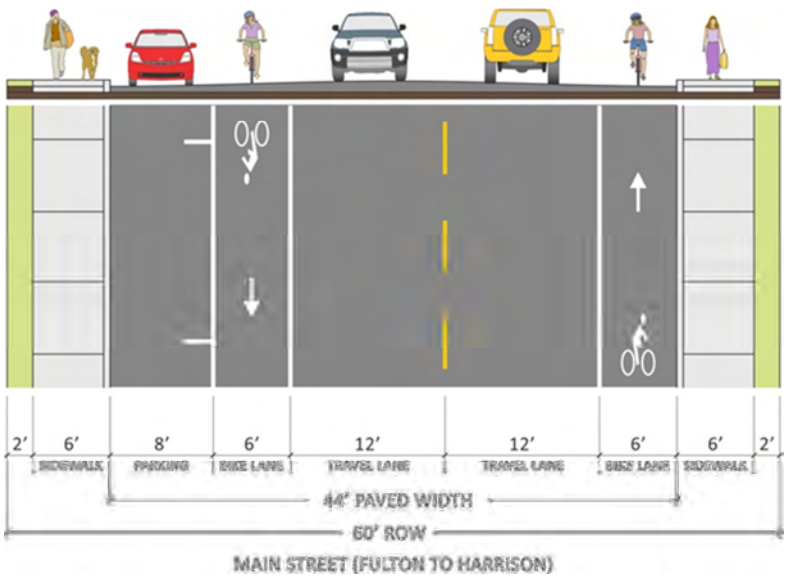


MAIN STREET (ARCH TO FULTON)

*Design may utilize either outback sidewalks with a landscape strip or a continuous 13' sidewalk with a 4-6' wide strip for amenities (Lighting, trees, benches, etc.)

Considerations

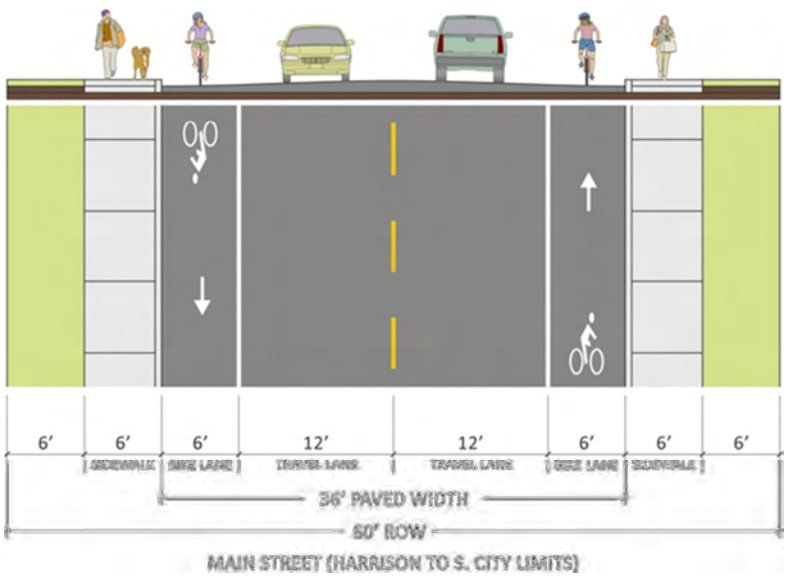
- Does not require modification of the existing curb-to-curb travel way.
- Narrows the 19’ wide travel lanes and establishes a dedicated bike lane.
- Bike lanes will help keep some cyclists off the sidewalks.
- Narrower travel lanes may help lower travel speeds.



MAIN STREET (FULTON TO HARRISON)

Considerations

- Dedicated 6’ bike lanes offer a greater sense of bicycle comfort.
- Parking would be removed on the east side of Main Street, potential affecting some property owners.
- Does not require modification of the existing curb-to-curb travel way
- Narrower travel lanes may help lower travel speeds.



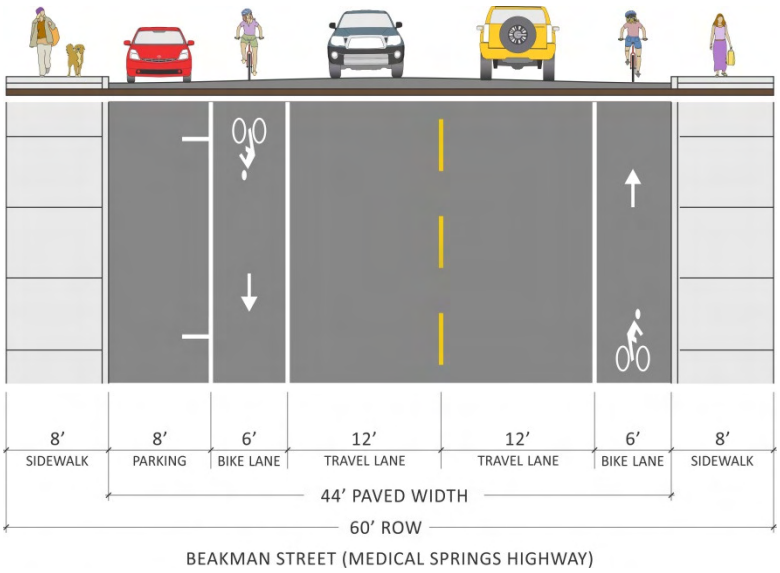
MAIN STREET (HARRISON TO S. CITY LIMITS)

Considerations

- Dedicated 6’ bike lanes offer a greater sense of bicycle comfort and would create a consistent bike lane through Union.
- Would require a 4-foot widening of the Main Street travel way east of the existing centerline in order to avoid reconstruction of an extensive existing curb and sidewalk section.
- Narrower travel lanes may help lower travel speeds.

Medical Springs Highway (Beakman Street) Striping Exhibits

In addition to Main Street, a segment of the Medical Springs Highway was also investigated for revisions. Like Main Street, Beakman Street may potentially be designated as an STA. It also has an existing wide travel way that currently does not formally accommodate bicycle travel. In recognition of this, a preliminary preferred standard for Beakman Street was developed as illustrated below.



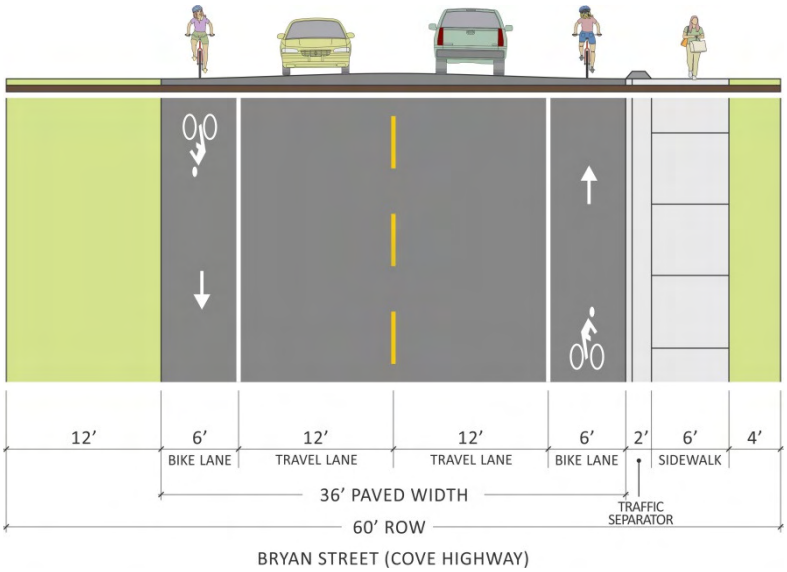
BEAKMAN STREET (MEDICAL SPRINGS HIGHWAY)

Considerations

- Dedicated 6′ bike lanes offer a greater sense of bicycle comfort.
- Parking would be removed on the south side of Beakman Street, potential affecting some business owners.
- Does not require modification of the existing curb-to-curb travel way
- Narrower travel lanes may help lower travel speeds.

Cove Highway Standard

A segment of the Cove Highway (Bryan Street) is a key east-west corridor on the north side of the City of Union. Characterized by an unimproved 20-foot paved travel way, a design standard was developed that would better accommodate vehicular travel, bicycle travel, and pedestrians in a lower cost manner. The preliminarily preferred standard for Bryan Street is illustrated below.



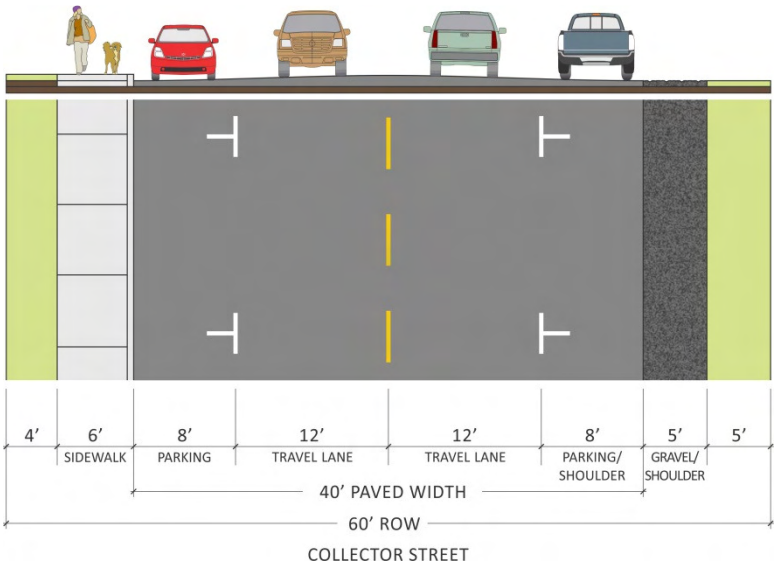
BRYAN STREET (COVE HIGHWAY)

Considerations

- Dedicated 6′ bike lanes offer a greater sense of bicycle comfort on a key bicycle corridor.
- A curb-less sidewalk on the south side of the highway would provide sufficient pedestrian accommodations without the need for costly curb-and-gutter.
- Removed some on-street parking on south side.

Collector Street Standard

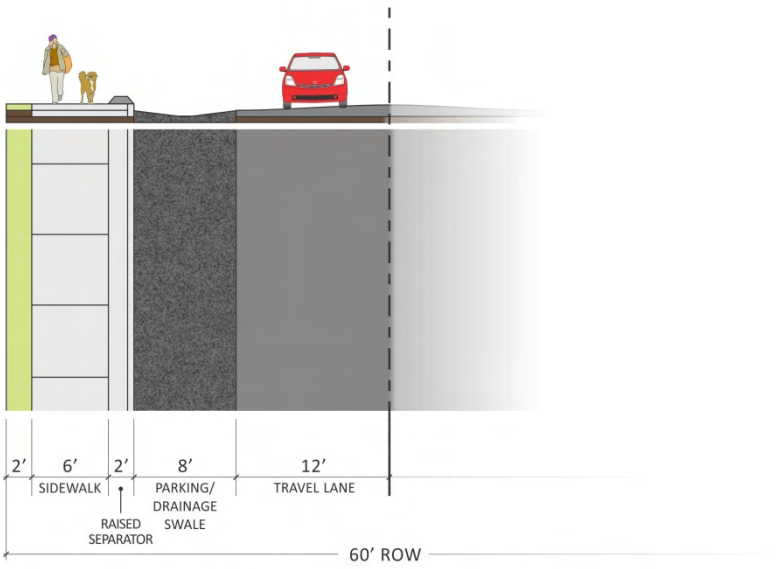
The City currently has a Minor Collector street standard as currently recognized in the Public Works standards. This standard dictates that sidewalk improvements on either Local or Collector streets are limited to curb-tight sidewalks. In recognition that this form of sidewalk treatment typically requires the more costly curb/gutter and storm sewer design, an option was developed as illustrated in the following Collector Street Exhibits. This alternative would allow for an 8-foot parking/drainage swale and a 6-foot wide concrete pathway. A raised two-foot concrete traffic separator would buffer the concrete pathway from the drainage swale and providing additional delineation and comfort for pedestrians.



COLLECTOR STREET

Considerations

- This is the current "Collector" standard. No revisions are recommended.



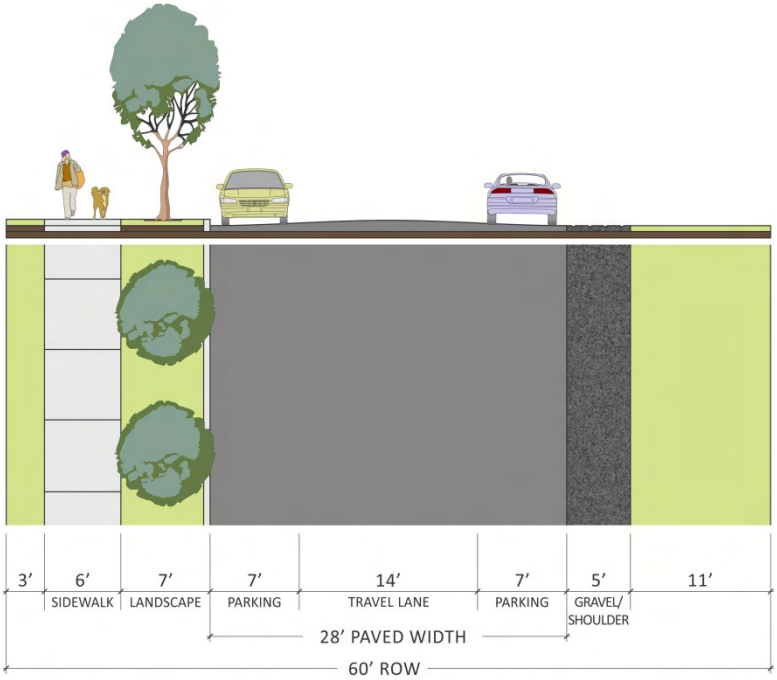
COLLECTOR STREET WITH SIDEPATH OPTION

Considerations

- Provides an option for constructing less costly "Collector" roadway that does not require curb, gutter, and storm drainage.
- Cross section feels more like Union.

Local Street Standards

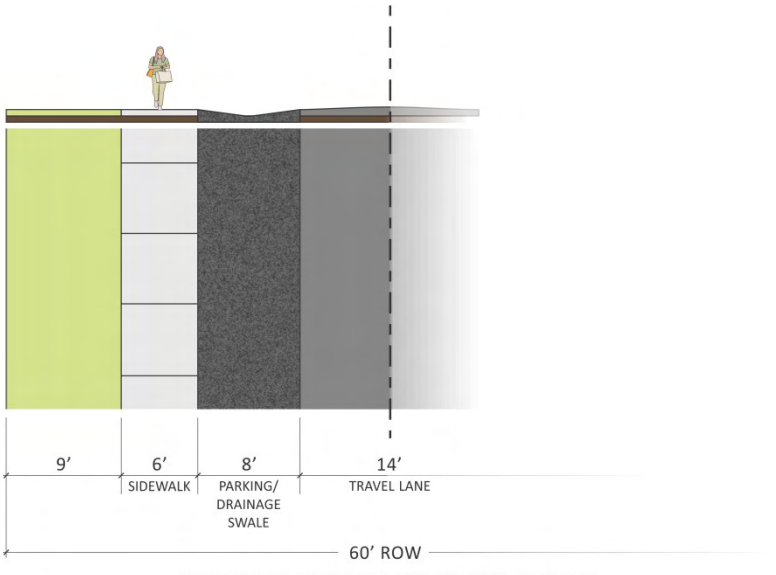
The City currently has a Local Street standard as currently recognized in the Public Works standards. This standard has a wide 40’ paved travel way and dictates that sidewalk improvements be limited to curb-tight sidewalks. In recognition that this street standard is too wide and this form of sidewalk treatment typically requires the more costly curb/gutter and storm sewer design, new local street standards were developed as illustrated in the following Local Street Exhibits.



LOCAL STREET (NARROW OPTION)

Considerations

- Offers a narrower street width.
- Allows for the development of a separated sidewalk.



LOCAL STREET (NARROW OPTION WITH SIDEPATH)

Considerations

- Provides an option for constructing less costly “Local Street” roadway that does not require curb, gutter, and storm drainage.
- Cross section feels more like Union.

ALTERNATIVE CONCEPTS – NEW ROADWAY AND INTERSECTION IMPROVEMENTS

The new intersection and roadway improvements section outlines those transportation improvement concepts that have been identified to mitigate deficiencies in safety or connectivity in the future conditions analysis discussed in Technical Memorandum #1. Figure 4 identifies these projects and the sections below describe the potential improvements.

R1 - 10TH/OREGON STREET EXTENSION

One project recommended in the 1998 TSP that had not been completed is extension of 10th Street to the south from W. Grande Street to Oregon Street. To make the connection, Oregon Street will also need to be extended to the west to intersect with the 10th Street alignment. The project recommends providing two 14-foot travel lanes and 6-paved shoulders. In addition to the alignment, the improvement also recommends upgrading the facility to a collector classification. Currently, 10th Street is a "major collector" between Bryan Street and Dearborn Street and a local road south of Dearborn Street. The improvement would provide continuity in functional classification for the entirety of 10th Street.

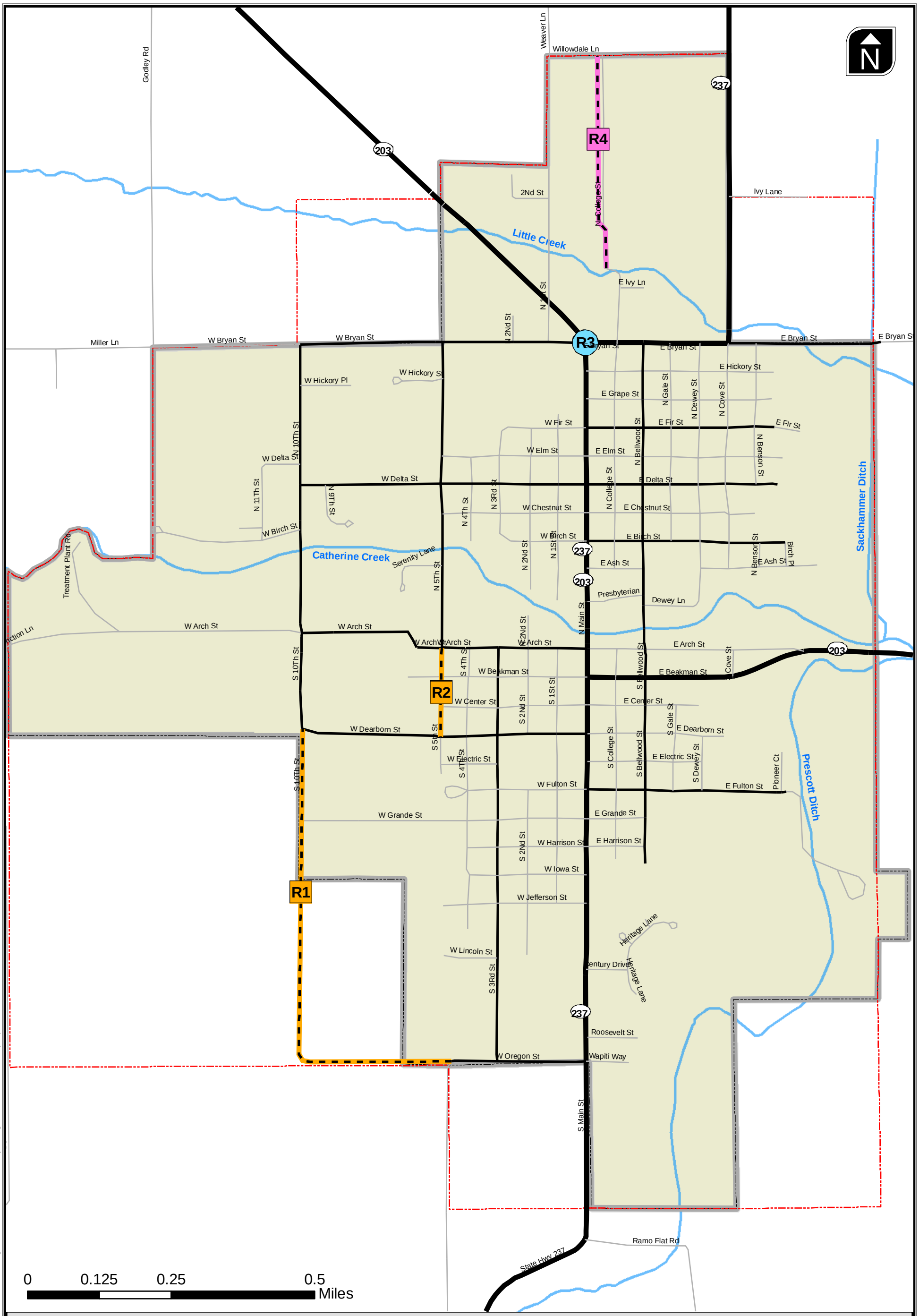
R2 - 5TH STREET EXTENSION

The only current north-south route in Union that provides full continuity in travel is Main Street. To the west, 5th Street and 3rd Street serve a similar purpose, but are disjointed at Arch Street, serving as independent north-south routes for the north and south portions of the city, respectively. In an effort to provide better circulation, it is recommended that 5th Street be extended south of Arch Street to Dearborn Street. This recommendation assumes that the new roadway would serve as a minor collector. The benefit of this project would provide a continuous route from Bryan Street through to the Athletic Complex and school campuses along Dearborn Street. This connection can serve the northwestern portion of the city as a parallel route to Main Street, encouraging students to bike to school on this lower volume facility.

R3 - BRYAN STREET/MAIN STREET INTERESECTION

The intersection at Bryan Street and OR 203 (Main Street) has been identified as having limited intersection sight distance on the eastbound approach. This intersection sight distance limitation is due to the skew of the intersection and existing vegetation growing on the property in the northwest quadrant.

An option to mitigate this issue would be to clear the vegetation that obstructs the view northward along Main Street (OR 203). Exhibit 2 shows the sight line needed to achieve the 280 feet of required



H:\proj\file\13445 - Union TSP Update and Goal 12 Plan\gis\TM#2 - Alternatives Analysis Figs\13445_FIG04_RdwyImprovements.mxd

intersection sight distance needed for the eastbound approach on W. Bryan Street. Currently, the intersection has approximately 160 feet of available intersection sight distance.

Coordination with the property owner will be required for initial removal and continued maintenance.

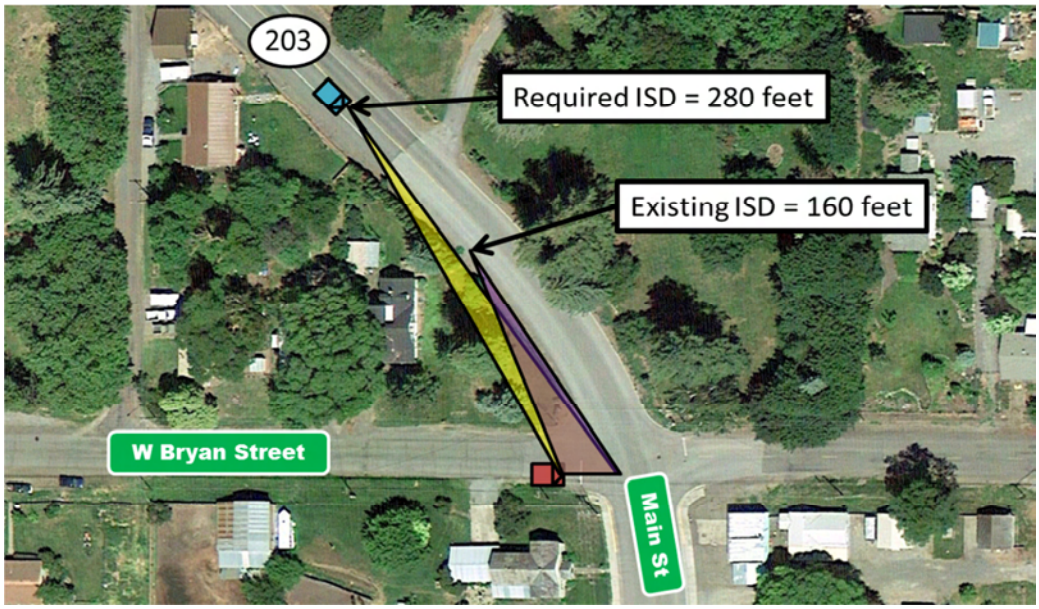


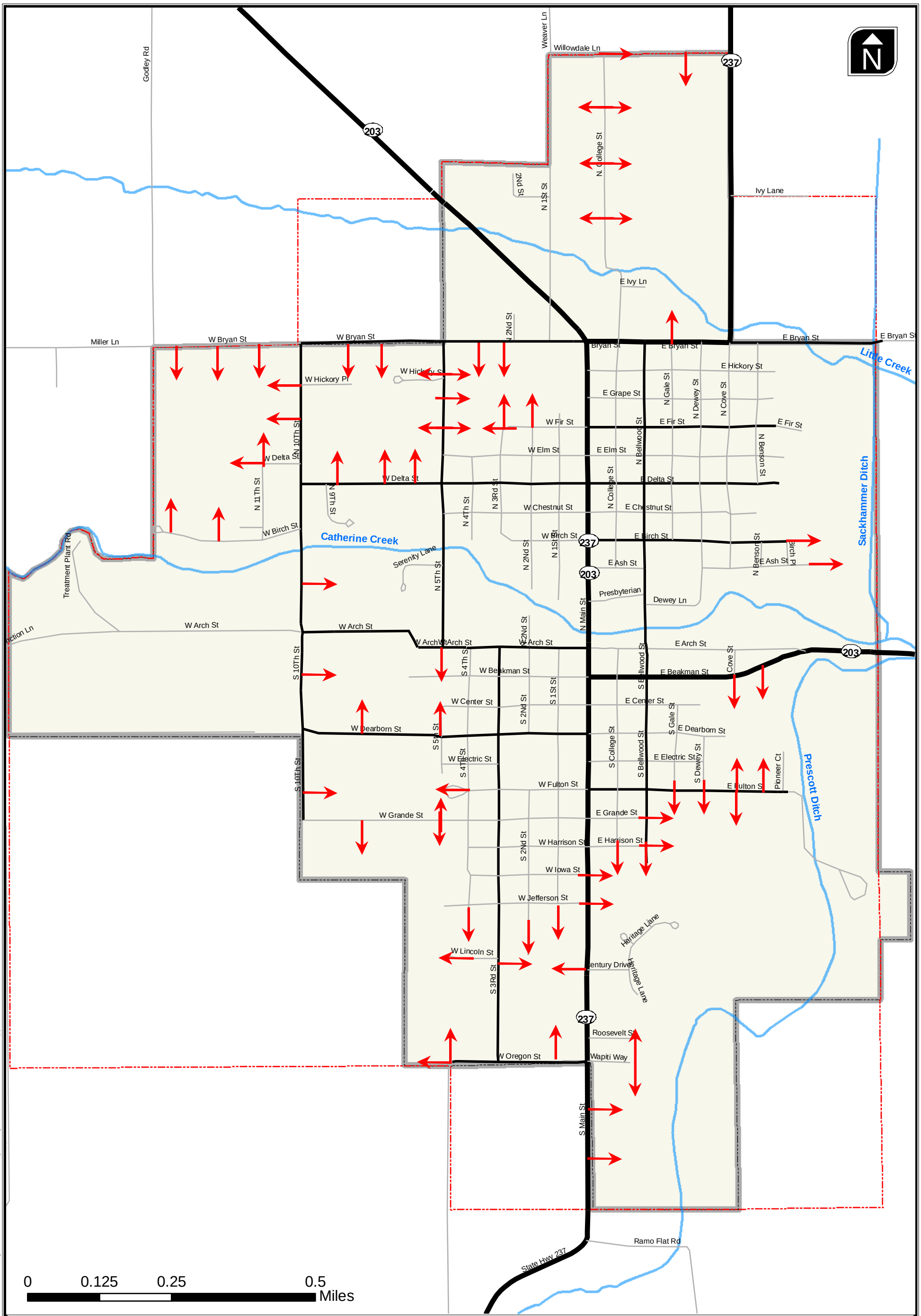
Exhibit 6 Intersection sight distance required for Bryan Street/Main Street

R4 – COLLEGE STREET RECONSTRUCTION/WIDENING

N College Street currently exists as a 15-foot wide packed gravel roadway. The roadway is narrow and is located in a high water table area. To address these concerns, N College Street should be reconstructed and widened and compliant with future local street design standards. The homes currently accessing the road have minimal setbacks (approximately 15-20 feet). To avoid impacting these residents, the alignment will need to be shifted to the west (for the northern 0.3 miles) and to the east (for the southern 0.8 miles). Precise alignment will be determined during design.

ADDITIONAL LOCAL ROADWAY CONNECTIONS

In addition to the major roadway improvements, the local street grid is also anticipated to be developed in the future. The construction of this local street grid is likely to be built as a result of future development in Union. These roadways are more likely to be privately funded by developers and not through the city's transportation funding. Guidance for the expansion of the local street network is shown in Figure 5.



ARTERIAL
COLLECTOR
LOCAL
Union City Limits
Union UGB
Roadway Connection Opportunities

Potential Local Street Network

UNION OREGON

Figure 5

H:\proj\file\13445 - Union TSP Update and Goal 12 Plan\gis\TM#2 - Alternatives Analysis Figs\13445_FIG05_FutureOpportunities.mxd

POTENTIAL TRANSIT ENHANCEMENT POLICIES

Because the City of Union does not own and operate the existing transit service, they have limited say in how to plan for future expansion or improvements in service. However, the following transit enhancement policies would help Union indirectly improve access to transit and encourage the development of physical elements or attributes which would make transit more accessible to all citizens of Union.

- Park and Ride – Because many Union residents work in La Grande, there is potential demand for carpooling given the right facilities are available. One potential transit-based enhancement would be the identification of a formal park and ride facility to serve Union residents. Facilities could include, but not limited to:
    - *Off-street Park-and-Ride* – an existing parking area that would allow vehicles to be parked during the typical working period. Ideal locations include facilities that do not regularly generate significant amount of weekday parking demand such as churches or community centers. Potential locations include the parking lot at the Church of Jesus Christ of Latter-day Saints Meetinghouse and the empty triangular lot on the northwest corner OR 203 and N. 1st Street.
    - *On-street Park-and-Ride policy* – the city could identify potential street blocks, typically under-utilized during the weekday, to serve as locations available to those who choose to carpool. Potential locations include blocks along Main Street north of the Union Hotel (to avoid the increased traffic and pedestrian activity of the downtown blocks).

Figure 6 illustrates the existing transit service available in Union and the proposed park-and-ride sites.

Forest Service Property

Union LDS Meetinghouse

Community Bank

Union Baptist Church

Godley Rd
Weaver Ln
Willowdale Ln
237
203
N. College St
2Nd St
Ivy Lane
Little Creek
N 1St St
E Ivy Ln
Miller Ln
W Bryan St
W Bryan St
E Bryan St
E Bryan St
E Bryan St
W Hickory Pl
W Hickory St
E Hickory St
E Grape St
N Gale St
N Dewey St
N Cove St
W Fir St
E Fir St
E Fir St
N Bellwood St
N Benson St
N 10Th St
W Elm St
E Elm St
W Delta St
W Delta St
E Delta St
N 11 Th St
N 9Th St
N 4Th St
N 3Rd St
W Chestnut St
E Chestnut St
N College St
W Birch St
E Birch St
N 2Nd St
N 1St St
E Ash St
N Benson St
Birch Pl
Sackhammer Ditch
Catherine Creek
Serenity Lane
N 5Th St
Treatment Plant Rd
N Main St
Presbyterian
Dewey Ln
W Arch St
W Arch St
W Arch St
W Arch St
S 10Th St
S 4Th St
S 2Nd St
E Arch St
S Bellwood St
Cove St
W Beakman St
E Beakman St
W Center St
S 1St St
E Center St
S Gale St
W Dearborn St
S 5Th St
E Dearborn St
S College St
S Bellwood St
S Dewey St
W Electric St
S 4Th St
E Electric St
Pioneer Ct
Prescott Ditch
W Fulton St
E Fulton St
W Grande St
E Grande St
S 2Nd St
W Harrison St
E Harrison St
W Iowa St
W Jefferson St
Heritage Lane
W Lincoln St
S 3Rd St
Century Drive
Heritage Lane
Roosevelt St
W Oregon St
Wapiti Way
S Main St
Ramo Flat Rd
State Hwy 237

0 0.125 0.25 0.5 Miles

Potential Off-Street Park-and-Ride
Existing Transit Stop
On-Street Park-and-Ride
Existing Transit Route
Union City Limits
Union UGB

Proposed Transit Opportunities

UNION OREGON

Figure 6

H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TM#2 - Alternatives Analysis Figs\13445_FIG06_P_Transit.mxd

Section 3
Preferred Project List, Funding Assumptions, and Preferred Financially Constrained Plan Technical Memorandum

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

TECHNICAL MEMORANDUM #3

Union TSP Update

Preferred Project List, Funding Assumptions, and Preferred Financially Constrained Plan

Date:	April 11, 2014	Project #: 13445.0
To:	Sandra Patterson, City of Union Cheryl Jarvis-Smith, Oregon Department of Transportation	
From:	Matt Hughart, AICP; and Jon Crisafi (KAI) Matt Berkow (Alta Planning + Design) Andy Lindsey, Anderson-Perry & Associates, Inc.	
cc:	TAC and CAC Committees	

INTRODUCTION

This memorandum outlines the preferred transportation projects and their respective cost estimates that are intended to appear in the Draft Union TSP Update. It should be noted that specific formatting and the use of supplementary pictures will be addressed at the Draft Plan stage of development; therefore, this memorandum generally contains only draft plan text and figures.

Project Management Team (PMT) and Technical Advisory Committee (TAC) members reviewing this memorandum should provide comments to address the following questions:

- Are there projects that are shown in the preferred plan that should not be included?
- Are there projects that are not shown in the preferred plan, but should be included?
- Are there projects that are shown in the financially constrained plan that should not be included? Are there projects that are not shown in the financially constrained plan, but should be included?
- Are there modifications that should be made to the projects included in the preferred plan or financially constrained plan?

BACKGROUND

The purpose of this memorandum is to present the Draft Preferred and Financially Constrained Plans for the Union TSP Update. Technical Memorandum #1 documented existing and future transportation system conditions. Technical Memorandum #2 documented proposed alternatives for improving Union's multi-modal network.

The PMT, TAC, and general public provided comments and input regarding the alternative projects through the alternatives analysis. The input obtained through that process informed the draft preferred and financially constrained plan content.

Planning level cost estimates were developed for each of the projects based on average 2013 construction costs. The 2013 cost estimates along with priorities (e.g., near-, mid- and longer-term) for the projects were used to construct the financially constrained plan. The preliminary priorities assigned to each program, study and/or project were identified based on need and the consultant team's evaluation of needs provided to date in the project. The financially constrained plan includes as many of the near-term priority programs, studies, and projects as feasible without exceeding the forecasted 20-year transportation funding levels for the City.

TABLE OF CONTENTS

ACTIVE TRANSPORTATION PLAN

The active transportation plan presents those projects focused on facilitating pedestrian and bicycle travel.

PREFERRED ACTIVE TRANSPORTATION PROJECTS

Tables 1, 2, and 3 summarize the preferred pedestrian, bicycle, and trail projects, respectively. Figure 1 illustrates the location of all pedestrian, bicycle, and trail projects in addition to the locations of crossing improvement opportunities. The projects were identified based on input received through investigating existing conditions, the PMT, TAC, and general public and were prioritized based on their proximity to schools, the underlying roadway's functional classification, and overall benefit to the transportation network.

Table 1 Union Preferred Pedestrian and Crossing Projects

Project (#) Name	Description	Reason for the Project	Priority (Timeline)	Cost[1]
(P1) Bryan Street (East)	Install curbless sidewalk along the south side of Bryan Street from Main Street to East to City Limits.	Will provide an important east-west route for pedestrians and provide a connection to the Eastern Oregon Livestock Exposition Grounds.	Longer-Term	$582,000
(P2) Bryan Street (West)	Install curbless sidewalk along one side of Bryan Street from 10th Street to Main Street. In association with this project, a formal pedestrian crossing should be considered across Main Street at Bryan Street (CR3).	Will provide an extension of the current walking route and allow for east-west connection on the northern perimeter of the city.	Longer-Term	$493,000[3]
(P3) Delta Street	Install curbless sidewalk along one side of Delta Street from 10th Street to East terminus. In association with this project, a formal pedestrian crossing should be considered across Main Street at Delta Street (CR1).	Will provide an east-west connection for pedestrians to the Livestock Grounds.	Longer-Term	$657,000[3]
(P4) Bellwood Street	Install curbless sidewalk along the west side of Bellwood Street from Bryan Street to Fulton Street. In association with this project, a formal pedestrian crossing should be considered across Beakman Street at Bellwood Street (CR6).	Will provide an important parallel north-south route that crosses Catherine Creek on the east side of town.	Near-Term	$884,000[3]
(P5) 3rd Street	Install curbless sidewalk along the east side of 3rd Street from Arch Street to Jefferson Street	Will provide an important north-south pedestrian and bicycle route that connects to the school campuses from Arch Street to Jefferson Street.	Near/Longer-Term	$411,000[2]
(P6) 5th Street	Install curbless sidewalk along the east side of 5th Street from Bryan Street to Arch Street	Will provide an important north-south pedestrian and bicycle route that connects to the school campuses in conjunction with the 3rd Street enhancement from Bryan Street to Arch Street.	Near-Term	$501,000
(P7) Jefferson Street	Install curbless sidewalk along the north side of Jefferson Street from 3rd Street	Will provide a pedestrian and bicycle route in the south end of town	Longer-Term	$103,000[3]

Project (#) Name	Description	Reason for the Project	Priority (Timeline)	Cost[1]
	to Main Street . In association with this project, a formal pedestrian crossing should be considered across Main Street at Jefferson Street (CR5).	connecting the 3rd Street enhancements to Main Street.		
(P8) 10th Street (North)	Install curbless sidewalk along the east side of 10th Street from Bryan Street to Catherine Creek Bridge	Will provide a complete north-south route for pedestrians and bicycles on the far west edge of the city, crossing Catherine Creek, and connecting from Bryan Street to Arch Street.	Near-Term	$747,000
(P9) 10th Street (South)	Install curbless sidewalk along the east side of 10th Street from Catherine Creek Bridge to Dearborn Street	Will continue the 10th Street (North) project to connect through to the Athletic Complex.	Near-Term	$245,000
(P10) Arch Street (East)	Sidewalk infill from 5th Street to Main Street	Will continue to establish Arch Street as a primary east-west route in town connecting to downtown.	Longer-Term	$218,000
(P11) Arch Street (West)	Install curbless sidewalks along the south side of Arch Street from 10th Street to 5th Street	Will continue to establish Arch Street as a primary east-west route in town connecting to downtown.	Longer-Term	$330,000
(P12) Dearborn Street	Sidewalk infill from Baseball field to 10th Street	Will extend the sidewalk on the south side of Dearborn Street to baseball field.	Near-Term	$198,000
(P13) Fulton Street (East)	Will provide a connection from existing sidewalks to the cemetery and golf course. from Main Street to Pioneer Court	Connects to existing sidewalks providing access to cemetery and golf course.	Longer-Term	$360,000
(P14) Fulton Street (West)	Install curbless sidewalk along the north side of Fulton Street from 3rd Street to Main Street	Will complete connection along Fulton Street and provide direct access to school campus.	Near-Term	$113,000
(P15) 1st Street	Sidewalk infill from Center Street to Dearborn Street	Will provide sidewalks on all sides of the elementary and high school campuses.	Near-Term	$68,000
(P16) Pedestrian Bulbouts	Install pedestrian bulbouts along Main Street at Arch Street, Beakman Street, Center Street, Dearborn Street, and Fulton Street	Will improve pedestrian crossing at treated intersections by decreasing the Main Street crossing distance and increasing pedestrian during crossing maneuvers	Near-Term	$160,000
Sub-Totals				
Near-Term Priority (0-5 Years)				$3,327,000
Longer-Term Priority (5-20 Years)				$2,743,000
Total				$6,070,000

Notes:
[1]Planning level cost estimates are for construction and engineering. Cost estimates assume striping and signing changes occur within the existing pavement width (i.e., no additional construction or road expansion is required).
[2]A portion of the 3rd Street project from Fulton Street to Dearborn Street will be included in the approved 2015-2018 STIP. This segment constitutes the near-term priority for the larger P5 project.
[3]Cost does not include estimate for enhanced crossing treatment.

Table 2 Union Preferred Bicycle Projects

Project (#) Name	Description	Reason for the Project	Priority (Timeline)	Cost[1]
(B1) Main Street (South)	Install bike lanes from Arch Street to Oregon Street as shown in Figure 4. In association with this project, a formal pedestrian crossing should be considered across Main Street at Century Drive (CR4).	Bicycle lane accommodation on a designated bike route through the main throughway in Union (Main Street). Would potentially reduce bicycle riding along the commercial portion of Main Street sidewalks.	Near-Term	$26,600[2]
(B2) Main Street (North)	Install bike lanes from Bryan Street to Arch Street as shown in Figure 4.	Striped bicycle accommodation on a designated bike route through the main throughway in Union (Main Street).	Near-Term	$19,600
(B3) Cove Highway	Install shoulder bikeway from Bryan Street to City Limit. Assumes 6-ft paved shoulder with 2-ft gravel shoulder on both sides of roadway.	Bicyclist accommodation on a designated bike route.	Longer-Term	$422,000
(B4) La Grande-Baker Highway	Install bikeway signage from Main Street to City Limit	Bicyclist accommodation on a designated bike route.	Near-Term	$1,000
(B5) Beakman Street	Install bike lanes from Main Street to Arch Street split	Bicycle lane accommodation on a designated bike route to/from the main part of town.	Near-Term	$14,000
(B6) Medical Springs Highway	Install shoulder bikeway from Arch Street split to City Limit. Assumes 6-ft paved shoulder with 2-ft gravel shoulder on both sides of roadway.	Bicyclist accommodation on a designated bike route.	Longer-Term	$135,000
(B7) La-Grande Baker Highway	Install shoulder bikeway from Oregon Street to City Limit. Assumes 6-ft paved shoulder with 2-ft gravel shoulder on both sides of roadway.	Bicyclist accommodation on a designated bike route.	Longer-Term	$231,000
(B8) Bryan Street	Install bike lanes from Main Street to Cove Street	Striped bicycle accommodation on a designated bike route to/from Cove.	Longer-Term	$9,100
Sub-Totals				
Near-Term Priority (0-5 Years)				$61,200
Longer-Term Priority (5-20 Years)				$797,100
Total				$858,300

Notes:
[1]Planning level cost estimates are for construction and engineering. Cost estimates assume striping and signing changes occur within the existing pavement width (i.e., no additional construction or road expansion is required).
[2]Cost does not include estimate for enhanced crossing treatment.

Table 3 Union Preferred Trail Projects

Project (#) Name	Description	Reason for the Project	Priority (Timeline)	Cost[1]
(T1) Honda Trail 1	Clear trail along Catherine Creek. Coordinate with property owners and ditch company. South side of the creek is preferred alignment. Extents: 10th Street to 5th Street	Will provide a social trail along Catherine Creek for scenic route for walkers, joggers, and bicyclists. Promotes recreation and non-motorized travel.	Near-Term	$219,500
(T2) Honda Trail 2	Clear trail along Catherine Creek. Coordinate with property owners and ditch company. Requires marked crossing at 2nd Street to reach existing trail in City Park. Requires a footbridge over Catherine Creek near 2nd Street. Extents: 5th Street to City Park	Will provide a social trail along Catherine Creek for scenic route for walkers, joggers, and bicyclists. Promotes recreation and non-motorized travel.	Near-Term	$759,200
(T3) Fisher Field	Clear trail that will connect Main Street to the cemetery and golf course along the existing sewer easement. Will also have access to new subdivision. Extents: Main Street to Cemetery	Promotes recreational and non-motorized travel.	Longer-Term	$311,700
(T4) Livestock Grounds Ditch	Clear trail along east city limits around the Livestock Grounds Extents: Bryan Street to OR 203	Will provide a means of recreational trail around the eastern edge of the city. Promotes recreational and non-motorized travel.	Near-Term	$419,000
(T5) Cemetery Loop Connection	Clear trail that will connect through the cemetery to the Fisher Field Trail to complete loop near the golf course. Would require coordination with golf course and cemetery. Extents: Fulton Street to Fisher Field Trail	In conjunction with Fisher Field trail around the eastern edge of the city. Promotes recreational and non-motorized travel.	Longer-Term	$179,000
(T6) Honda Trail 3	Clear trail along Catherine Creek. Would require coordination with adjacent property owners. Extents: 10th Street to Transfer Station parking lot	Will provide additional distance to travel along water features in Union connecting out to the transfer station. Promotes recreational and non-motorized travel.	Longer-Term	$352,200
(T7) Catherine Creek Greenway East	Clear trail along Catherin Creek to the east of the Honda Trails. Would require coordination with adjacent property owners. Extents: Main Street to City Limit. In association with this project, a formal pedestrian crossing should be considered across Main Street (CR2).	Will provide additional distance to travel along water features in Union connecting out to the other proposed trail system surrounding the city. Promotes recreational and non-motorized travel.	Longer-Term	$399,500[2]
(T8) Golf Course Loop Tail	Develop trail around the perimeter of the golf course. Requires coordination with golf course and adjacent property owners. Extents: Ramo Flat to Beakman Street. In association with this project, a formal pedestrian crossing shouild be considered across Beakman Street (CR7).	Will provide additional distance to travel around Union and most likely opportunity for lookout points. This trail would provide the only significant elevation change in the existing/proposed trail system. Promotes recreational and non-motorized travel.	Longer-Term	$1,406,700[2]
Sub-Totals				
Near-Term Priority (0-5 Years)				$1,397,700
Longer-Term Priority (5-20 Years)				$2,649,100
Total				$4,046,800

Notes:
[1]Planning level cost estimates are for construction and engineering. Cost estimates assume striping and signing changes occur within the existing pavement width (i.e., no additional construction or road expansion is required).
[2]Cost does not include estimate for enhanced crossing treatment.

Walking/Bicycling Routes

A network of walking and bicycling routes is proposed to connect residential neighborhoods, parks, schools, visitor attractions, and commercial/employment areas. Many of these routes are along residential streets with lower traffic volumes and speeds, making them comfortable for biking, without separated bike facilities. To increase safety for all road users in Union, the following enhancements are proposed as means to further support walking and bicycling:

- Sidewalks without curb and gutter on at least one side of the street
- Marked crossings where these routes cross busier streets
- Wayfinding consisting of signs and/or pavement markings to alert pedestrians and bicyclists of the preferred routes and to increase motorist expectations of encountering active transportation users

0 0.125 0.25 0.5 Miles

Existing Facilities
- Existing Multi-use Path
- Existing Crossings
- Union City Limits
- Union UGB

Proposed Facilities
- Bike Lane
- Walk/Bike Routes
- Shoulder Bikeway
- Multi-use Path
- Potential Future Crossings

Proposed Walking and Biking Projects

UNION OREGON

Figure 1

INTERSECTION AND ROADWAY PLAN

The intersection and roadway plan presents projects related to intersection improvements, modifying existing roadway cross-sections or streetscapes, and extending existing roadways. Projects within the intersection and roadway plan influence travel by auto and freight and many also facilitate pedestrian and bicycle travel.

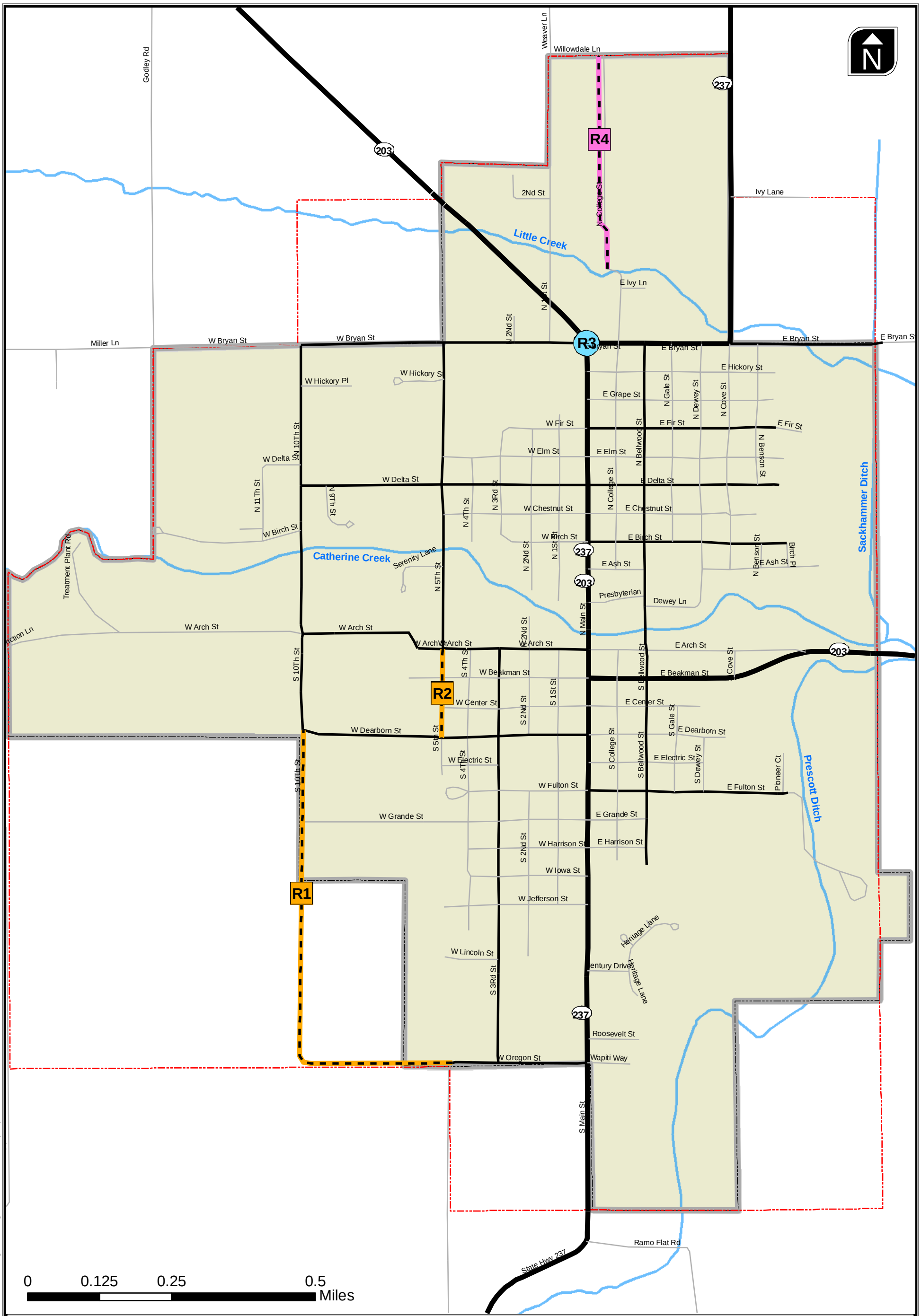
PREFERRED ROADWAY EXTENSIONS, NEW ROADWAYS, AND INTERSECTION PROJECTS

Table 4 summarizes the preferred planned roadway extensions, new roadways, and intersection projects. Figure 2 illustrates the locations of these projects.

Table 4 Union Preferred Roadway Extensions, New Roadways and Intersection Projects

Project (#) Name	Description	Reason for the Project	Priority (Timeline)	Cost[1]
(R1) 10th/Oregon Street Extension	Extend 10th Street and Oregon Street to complete grid	Improve access to southwest part of city and facilitate full north-south route west of Main Street	Longer-Term	$2,065,000
(R2) 5th Street Extension	Extend 5th Street south to Dearborn Street	Improve north-south connectivity and circulation	Longer-Term	$480,000
(R3) Bryan/Main Intersection	Work with property owner to improve intersection sight distance at Bryan Street and Main Street	Improve safety at intersection which currently exhibits insufficient intersection sight distance	Near-Term	$2,000
(R4) College Street Reconstruction/Widening	Reconstruct and widen College Street from Willowdale Lane to Little Creek	Improve roadway facility (currently gravel) and address concerns of surrounding high water table.	Longer-Term	$682,000
Sub-Totals				
Near-Term Priority (0-5 Years)				$2,000
Longer-Term Priority (5-20 Years)				$3,227,000
Total				$3,229,000

Notes:
[1]Planning level cost estimates are for construction and engineering. Cost estimates assume striping and signing changes occur within the existing pavement width (i.e., no additional construction or road expansion is required.



Intersection Improvement

Road Widening/Reconstruction

Roadway Extension

Union City Limits

Union UGB

Proposed Intersection and Roadway Improvements

UNION OREGON

Figure 2

H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TSP Figs\13445_FIG02_RdwyImprovements.mxd

PREFERRED UPDATED FUNCTIONAL CLASSIFICATION

Union classifies roadways as Arterials, Major Collectors, and Local Streets. When observing the roadway network, the differentiation between Major and Minor Collectors in Union is minor to non-existent. The two classifications do not exhibit enough variability in traffic volume or TOW width to support a greater degree of classification within the collector class. Additionally, the current roadway cross sections do not provide guidance between major/minor collector roadways. An opportunity would be to simplify the collector classification as simply "Collector" which would encompass all existing Major and Minor Collector Roadways. Figure 3 shows the proposed functional classification map with this revision. Table 5 details the specific streets and extents of these revisions.

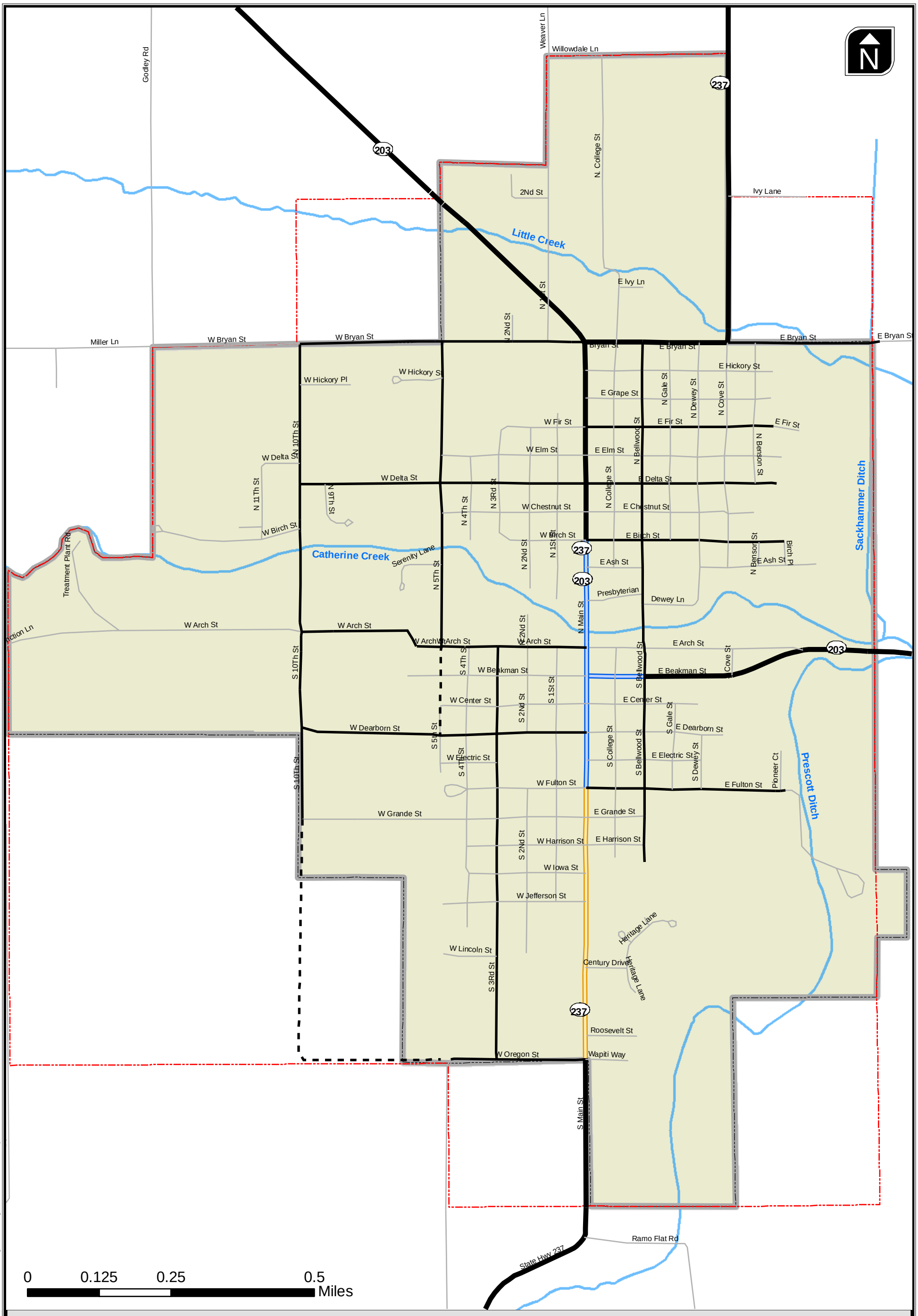
Table 5 Revisions to the City of Union Functional Classification Plan

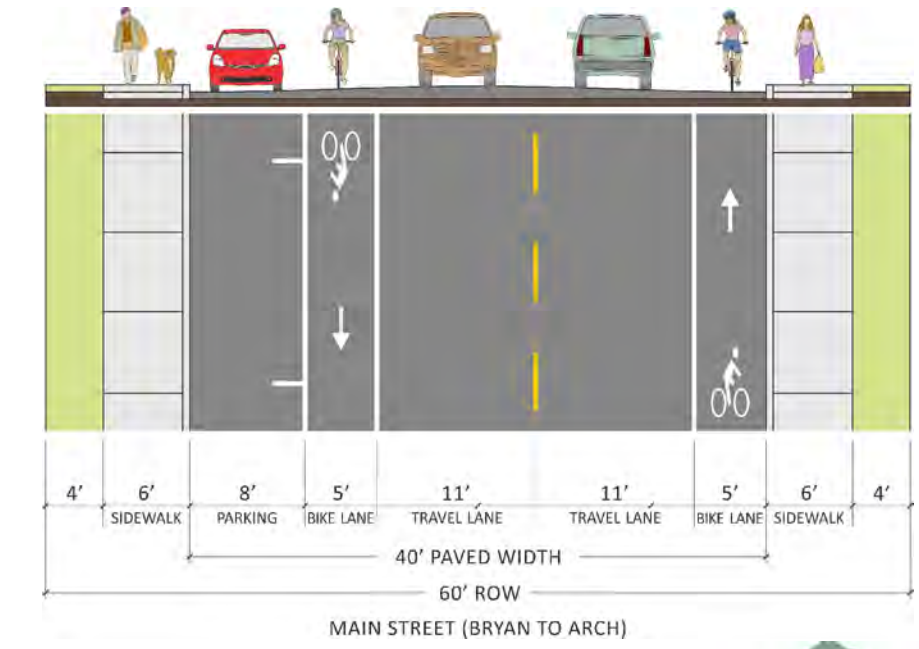
Roadway	1998 TSP Classification	Proposed Change	Justification/Considerations
Bryan Street (10th Street to Main Street)	Major Collector	Collector	Simplifying functional classification
Bryan Street (Cove Street to east city limits)	Minor Collector	Collector	Simplifying functional classification
Fir Street (Main Street to Benson Street)	Minor Collector	Collector	Simplifying functional classification
Delta Street (10th Street to Benson Street)	Minor Collector	Collector	Simplifying functional classification
Birch Street (Main Street to Birch Place)	Minor Collector	Collector	Simplifying functional classification
Arch Street (10th Street to Main Street)	Major Collector	Collector	Simplifying functional classification
Dearborn Street (10th Street to Main Street)	Major Collector	Collector	Simplifying functional classification
Fulton Street (Main Street to Pioneer Court)	Minor Collector	Collector	Simplifying functional classification
Bellwood Street (Bryan Street to Beakman Street)	Major Collector	Collector	Simplifying functional classification
Bellwood Street (Beakman Street to Harrison Street)	Minor Collector	Collector	Simplifying functional classification
3rd Street (Arch Street to Oregon Street)	Minor Collector	Collector	Simplifying functional classification
5th Street (Bryan Street to Arch Street)	Minor Collector	Collector	Simplifying functional classification
10th Street (Bryan Street to Dearborn Street)	Minor Collector	Collector	Simplifying functional classification

PROPOSED ROADWAY CROSS SECTION STANDARD REVISIONS

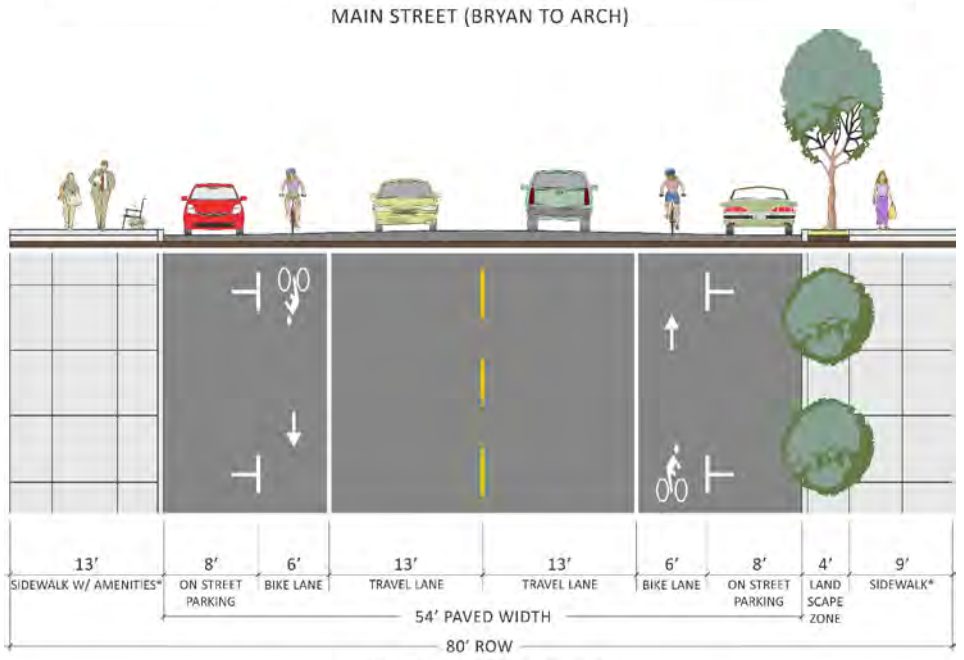
Figures 4 through 7 depict the proposed roadway cross section standard revisions for the TSP update. These cross sections notably establish standards for:

- Distinguishing arterial standards for Main Street, Cove Highway, and Medical Springs Highway
- A distinct collector roadway classification
- A distinct local roadway classification.


Godley Rd
Weaver Ln
Willowdale Ln
203
237
N. College St
2Nd St
Ivy Lane
Little Creek
E Ivy Ln
N 1st St
N 2Nd St
Miller Ln
W Bryan St
W Bryan St
Bryan St
E Bryan St
E Bryan St
E Hickory St
W Hickory St
W Hickory Pl
E Grape St
N Gale St
N Dewey St
N Cove St
W Fir St
E Fir St
E Fir St
N Bellwood St
W Elm St
E Elm St
N Benson St
N 10Th St
W Delta St
W Delta St
E Delta St
N 11Th St
N 9Th St
N 4Th St
N 3Rd St
W Chestnut St
E Chestnut St
N College St
W Birch St
E Birch St
N 2Nd St
N 1St St
N Benson St
Birch Pl
Sackhammer Ditch
Treatment Plant Rd
Catherine Creek
Serenity Lane
N 5Th St
E Ash St
E Ash St
Presbyterian
Dewey Ln
N Main St
W Arch St
W Arch St
W Arch St
W Arch St
S 2Nd St
E Arch St
E Beakman St
S Bellwood St
Cove St
S 10Th St
S 4Th St
W Beakman St
W Center St
S 2Nd St
S 1St St
E Center St
S Gale St
W Dearborn St
S 5Th St
E Dearborn St
S College St
S Bellwood St
S Dewey St
W Electric St
S 4TH St
E Electric St
Pioneer Ct
Prescott Ditch
S 10Th St
W Fulton St
E Fulton St
W Grande St
E Grande St
S 2Nd St
W Harrison St
E Harrison St
W Iowa St
W Jefferson St
Heritage Lane
W Lincoln St
Century Drive
Heritage Lane
S 3Rd St
237
Roosevelt St
W Oregon St
Wapiti Way
S Main St
Ramo Flat Rd
State Hwy 237
0
0.125
0.25
0.5
Miles
Arterial
Special Transportation Area (Arterial)
Urban Business Area (Arterial)
Collector
Future Collector
Local
Union City Limits
Union UGB
Proposed Functional Classification Plan
UNION
OREGON
Figure
3
H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TSP Figs\13445_FIG03_UpdatedFC.mxd

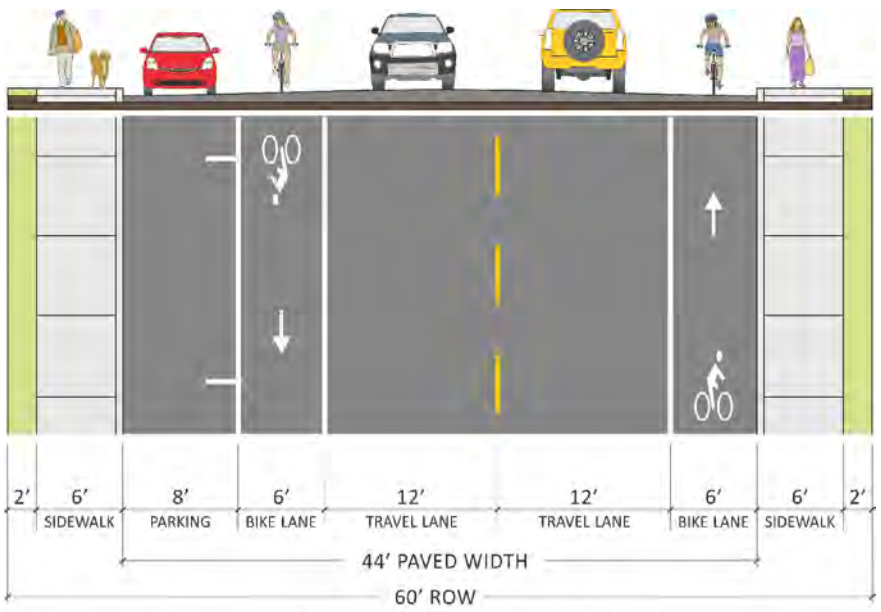


MAIN STREET (BRYAN TO ARCH)

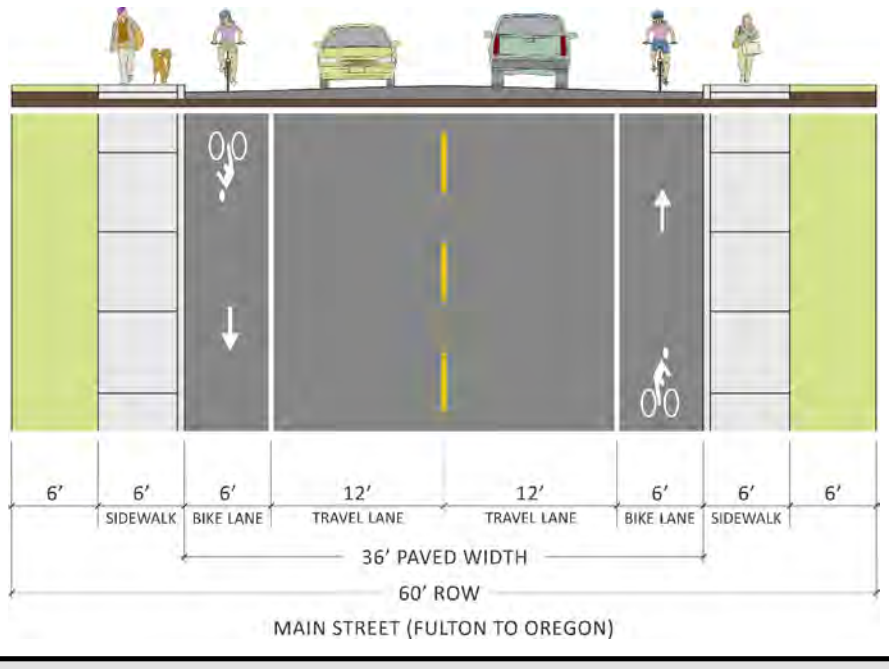


MAIN STREET (ARCH TO FULTON)

*Design may utilize either setback sidewalks with a landscape strip or a continuous 13' sidewalk with a 4-5' wide strip for amenities (Lighting, trees, benches, etc.)



MAIN STREET (FULTON TO HARRISON)

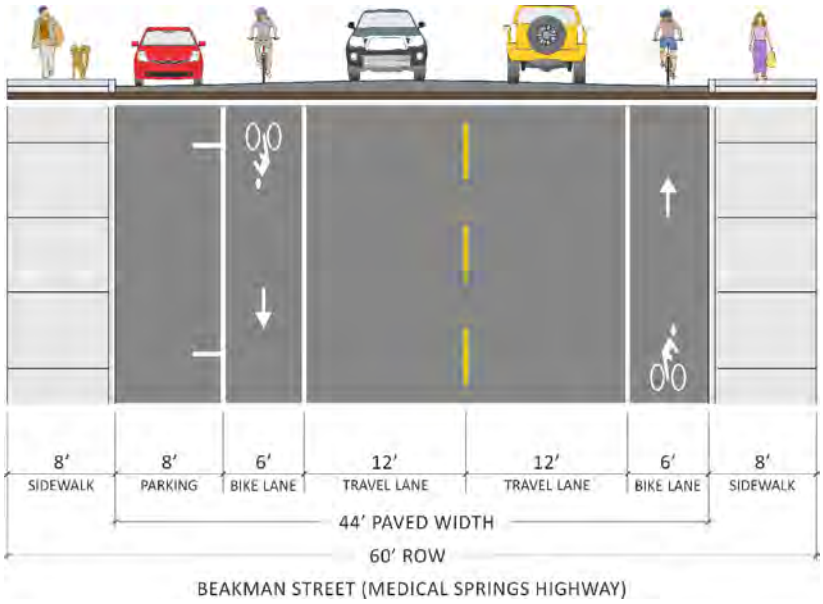


MAIN STREET (FULTON TO OREGON)

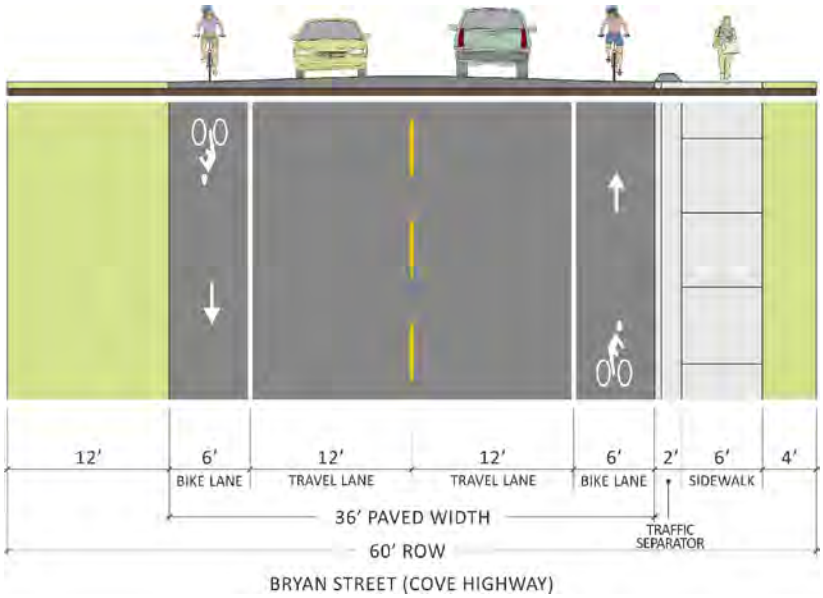
Proposed Cross Sections Arterial Roadway (Main Street)

UNION OREGON

Figure 4



BEAKMAN STREET (MEDICAL SPRINGS HIGHWAY)



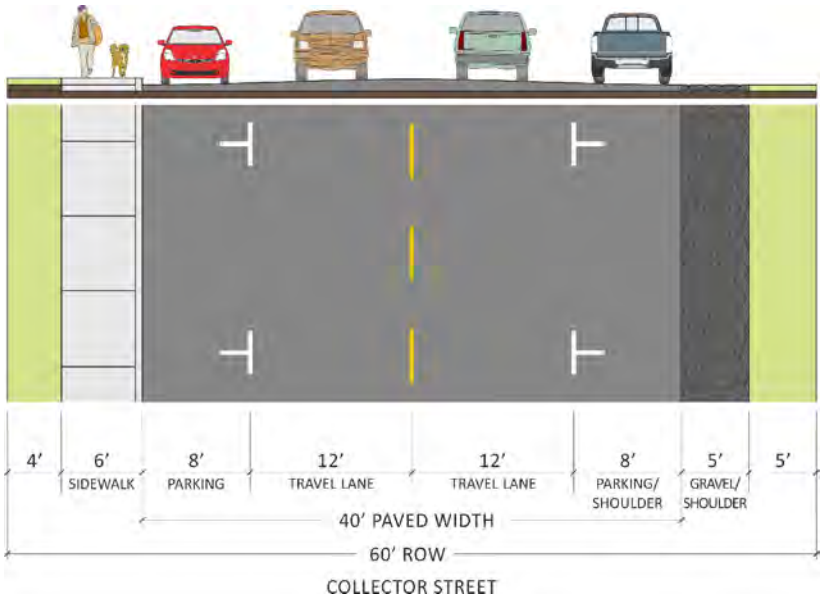
BRYAN STREET (COVE HIGHWAY)

Proposed Cross Sections Arterial Roadway (Medical Spring/ Cove Highway)

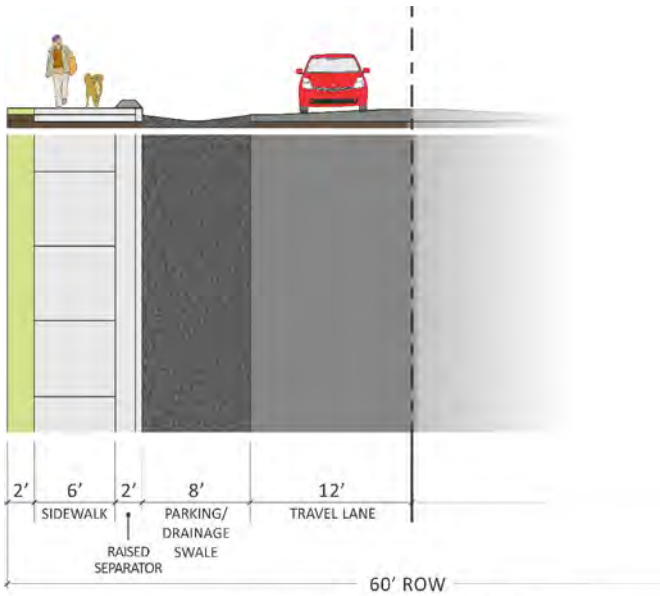
UNION OREGON

Figure 5

H:\proj\file\13445 - Union TSP Update and Goal 12 Plan\gis\TSP Figs\13445_FIG05_X-Section(Med-CoveHwy).mxd



COLLECTOR STREET



COLLECTOR STREET WITH SIDEPATH OPTION

Proposed Cross Sections Collector Roadways

UNION OREGON

Figure 6

Proposed Cross Sections Local Roadways

UNION OREGON

Figure 7

H:\projfile\13445 - Union TSP Update and Goal 12 Plan\gis\TSP Figs\13445_FIG07_X-Section(Local).mxd

TRANSIT PLAN

The City's existing Comprehensive Plan does not currently establish a policy framework that formally recognizes transit as part of Union's overall transportation network. Instead, the Comprehensive Plan includes generalized statements that recognize the need for serving the transportation disadvantaged. While this is an important fundamental policy, it does not thoroughly affirm and provide support for the accommodation of transit as a viable and active component of Union's future transportation network.

RECOMMENDATIONS

The City of Union's current lack of transit-related policies reveal a gap between the recognized importance of ensuring a complete transportation system and the regional transit service that is currently available or could be available in the future. In order to close this gap, a more complete Transit Plan will need to be established that focuses on three areas of improvement:

- Develop new transit policies that clarify how the City can become a better partner with existing and future regional transit providers.
- Improve the City's non-motorized transportation network in order to provide better access to regional transit stops and amenities.

New Transit Policies

New policy recommendations are provided below that will help to enforce the City's commitment to transit as a viable component of the local and regional transportation network:

Serve the Transportation Disadvantaged by Coordinating and Partnering with Existing and Future Regional Transit Providers

This policy bolsters the City's position that there should be travel choices for all citizens with special focus on those who don't have their own personal means of regional transportation.

Develop a Shared Use Park-and-Ride Facility

This policy will direct the City to work with regional transit providers to explore and develop a shared use park-and-ride facility. Potential locations for such a facility include underutilizes off-street parking areas such as local church parking lots or underutilized segments of Main Street on-street parking areas.

Explore the Potential for Regional Bicycle and Bus Connections

This policy will explore the possibility of developing a partnership that more formally integrates existing and future regional transit service with the Grand Tour Scenic Bikeway where transit could be used to accommodate some legs of the 134-mile bike route. The City could also advertise the potential future park-and-ride facility as a dedicated parking area where touring bicyclists can park their vehicle and depart of a multi-day bike/transit ride.

Capital Improvements

Capital improvements can help improve access to transit stops which would make transit more accessible to all Union citizens.

Upgrade Sidewalk Facilities

As project opportunities arise through capital improvement projects or developments, upgrade sidewalk facilities to be ADA compliant where transit service is provided and/or planned. The identified pedestrian improvement projects shown in the Active Transportation Plan will help to ensure better access to/from Main Street where transit service currently exists.

Provide Street Lighting

As project opportunities arise through capital improvement projects or development, install and/or improve street lighting at transit stops and along streets leading to transit stops.

Increase and Improve Pedestrian Crossing Opportunities

Improve pedestrian crossing opportunities across Main Street. The identified crossing improvement projects in the Active Transportation Plan will help to ensure better crossing opportunities at key points along the Main Street corridor.

Monitor and Improve Transit Stop Amenities

As opportunities arise, work with existing and future transit providers to enhance transit stop amenities. Amenities could include but are not limited to more visible transit stop signs, kiosks with regional route information, benches, shelters and lighting.

Coordinate with existing and future transit providers to remain knowledgeable of their near- and longer-term service priorities.

Policy statements will need to be created that establish an appropriate level of transit recognition, accommodation, and infrastructure investment over time.

- Coordinate with existing and future transit providers to remain knowledgeable of their near- and longer-term service priorities.
- Coordinate with existing and future transit providers to identify a location(s) for long-term park and ride facilities when the potential need arises.

TRANSPORTATION FUNDING

Financing a large contingent of bicycle, pedestrian, and transit improvements is unlikely in today's constrained financial environment. However, there are a variety of options available to fund transportation improvements within the City of Union. This memorandum presents an overview of existing and future transportation funding estimates for Union and identifies potential opportunities for the City to expand its transportation funding options.

HISTORY OF TRANSPORTATION FUNDING IN UNION

Key funding sources that have contributed to transportation projects within the city over the past five years are summarized below.

REVENUE SOURCES

Table 6 displays the total revenue by source used to fund transportation projects within the city over the past ten years.

Table 6 City of Union Revenue Source History

Revenue Source	FY 2012-2013	FY 2011-2012	FY 2010-2011	FY 2009-2010	FY 2008-2009	FY 2007-2008	FY 2006-2007	FY 2005-2006	FY 2004-2005	FY 2003-2004	Average
Taxes[1]	$125,018	$116,249	$94,889	$80,952	$75,706	$85,739	$91,777	$94,901	$94,490	$85,674	$94,540
Inter-Govt. Sources	$-	$25,000	$25,000	$25,000	$-	$-	$25,000	$-	$10,561	$-	[3]
Other[2]	$2,399	$1,957	$3,331	$8,847	$3,926	$2,138	$4,918	$7,519	$3,847	$3,291	$4,210
Total Revenue	$127,417	$143,206	$123,220	$114,799	$79,632	$87,877	$121,695	$102,420	$108,898	$108,898	$109,806

[1]Includes misc. taxes, State Gas Tax, and franchise fees
[2]Includes misc. revenue, interest income, and reimbursements. Excludes transfers from the General Fund or other city funds.
[3]Average for Inter-government sources was not included because these funds are not consistently available on an annual basis.

Based on the information shown in Table 6, the City of Union has generated an average of approximately $109,800 per year in total revenue for transportation related maintenance/projects. Also shown, the largest revenue sources for the city have traditionally been the motor vehicle tax and intergovernmental sources.

Other Revenue Sources/Partnerships

Although they should not be seen as a consistent and reliable source of transportation revenue, the City of Union has historically benefited from outside transportation improvement grants and other

miscellaneous improvements administered by the Oregon Department of Transportation (ODOT) and Union County. Major projects over the past 10 years that fall within this category include:

- Union golf course infrastructure improvements in the amount of approximately $132,000. This was funded by ODOT's Immediate Opportunity Fund.
- Dearborn Street sidewalk and streetscape improvements in 2012 to the amount of approximately $862,000. This was a transportation enhancement grant administered by the ODOT.
- Bryan Street bridge over Little Creek. The City of Union and Union County participated in the reconstruction of this bridge.

EXPENDITURE HISTORY

Table 7 displays the total expenditures on transportation related projects within the City of Union over the last ten years.

Table 7 City of Union Expenditure History

Expend-itures	FY 2012-2013	FY 2011-2012	FY 2010-2011	FY 2009-2010	FY 2008-2009	FY 2007-2008	FY 2006-2007	FY 2005-2006	FY 2004-2005	FY 2003-2004	Average
Personnel	$35,050	$42,336	$22,734	$28,009	$38,823	$40,257	$48,321	$12,201	$12,250	$12,947	$29,293
Materials & Services	$23,149	$48,272	$45,102	$39,917	$43,768	$44,125	$42,154	$36,173	$35,417	$40,209	$39,829
Maintenance	$32,097	$22,413	$-	$-	$-	$-	$-	$-	$1,195	$2,039	$5,774
Street Construction / Repair	$26,517	$54,996	$25,000	$26,414	$1,477	$26,596	$28,592	$32,566	$4,464	$46,825	$27,345
Total Expend-itures	$116,814	$168,016	$92,836	$94,340	$84,068	$110,978	$119,067	$80,940	$53,326	$102,020	$102,241

[1]Includes misc. taxes, State Gas Tax, and franchise fees
[2]Includes misc. revenue, interest income, and reimbursements. Exludes transfers from the General Fund or other city funds.

Based on the information shown in Table 7, the City of Union has spent an average of $74,896 per year on personnel/overhead/maintenance (or approximately 73 percent of available resources) and $27,345 on capital improvement projects (or approximately 27 percent of available resources). The information shown in Tables 6 and 7 were used to project the availability of future funding for transportation improvement projects as described below.

PROJECTED TRANSPORTATION FUNDING

Table 8 provides a summary of the potential future project funding (in year 2013 dollars) over the next five, ten, and twenty years based on an assumed average funding level of approximately $110,000 per year.

Table 8 Future Transportation Funding Projections

Revenue Source	Average Annual	5-Year Forecast	10-Year Forecast	20-Year Forecast
Total Revenue	$110,000	$550,000	1,100,000	$2,200,000
Revenue for Capital Improvements (27%)	$29,700	$148,500	$297,000	$594,000
Revenue for Personnel/Overhead/Maintenance (73%)	$80,300	$401,500	$803,000	$1,606,000

As shown in Table 8, it is anticipated that approximately $2.2 million will be available for transportation project funding over the next 20 years using historical funding trends. Under this methodology, approximately $594,000 of the $2.2 million can reasonably be assumed to be available for funding the transportation plan while the remaining $1.6 million will be needed for operations and maintenance.

Table 9 Estimated Transportation Improvement Costs

Type	Near-Term	Longer-Term	Total
Pedestrian	$3,327,000	$2,743,000	$6,070,000
Bicycle	$61,200	$797,100	$858,300
Trail	$1,397,700	$2,649,100	$4,046,800
Roadway/Intersection	$2,000	$3,227,000	$3,229,000
Total	$4,787,900	$9,416,200	$14,204,100
		Available	$594,000
		Funding Shortfall	$13,610,100

Based on the estimated projected funding available and the estimated costs of the transportation improvement projects included in this memorandum, the City of Union will need to identify additional funding sources to pay for transportation improvements over the next 20 years.

POTENTIAL FUNDING SOURCES

The projected transportation funding analysis shows that the City of Union will likely have very little funds that can be dedicated to transportation-related capital improvement projects over the next twenty years. As such, the City is going to have to continue to rely upon transportation improvement grants, partnerships with regional and state agencies, and other funding sources to help implement

future transportation-related improvements. Table 10 identifies a list of potential Grant sources and Partnering Opportunities for the City to consider during the course of the TSP Update. Following Table 10, Table 11 identifies a list of potential new funding sources for the City to consider in an effort to bolster funds for additional capital improvement projects.

Table 10 Future Transportation Funding Projections

Funding Source	Description	Potential Facility Benefit	Opportunities/Constraints
Statewide Transportation Improvement Program (STIP)	The Statewide Transportation Improvement Program (STIP) is Oregon's 4-year capital improvement program for major state and regional transportation facilities. This scheduling and funding document is updated every two years. Projects included on the STIP are allocated into the five different ODOT regions.	- Streets - Sidewalks - Bike lanes - Trails	The recent Dearborn Street project was a state-funded enhancement project that provided approximately $860,000 for streetscape and sidewalk improvements. Similar grant opportunities exist for Union as noted below. The next STIP (2015-2018) is currently in the review process and will be organized into two different categories that focus on projects that will fix/preserve the existing transportation network and enhance/improve the transportation network. ODOT currently has a sidewalk improvement project on Fulton Street (between 3rd Street and Main Street) included on the 100% Enhance project list. While the OTC won't formally approve the list until October 2014, there is a good possibility that this project will make it on the approved 2015-2018 STIP.
Oregon Bicycle and Pedestrian Program	The Oregon Pedestrian and Bicycle Grant program ended as a standalone solicitation process in 2012. Grant monies are now distributed through the "Enhance" process in the STIP program noted above.	See STIP above	See STIP above.
Oregon Parks and Recreation Funds	Recreational Trails Grants are national grants administered by the Oregon Parks and Recreation Department (OPRD) for recreational trail-related projects, such as hiking, running, bicycling, off-road motorcycling and all-terrain vehicle riding.	- Trails	OPRD distributes more than $4 million annually to Oregon communities for outdoor recreation project, and has awarded more than $40 million in grants across the state since 1999. Grants can be awarded to non-profits, cities, counties, and state and federal agencies.
Public/Private Partnerships	Public/private partnerships are agreements between public and private partners that can benefit from the same improvements. They have been used in several places around the country to provide public transportation amenities within the public right-of-way in exchange for operational revenue from the facilities.	- Streets - Sidewalks - Bike lanes - Trails - Transit	These partnerships could be used to provide services such as charging stations, public parking lots, bicycle lockers, or carshare facilities. In Union, partnerships for the installation of bicycle parking facilities, particularly for businesses along Main Street, would be one potential opportunity.
Community Service Projects	Small-scale improvements could be organized, led and conducted by various members of the community to help implement and offset the costs of larger infrastructure projects.	- Trails - Sidewalk/bike lane enhancement	Community service projects could be used to help clear brush for trail enhancement projects or improve existing trails. Other potential projects might include goathead removal and maintenance along popular walking and biking routes within the City.
Immediate Opportunity Fund (IOF)	The IOF is a discretionary fund that can be used for the construction and improvement of streets and roads that are needed to support primary economic development. Access to this fund is discretionary and the fund may only be used when other sources of financial support are unavailable or insufficient. The IOF is not a replacement or substitute for other funding sources.	- Streets - Sidewalks - Bike lanes	Union might be able to benefit from IOF funding as they can be used for projects that affirm job retention or create job opportunities, revitalize business or industrial centers, or create project ready industrial sites. A historical example of this funding source being used in Union was for the construction of infrastructure to support the Union golf course in 2001/2002.

Table 11 Potential New Funding Sources for Consideration in Union

Funding Source	Description	Potential Facility Benefit	Opportunities/Constraints
User Fees	Fees tacked onto a monthly utility bill or tied to the annual registration of a vehicle to pay for improvements, expansion, and maintenance to the street system. This may be a more equitable assessment given the varying fuel efficiency of vehicles. Regardless of fuel efficiency, passenger vehicles do equal damage to the street system.	Primarily Street Improvements	The cost of implementing such a system could be prohibitive given the need to track the number of vehicle miles traveled in every vehicle. Additionally, a user fee specific to a single jurisdiction does not account for the street use from vehicles registered in other jurisdictions.
Street Utility Fees/Road Maintenance Fee	The fee is based on the number of trips a particular land use generates and is usually collected through a regular utility bill. For the communities in Oregon that have adopted this approach, it provides a stable source of revenue to pay for street maintenance allowing for safe and efficient movement of people, goods, and services.	- Streets - Sidewalks - Bike lanes - Trails	A $5.00 montly fee charged to the estimated 859 households in Union would generate approximately $51,540 per year in revenue from residential uses alone. Such a fee might require a citizen vote to implement.
Local Fuel Tax	A local tax assessed on fuel purchased within the jurisdiction that has assessed the tax.	Primarily street maintenance or project specific intersection/roadway improvements.	There is only one primary gas station in the city, thereby putting the entire burden on one facility. Furthermore, Union has some, but not a significant amount of daily regional through traffic. This lack of significant through traffic places more of the tax burden on the residents of Union.
Systems Development Charges (SDCs)	SDCs are fees assessed on development for their impacts on public infrastructure.	- Streets - Sidewalks - Bike lanes - Trails - Transit	The City of Union does not currently impose transportation SDCs. However, given the ability to use these fees for capital imporovement projects, the transportation SDCs should be explored.
Stormwater SDCs, Grants, and Loans	SDCs, Grants, and Loans obtained for the purposes of making improvements to stormwater management facilities.	Primarily Street Improvements	Some jurisdictions in Oregon have used these tools to finance the construction and maintenance of Green Streets.
Optional Tax	A tax that is paid at the option of the taxpayer to fund improvements. Usually not a legislative requirement to pay the tax and paid at the time other taxes are collected, optional taxes are usually less controversial and easily collected since they require the taxpayer to decide whether or not to pay the additional tax.	- Streets - Sidewalks - Bike lanes - Trails - Transit	The voluntary nature of the tax limits the reliability and stableness of the funding source.
Sponsorship	Financial backing of a project by a private corporation or public interest group, as a means of enhancing its corporate image.	- Trails - Transit	Sponsorship has primarily been used by transit providers to help offset the cost of providing transit services and maintaining transit related improvements. Potential sponsorship opportunities could potentially include the Easter Oregon Livestock Show

Tables 10 and 11 are not an all-inclusive list of alternative funding sources. Each of these financing tools will require additional research to ensure that it is the right fit for the community, and can be closely matched with achieving the objectives of the TSP update.

FINANCIALLY CONSTRAINTED PLAN

Given the anticipated funding available shown in Table 8, as many of the near-term priority projects were identified that could potentially be funded with the City's anticipated $594,000 in funds for capital improvements. This list includes projects under the sole jurisdiction of Union as well as projects that would require the City's financial participation in joint projects with ODOT and Union County. The City will coordinate with other agencies to leverage funding opportunities and therefore the projects in the "Financially Constrained Project List" should be looked at as an illustration of the City's current funding priorities but one that will change over time.

Table 12 presents a list of programs, studies, and projects organized by modal plan that can be considered reasonably likely to have funding over the next 20 years at the current time. As noted in the Preferred Plan Summary section, all Preferred Plan policies presented above will be carried through to the Draft TSP pending revisions based on comments received from PMT, TAC, and general public. An overview of what is included in Financially Constrained Plan is below.

Table 12 Financially Constrained Project List

(Project #) Name	Description	Reason for the Project	Cost
Pedestrian and Bicycle Plan Programs and Projects			
(P12) Dearborn Street	Sidewalk infill from Baseball field to 10th Street	Will extend the sidewalk on the south side of Dearborn Street to baseball field.	$198,000
(P14) Fulton Street (West)	Install curbless sidewalk along the north side of Fulton Street from 3rd Street to Main Street	Will complete connection along Fulton Street and provide direct access to school campus.	$[1]
(P15) 1st Street	Sidewalk infill from Center Street to Dearborn Street	Will provide sidewalks on all sides of the elementary and high school campuses.	$[1]
(P5) 3rd Street	Install curbless sidewalk along the east side of 3rd Street from Arch Street to Jefferson Street	Will provide an important north-south pedestrian and bicycle route that connects to the school campuses from Arch Street to Jefferson Street.	$[1]
(B1) Main Street (South)	Install bike lanes from Arch Street to Oregon Street as shown in Figure 4. When completed, the city and ODOT should investigate potential for pedestrian crossing enhancements across Main Street at Century Drive (CR4).	Bicycle lane accommodation on a designated bike route through the main throughway in Union (Main Street). Would potentially reduce bicycle riding along the commercial portion of Main Street sidewalks.	$26,600[2]

(Project #) Name	Description	Reason for the Project	Cost
(B2) Main Street (North)	Install bike lanes from Bryan Street to Arch Street as shown in Figure 4. When completed the city and ODOT should investigate potential for pedestrian crossing enhancements across Main Street at the library (CR2).	Striped bicycle accommodation on a designated bike route through the main throughway in Union (Main Street).	$19,600[2]
(B4) La Grande-Baker Highway	Install bikeway signage from Main Street to City Limit	Bicyclist accommodation on a designated bike route.	$1,000
(B5) Beakman Street	Install bike lanes from Main Street to Arch Street split	Bicycle lane accommodation on a designated bike route to/from the main part of town.	$14,000
Intersection and Roadway Projects			
(R3) Bryan/Main Intersection	Work with property owner to improve intersection sight distance at Bryan Street and Main Street	Improve safety at intersection which currently exhibits insufficient intersection sight distance	$2,000
Total			**$261,200**

[1]Portions of these projects are included in the DRAFT 2015-2018 STIP. City costs are likely to be relegated to "local match" contributions which are unknown at this point.
[2]Cost does not include estimate for enhanced crossing treatment.

Section 4
Public Involvement

PUBLIC INVOLVEMENT

The City of Union Transportation System Update benefited from an effective public process facilitating the identification of transportation system deficiencies as well as potential solutions.

The following table summarizes the public involvement meetings and open houses, and the dates on which they occurred.

Event	Location	Time	Date
PMT Meeting #1	Union City Hall	9:00 – 11:00 a.m.	September 24, 2013
Stakeholder Meeting #1	Union City Hall	12:00 – 2:00 p.m.	September 24, 2013
Stakeholder Meeting #2	Union City Hall	7:00 – 9:00 p.m.	September 24, 2013
Bike Tour	Study Area	4:30 – 6:00 p.m.	September 24, 2013
TAC Meeting #1	Union City Hall	9:00 – 11:00 a.m.	November 7, 2013
Youth Workshop #1	Union High School	11:30 a.m. – 12:30 p.m.	November 8, 2013
Youth Workshop #2	Union Elementary School	1:00 – 2:00 p.m.	November 8, 2013
Combined PMT/TAC Meeting #2	Union City Hall	3:00 – 5:00 p.m.	January 29, 2014
Community Open House #1	Union City Hall	6:00 – 8:00 p.m.	January 29, 2014
PMT Meeting #3	Conference Call	3:30 – 4:30 p.m.	February 19, 2014
PMT Meeting #4	Conference Call	10:30 a.m. – 12:00 p.m.	April 8, 2014
Community Open House #2	Union City Hall	4:00 – 6:00 p.m.	April 16, 2014

The following items of public process documentation are included with this appendix:

- Technical Advisory Committee (TAC) Meeting Agendas and Minutes
- Open House Summary Memorandums and Sample Feedback Comment Sheets
- Youth Workshop Summary Memorandum
- Stakeholder Meeting Agenda and Minutes

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

September 24, 2013 – Union TSP Update and Goal 12 Plan
(Project Management Team Meeting #1)

IDIVIDUALS PRESENT:
Sandra Patterson – City of Union, City Administrator
Paul Phillips – City of Union, Public Works Superintendent
Cheryl Jarvis-Smith – ODOT
Dennis Hackney – ODOT
Andy Lindsey – Anderson-Perry & Associates
Dave Wildman – Anderson-Perry & Associates
Matt Berkow – Alta Planning + Design, Inc.
Drew Meisel – Alta Planning + Design, Inc.
Matt Hughart – Kittelson & Associates, Inc.
Jon Crisafi – Kittelson & Associates, Inc.

FROM: Matt Hughart (KAI) and Jon Crisafi (KAI)

DATE: October 4, 2013

Project Management Team #1 was held on September 24, 2013 in Union at 9:00 a.m. The purpose of the meeting was to kick off the Union Transportation System Plan (TSP) Update and Goal 12 Plan, introduce the project team, discuss project objectives, and discuss initial opportunities and constraints.

Consultant Team/Meeting Attendance

- Kittelson & Associates, Inc. (KAI)
    - Will serve as project leader and will attend all meetings
- Alta Planning + Design, Inc. (Alta)
    - Will serve as bicycle and pedestrian facility experts, will attend next meeting
- Anderson-Perry & Associates (AP)
    - Will serve as local connection to project and provide cost estimates for projects identified through the course of the project
- Siegel Planning (SP)
    - Will prepare code updates that reflect the TSP.

First Impressions on Existing Conditions

- AP recently completed pavement maintenance evaluation – spent time w/ Paul Phillips

- Identified main routes through town
- Identified street maintenance needs

- Completed some sidewalk projects – will need to continue to develop sidewalk network between school and downtown
- What was found from the pavement maintenance evaluation?
  - Identified improvements needed, and estimated costs to bring up all streets to what is needed (Fall 2012, finished Spring 2013)
  - Currently working on CIP plan for Union
- Beginning to categorize streets and develop plan for bringing them up to speed
  - Would this be a good opportunity to be incorporated into TSP?
    - Potentially as an appendix
- Currently have developed maps (AutoCAD format)
- 15 year waterline upgrade projects to denote how to sequence street improvements
- Strategy to classify streets (e.g. to have some streets return to gravel for easier maintenance)
  - City Council hasn't gotten to the pavement evaluation reports yet
    - Consultant portion complete, up to city now to make use of it, costs on a per block basis
    - The document serves as a means of education for council, providing options
  - Is there any kind of table or info of the pavement?
    - In map form, being put into a table (pending)
  - Mapping shows "Road X is rated Y"?
    - Yes, but only travel lanes are considered
    - No sidewalks, curbing, etc. are classified
- Alta noticed scenic bikeway signs
  - Seen as good wayfinding around town, and has a good grid network to work with (makes it easier to connect bike/pedestrian destinations)
  - Abandoned rail spur and creek provide good means of guiding trail work
  - Looking to connect the on-street network to the trails
- Connecting industry and jobs within the town, including historical features
  - Would like to hear about what brings people into Union such as Scenic Bike Route
  - Would like to walk the trails, take pictures

        - Identify obstacles to bike peds to find multiple solutions
        - Residential streets don't really have sidewalks, but don't necessarily need them
    - Industrial (council is looking to attract light industrial activities)
        - Currently surrounded by school/residential zoning – so trucking might be difficult to route in there without public response
        - Walking, Union currently has a trail in the park that just ends abruptly (only a couple hundred yards long) – would be great to extend for several miles
        - Biking – difficult to bike in Union,
            - Can't go up and down main street without going onto the sidewalks (if you live in the NW of town (5th/Main) needs to use 5th or Main to get to school; which are higher volume streets in town)
            - Safe routes to school identified 5th Street and Main Street as dangerous streets parents aren't comfortable with kids using those streets – therefore parents drive kids to school
            - Some families to bike from home to the store, but recreational biking is not prevalent
            - Would be great to have a trail from Union to Cove
            - Should be catering to people who already bike to Union
        - Does Union experience goathead issues with biking?
            - Yes, encourage kids not to go off road because of goatheads
- Want to take experiences from Baker City and apply to Union
    - Lessons:
        - Trail planning, while beneficial, make sure we do a lot of up front coordination with adjacent property owners; should work on mitigating misperceptions on trail development
        - Try targeted outreach to citizens/property owners that are likely to be vocal proponents and opponents
        - With constrained funding, major improvements unlikely, should work towards identifying grants
            - Should realistically identify projects that are necessary (e.g. some streets don't really need sidewalks)
        - Work more on route planning, rather than sidewalk, bike lanes, etc.
    - Opportunity to enhance the original recommendations from 1998 TSP

- Tends to be perception that there is little growth in Union, but homes and subdivisions currently being developed, and can use the TSP as a means of helping the development of Union
- Looking at off-street facilities (such as trails, footbridges, etc.); check with Union historical societies
- Golf course, cemetery, eastern Oregon Livestock Show grounds (late June)
- Equestrian trails and alternatives (long term) could potentially begin with some preliminary network to be expanded
- Trail in the park noted as the "Honda Trail" (10th Street and partway up 5th Street)
    - Had some jumps and places to hang out, but would be great to revitalize
    - Needs positive activities for the youth in the communities
- Swimming hole outside of Union Market; small berm near there
- Informal use of creek, provides a lot of activity for town
- No footpath to other creek, would be great to connect to this creek that was wiped out from some flooding
- Should discuss developing a park-n-ride location (potentially using existing church parking lot, to not pave new lot)
- College students traveling to Eastern Oregon, vanpool program potential
- Potential partnership between Union-Cove

o County doesn't seem to be on board, but should be included to develop the travel aspect
- La Grande is included? So is there just more focus on La Grande than the smaller cities

o Most people work out of La Grande
- More than 50% of population works in La Grande
    - Union serves as a "bedroom community" to La Grande
- Difficult to compete with La Grande retail, such as Wal-Mart
    - Mills are no longer operations, ended about 1988

- What would drive light industrial to Union?
    - Must work on providing incentives to develop in Union
        - Does not own enough acreage to donate
        - Has rail connections that can be used

        - Not too far off the interstate
        - Can provide water, electric, low property taxes, a lot of sewer capacity
    - Union-Pacific never owned the spur out of Union
        - Owned by someone out of Enterprise, probably for investment opportunities
    - Union has a lot of people on fixed incomes, really would like to get a business to provide a family-wage jobs (industry to hire 20-30 people)
        - Potential prison looked into it and was turned down
        - School and Market are probably biggest employers
        - Recently provided path to athletic facility (built 2000-ish)
        - Spring/Summer a lot of people walk/run
        - Cross Country program is very successful; fairly athletic town, just limited in facilities for people to use – but really limited to Main Street (which is lit)
        - Should expand off the existing lit pathway connections to athletic facilities
        - Any opportunities to use golf course as running trail (owned by county)?
            - Potentially could work out something with the county
    - Matt – "Fisher Field trail" (scoped); where is it?
        - An easement into subdivision (couple hundred yards)
    - There are quite a few skateboarders in town, maybe looking at a certain facility; should try to identify potential future facilities
        - Potential parks
        - Some streets are private (trailer park) and is not really integrated with the rest of the community; coordinated with owners
    - If youth are not athletically involved, there's nothing for them to do
        - Skatepark would be great
        - Unless boy scouts, religiously involved, or athletically involved, resort to delinquent activities
    - Industrial zoning, recently lady opened an art studio, holds concert venue there; potentially could serve as a concert venue/destination within town
        - Currently has no community center, may be able to serve as something similar
        - Provided music/wine tasting/etc.
        - Currently not utilizing a lot of property between her building and the creek
- Level of public of involvement
    - Baker City

        - Surprised by number of comments received after the plan was drafted
    - Should really get the public involved as early as possible, really find a means of something that really works for Union (flyers, word-of-mouth, newspaper, etc)
    - Be sure to gather as much information and local input as possible
    - Formal and Informal parts of Public Involvment
        - Formal Public Involvement (where people are specifically requested to attend)
            - Stakeholder Meetings
            - Bike Tour
            - Public Open House – provides formal venue for feedback; advertised by City Staff
            - City Council meetings
        - Informal – parts of this process; comments received outside of meetings
            - Should try to identify the most vocal members of the communities to help integrate them
            - Every community has citizens who are vocal and can be very distracting to the greater points of the plan

Youth Workshops

- City is hoping to get the student body president to engage the rest of the school
- Could potentially be used as a great way to get the rest of the community involved
    - City did not have a good relationship with school years ago; has since improved and seen success with the sidewalk project
    - 4th graders had a bicycle ride last year that was enjoyable for them
    - Seniors are required to participate in senior project, could potentially use the TSP as a means of a project

Next steps:

- KAI
    - Distribute meeting minutes (PMT #1, SH#1, SH#2)
    - Develop goals and objectives list from meeting feedback
    - Produce Existing Conditions and Future Conditions Tech Memos
- Alta
    - Distribute bicycle tour notes
- City of Union

  - Identify out who the PMT should coordinate with at the school to participate
  - Identify particular teacher (4th/5th grade and high school, gov. teacher)
  - Gather transportation expense records from past 10 years including maintenance and improvements
- ODOT
  - Gather transportation expense records for Union from past 10 years including maintenance and improvements

Schedule:

- Week of November 4th or 11th
  - Report findings of Existing/Future Conditions
  - Conduct Youth Workshop
- Week of December 16th or early January 2014
  - Public Open House
- Mid-March 2014
  - City Council Work Session – requires public notice but not public testimony
- Mid-May 2014
  - Union TSP Adoption
- Deadline for completion: June 30, 2014

9/24/13
12:00 - 2:00

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

UNION
OREGON

Stakeholder Meeting

Sign-in Sheet

Name ANDY LINDSEY - ANDERSON PERRY & ASSOC.

Address

Email

Name Cheryl Jarvis-Smith, ODOT 541.963.1574

Address 3012 Island Ave, LaGrande, OR 97850

Email Cheryl.Jarvis-Smith@odot.state.or.us

Name Drew Meisel

Address 7107 SE Alder St Portland, OR 97215

Email drew.meisel@altaplanning.com

Name Matt Berkow

Address 711 SE Grand Ave Portland, OR 97214

Email mattberkow@altaplanning.com

Name Dave Wildman - Anderson Perry

Address

Email dwildman@andersonperry.com

Name DENNIS HACKNEY

Address 3014 ISLAND AVE LAGRANDE, OR 97850

Email DENNIS.A.HACKNEY@ODOT.STATE.OR.US

Name MATT HUGHART + JON CUSAFI KITTELSON

Address 610 SW ALDER, SUITE 700 PORTLAND, OR

Email

Name

Address

Email

9/24/13
12:00 - 2:00

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Stakeholder Meeting

Sign-in Sheet

Name Sandra Patterson
Address PO 629 - Union
Email Admin@cityofunion.com

Name TAMARA WHIPPLE
Address 547 E. BIRCH ST
Email TAMMYWHIPPLE@MSN.COM

Name Carol Mulvany
Address P.O. Box 548 - Union
Email cjmulvany@charter.net

Name Linda Boettcher
Address P.O. Box 287 - Union
Email None

Name Charma D. Vaage
Address 153 E Electric St P.O. Box 607 Union
Email meadvc@eoni.com

Name Marilyn G PARRISH
Address 210 W. Fulton Union OR 97883
Email

Name FRANK THOMAS, NE OREGON PUBLIC TRANSIT
Address 2204 EAST PENN LA GRANDE, OR 97850
Email frank@ccno.org

Name Robin Phillips
Address 3012 Island Ave LaGrande 97850
Email robin.phillips@odot.state.or.us

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

September 24, 2013 – Union TSP Update and Goal 12 Plan
(Stakeholder Meeting #1)

IDIVIDUALS PRESENT:
Sandra Patterson – City of Union, City Administrator
Bill Lindsley – City of Union, Mayor
Tamara Whipple – Union Resident
Carol Mulvany – Union Resident
Linda Boettcher – Union Resident
Charma Vaage – Union Resident
Marilyn Parrish – Union Resident
Frank Thomas – ODOT
Robin Philips – ODOT
Cheryl Jarvis-Smith – ODOT
Dennis Hackney – ODOT
Andy Lindsey – Anderson-Perry & Associates
Dave Wildman – Anderson-Perry & Associates
Matt Berkow – Alta Planning + Design, Inc.
Drew Meisel – Alta Planning + Design, Inc.
Matt Hughart – Kittelson & Associates, Inc.
Jon Crisafi – Kittelson & Associates, Inc.

FROM: Matt Hughart (KAI) and Jon Crisafi (KAI)

DATE: October 4, 2013

Stakeholder Meeting #1 was held on September 24, 2013 in Union at 12:00 p.m. The purpose of the meeting was to kick off the Union Transportation System Plan (TSP) Update, introduce the project team, discuss project objectives, and give the stakeholders a chance to talk about the different transportation issues they would like to see addressed in the TSP update.

Meeting Purpose & Introductions

- The project team was introduced.
- General meeting purpose was discussed, along with general information regarding the project team, study timeline, and future project meetings.

Following the meeting purpose and introductions, each stakeholder was given the chance to discuss his/her perspective on bicycle, pedestrian, and transit system. These comments are outlined below.

- Seniors need to be able to get back and forth to La Grande and around town;
  - Should provide trails/multiuse path connecting golf course, hotel, and other locations; perhaps trail along the river
- Should paint clearly marked crosswalks, should be on every corner
  - Even by the school, the crosswalks are worn and faded
  - With no traffic signals or stop signs through town along Main Street, there is no means of slowing or stopping traffic for pedestrians/bicyces
  - Favors not using any traffic control devices on Main Street
- Walking Routes:
  - Main Street
  - "Five Mile Loop" (near the stock show grounds)
  - By the old mill (10th St to Bryan/Miller)
  - By/around the Mormon church
  - Birch Street
- A lot of people training for cycle OR in the area could make use of the scenic bike route
- Union is a center point for the training for Cycle Oregon as it is in the middle of the "figure 8" route
- School Routes
  - Students walk wherever they want mostly;
    - Main Street
    - 5th Street
  - A lot of parents drive their kids to school now, has a one-way route turn-around
    - Completed in 2006
  - Main Street is used because that's where their friends go
  - Only two ways across the Creek; hangout at the Union Market (Mike's)
    - Should consider the possibility of other connections, such as another pedestrian bridge
  - Issue with students biking on the sidewalks on Main Street
    - Would prefer Bellwood for kids to bike
  - ADA accessibility issues on sidewalks are acceptable along Main Street
  - Most streets don't have sidewalks, only really the main network
  - Bussing needs?
    - Must be a mile out to get a bus into school

        - Kindergarten busses AM students home
        - Contract outside bussing
        - A lot of students walk home
        - A lot of parents drop their kids in the morning
        - Kids in the county part of the district
- Transit options in Union
    - Should be a means of park and ride lots (signed/official)
        - Would like to start a vanpool program
        - Possibly provide some bus stops (signed) and provide connector service
        - Potentially connection to Hot Lake
    - Looking to put overnight parking and a kiosk in the park
        - Simply providing maps to identify wayfinding opportunities
    - Could identify sites where vanpool/park-n-ride locations?
        - Intersection of Cove Hwy/La Grande Hwy
        - Perhaps that Union markets itself as a starting point of the 3-day bike ride where people feel comfortable to keep their cars; or help for commute to La Grande
        - Mormon church parking lot potentially during weekdays
        - Lot behind Gravy Dave's
    - How does the vanpool work?
        - 6 people minimum, and designated driver to drop at several places
        - Should identify several good locations in La Grande to help distribute
        - Any member of the vanpool can drive as long as he/she is a certified driver
        - Could potentially contract a vanpool company
        - Do you go to these employers to find out what the shifts are like? How does the word get out? (A lot work at Nash, at Boise)
            - The TSP will just have a component that supports transits (in any form); general policy statements
            - If city goes through putting in place, what is the next step?
                - Roy Gomez at ODOT helps coordinate rideshare and through informal census, could just do flyers on
        - Also provides a means of economic driver; less money spent on transportation means more money spent in town with mobility enhancement
    - What are some of the connections/driving perspective?
        - Roadways for upgrades/improvements?

- Potential benefit from extending 10th Street north to connect with the highway?
  - Not a lot of people who live on 10th who would benefit
  - Potentially use it as a direct route to the industrial land; but would likely have a hard time bringing in the state in on it
  - Would potentially bi-pass the town, unfavorable
- Where is the most residential development?
  - Mostly southern area/new subdivision
  - Heavy commercial zoning in the south; allows for truck repair, that could potentially operate loudly around the clock

- Where is Union in 20 years? Where is it going? Economically? Growth?
  - Empty buildings on Main Street, it's not pretty though; should improve Main Street aesthetics, street furniture, covered benches, streetscapes
    - Trees had to be removed because they ruined the sidewalks
    - Trees should be very selective for downtown environments
  - Work towards restoring Victorian character in Union
    - Have a lot of talented woodworking folks and artisans
  - An informational kiosk
  - Should make the town more inviting, something to keep people from just driving through town
  - Union needs to attract businesses, when first moved here there were two mills, but once the lumber industry went, the town stagnated
    - Knotty Pine – windmills turned away business potential and development
    - Bend was a mill town that developed their recreational resources that then attracted businesses; can be used as an example
  - If Bellwood was paved with sidewalks could use as a parallel N-S route (lit) provide places where kids can
  - Main Street – what are the main crossing locations?
    - Right at the school
    - Across from the park/trailer park
    - Any enhanced crossing treatments?
      - ODOT felt the TSP would be a good opportunity for identifying that
      - Should look for strategic locations and avoid issues seen in Irrigon, OR

        - Should consider the aesthetic feel of downtown (RRFB may not be best solution)
    - Ramo Flats, other high density residential?
        - Not a lot of multi-family residential
            - If built, location still to be determined
    - Any former footbridge crossing that no longer exists?
        - Used to be one about 100 years ago because there was a school in the north part of town
    - A pedestrian crossing next to Main Street would be nice
    - Honda Trails used to be used 10 years ago, but now have obstacles
        - All agree to be a good idea revitalize Honda Trails
- If all streets were to be redone in Union, how would those streets be changed favorably?
    - Paved and sidewalks
    - Planter strips? Some can be very beautiful (provides shade, places for signs, hydrants) but also required to be maintained
    - City has 60' ROW, 20' travel ways (commonly)
- ATVs are permitted on all streets accept State Roads

9/24/13
7:00 - 9:00

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Stakeholder Meeting

Sign-in Sheet

Name MATT HUGHART & JON CRISAFI - KITTELSON & ASSOCIATES
Address
Email

Name Dave Wildman - Anderson Perry
Address
Email

Name Sandra Patterson
Address PO Box 639 Union
Email admin@cityofunion.com

Name Steve Robertson
Address 1120 W Birch
Email

Name Eileen Bowles
Address 615 N College Union
Email bowles.eileen@gmail.com

Name Matt & Donni Later
Address 1168 S. 3rd
Email donni01579@hotmail.com

Name Charie Blackburn
Address 955 W. Grande St
Email charieblackburn@hotmail.com

Name Debbie Riomondo
Address 1115 S. 2nd Street
Email riomondo@hotmail.com

9/24/13
7:00 - 9:00

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Stakeholder Meeting

Sign-in Sheet

Name Cheryl Jarvis-Smith, ODOT

Address

Email

Name Drew Meisel, Alta Planning + Design

Address

Email

Name Matt Berkow, Alta Planning + Design

Address

Email

Name

Address

Email

Name

Address

Email

Name

Address

Email

Name

Address

Email

Name

Address

Email

Name

Address

Email

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

September 24, 2013 – Union TSP Update and Goal 12 Plan
(Stakeholder Meeting #2)

IDIVIDUALS PRESENT:
Sandra Patterson – City of Union, City Administrator
Steve Robertson – Union Resident
Eileen Bowles – Union Resident
Matt Later – Union Resident
Donni Later – Union Resident
Charie Blackburn – Union Resident
Debbie Riomondo – Union Resident
Cheryl Jarvis-Smith – ODOT
Dave Wildman – Anderson-Perry & Associates
Matt Berkow – Alta Planning + Design, Inc.
Drew Meisel – Alta Planning + Design, Inc.
Matt Hughart – Kittelson & Associates, Inc.
Jon Crisafi – Kittelson & Associates, Inc.

FROM: Matt Hughart (KAI) and Jon Crisafi (KAI)

DATE: October 4, 2013

Stakeholder Meeting #2 was held on September 24, 2013 in Union at 7:00 p.m. The purpose of the meeting was to kick off the Union Transportation System Plan (TSP) Update, introduce the project team, discuss project objectives, and give the stakeholders a chance to talk about the different transportation issues they would like to see addressed in the TSP update.

Meeting Purpose & Introductions

- The project team was introduced.
- General meeting purpose was discussed, along with general information regarding the project team, study timeline, and future project meetings.

Following the meeting purpose and introductions, each stakeholder was given the chance to discuss his/her perspective on bicycle, pedestrian, and transit system. These comments are outlined below.

- Existing Bike Routes in Union?
    - The "five mile loop" was one of the most significant routes, has since become too dangerous with trucks; affects biking, walking, running

- Signs currently are around saying that kids can't ride or skateboard downtown
  - Kids should get on the sidewalks, much safer than riding on Main Street
  - Agree that the new ordinance isn't favorable, steep fines for children riding bikes (~$300/violation)
  - Drivers in Union don't seem to be aware or look for bicyclists
- Road going to athletic complex has sidewalk on one side, could a use bike lane be on the other side
- Blind corner at Miller/Bryan/OR 203 (limited sight distance)
  - Very dangerous to cross
  - "Three mile loop"
    - Keeps you off Main and Arch streets
- Many Union residents have said they prefer kids to be able to bike freely without concern from parents (which is one thing that is appealing about Union)
  - Some prefer kids bike on back roads (safe from traffic)
  - Some prefer kids bike on Main roads (familiarity with the neighbor concerns)
  - Kids gravitate to Main Street because of Union Market, Park, Library
  - Would like a north/south through connection to the park
  - Possibility of a footbridge, or connection across the creek on 2nd Street
  - Might be able to develop a route along the back neighborhoods near stock show grounds
  - If 5th/Bellwood were improved, would that be favorable to Main Street?
    - All – yes, if well illuminated
    - 10th/5th/Bellwood are the most connected N-S routes
  - Lighting on Dearborne is over-the-top (very bright), but is beneficial
    - Would prefer having corners lit with softer illumination (e.g. on Grand)
  - West side of Main has a lot of businesses, east side has less businesses plus parking lots; potential for removal of parking for bike lanes; provides a homey-feeling
    - Possible one-way couplet with for bike lanes
  - Biking and pedestrian activity picks up north of City Hall
    - Destinations: Mike's, Library, School, Drug Store
  - Would I feel more comfortable as a parent with a lane on Main?
    - Not really with small kids, Main Street is still busy whether a full bike lane is provided or not

- Planters can be used to separate bike lanes from traffic or use wider lanes
    - Would feel much more comfortable with a buffer

▪ How to re-establish the Honda Trails (brought up in Stakeholder Meeting #1)

- A lot of those trails are prohibited illegally (property owners claim no trespassing on land that isn't theirs)
- Some of the land is owned by Hutchinson Ditch Company, could potentially be a park that could be used by kids/community
- A lot of kids aged 8-13 could use that area to have fun, provide them with a more active environment
- Increasing the use and number of people there causes more eyes to watch over it, keeps it safer
    - Creating a trail that starts from Bellwood to ditch along Bryan (E of Main, mostly private property)
    - Favors the ideas of paths around the town to provide more routes for biking instead of just back-and-forth through town
- Potential loop around top of the golf course?
    - Favorable idea
    - Could it extend to connect to Ramo Flats?
        ▪ Ramo is a bit further out and more intense ride
    - No existing informal paths around the golf course
    - There is enough room for homes around the golf course that the county owns; therefore has enough space for a trail to surround the course
        ▪ Should establish the plans for a trail now before development occurs
- Potential for some bridle paths
    - Favorable idea
    - Suggestions to allow hitch posts along Main Street

- Driving/Automobiles in Union Issues/Concerns
    - Godley, half is paved half is unpaved (Godley is a county road)
    - Paving really could be done on every street in town
    - 10th Street/Arch Street is bad, big puddles, potholes
    - Means of prioritization for paving?

        - Yes, recently completed by AP
    - Updated cross section specs, etc?
        - Yes, recently updated by AP
        - Would be great to have every street spec-ed; could improve the appearance of the roadways, communities as a whole
            - Do we really need storm drains?
            - Could use planter strips to use as a drainage swale
            - Cove built a low-profile sidewalk; so there are solutions without curb and gutter
    - Intersection sight distance is compromised at a lot of intersections
        - Main Street/Arch Street limited visibility from Arch Street
            - Potential pre-emptive emergency signal
            - Can easily miss the turn for Medical Springs Hwy
    - Thinking about street standards, examining the possibility for planter strips for hydrants, signs, vegetation
        - People will not own that land, but need maintain it
        - Street standards are also important for establishing specs for upgrades and new construction separately
            - Currently there are discrepancies between existing TSP and current codes/specs
        - Dearborne/10th /Arch can all be built out to be full sidewalk, bike paths, etc and serve as the clear main roadways in town
    - Stop signs would not be favorable, to slow traffic along Main Street, but maybe some kind of a small roundabout
    - Grand/3rd is pretty dangerous and drivers commonly blow through
    - If main roads were "shined up," with those nice with sidewalks and curbs would make a big difference in the feel of the town
        - Would be nice to see all of Dearborne St paved
- Transit
    - Community Connections comes through on Thursday
    - Park-n-ride; stock show ground is often empty, mill site, or flower mill site especially if connected by bicycle facilities
        - Near ranger station
        - Potentially some parking along 1st Street

        - There may not be a lot of residents willing to carpool in Union
        - Carpooling is currently going on, there may just be a public perception that there is not a service available
    - Potentially Mormon church
    - Vanpools
        - Vans could be provided through grants
            - Sounds more favorable than carpooling, probably just unknown
    - Bus routes – currently a route travels from La Grande to Baker City daily
        - Sounds like a presently unknown service
        - Does the TSP work towards providing education?
            - The TSP would provide language that the city would work towards a concerted effort to provide education on transit, pedestrians, and biking
- Freight/Truck traffic
    - Would have to examine how much traffic exists to designate truck routes
        - Would be difficult to navigate a semi through town to turn off of Main Street to any of the side streets
    - Infrastructure may be need to be put in to accommodate freight and safely account for pedestrians/bikes
    - Identified that current industrial zoning locations are difficult to enter/exit from main highways; currently has an excess of industrial land
    - Should put into the plan that the powerlines/utilities to be placed underground for future upgrades/construction
- Union Market (parking lot) possibly a bridge there connecting the park?
    - Could keep people off Main Street

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

September 24, 2013 – Union TSP Update
(Study Area Bicycle Tour)

INDIVIDUALS PRESENT:
Matt Hughart - Kittelson & Associates, Inc.
Jon Crisafi – Kittelson & Associates, Inc.
Dave Wildman – Anderson-Perry & Associates
Matt Berkow – Alta Planning + Design, Inc.
Drew Meisel – Alta Planning + Design, Inc.
Cheryl Jarvis-Smith - ODOT
Sandra Patterson – City of Union
Matt Later – Union Resident
Donni Later – Union Resident

FROM: Matt Hughart (KAI) and Jon Crisafi (KAI), Matt Berkow (ALTA)

DATE: October 4, 2013

The consultant team led a walking and bicycle tour of Union so that members of the public, the PMT, stakeholders, and technical advisors could provide input on problem areas, connectivity opportunities, and other TSP improvement options. The tour began at 4:30pm on 9/24/13 from City Hall. General comments received during the walking/bike tour include the following:

- Main Street is perceived as unsafe to ride on in its current configuration. Potential solutions suggested include:
    - Adding bike lanes in wider portion and SLMs in the more narrow section.
    - A two-way parking lane buffered cycletrack
    - Removing one lane of on-street parking in the narrow section to accommodate bike lanes

- Bellwood was identified as a good potential walking and biking route, though traffic is higher than other local streets as it is one of few streets that crosses the Catherine Creek. If improved for bike and pedestrian travel, parents on the ride agreed that would be a safe alternative route (to Main Street) for children to use to access school.
- Parent frustration about the ban on bicycles on the sidewalk on Main Street when there is no good alternate route for children to ride on between home and school.

- The corner of Arch and Main has serious visibility issues for people traveling east/west. North of this intersection, Main St narrows 10' and the visibility issues are a result of that change. Potential curb extensions at the south end of the intersection could alleviate issue.
- Arch Street is identified as a Collector and has some existing sidewalks (in poor condition). Parents were uncomfortable with the idea of allowing children to walk and bike on the street with its limited sidewalks, citing higher traffic volumes and speeds.
- There are few streets that provide a continuous north/south route because of Catherine Creek. Efforts should be made to improve the continuous north/south streets: Main, Bellwood, and the combination 5th to 3rd, for quality bike and pedestrian access.
- Better lighting at intersections would help with bike and pedestrian safety and visibility.
- Potential trail connections along Catherine Creek, "the 5-mile loop", the Golf Course, and the ditch behind the stockground corral between Bryan and Catherine Creek.
- The intersection of Bryan and Main St is a very difficult blind corner that will need to be addressed.
- A crossing of Catherine Creek behind the supermarket might encourage fewer bicycle and skateboard trips along the Main Street sidewalks.
- Older, more experienced cyclists are comfortable riding on Main Street. Children are not as comfortable and therefore tend to ride on the sidewalks.

11/7/2013

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

~~Project Management Team~~
~~Stakeholder~~ Meeting

Sign-in Sheet

TAC Meeting #1

Name Matt Hughart
Address
Email MHUGHART@KITTELSON.COM

Name Jon Crisafi
Address
Email JCRISAFI@KITTELSON.COM

Name Cheryl Jarvis-Smith
Address ODOT, 3012 Island Ave, Lagrande, OR 97850
Email cheryl.jarvis-smith@odotstate.or.us

Name Heidi Klammer
Address 573 N. Dewey St. Union, OR. 97883
Email hrklammer@yahoo.com

Name Nadine Braman
Address 842 W. Grande St. Union, OR 97883
Email desertrider2@eoni.com

Name Hank Rodman
Address 242 W Grande St Union
Email —

Name Grant Young
Address 223A Baldock, EOU
Email grant.s.young@state.or.us

Name Dennis Hackney
Address 3017 Island Ave. LaGrande, 97850
Email Dennis.A.Hackney@ODOT.STATE.OR.US

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Stakeholder Meeting

Sign-in Sheet

Name Don Fine / For Jeff Wise (?)
Address 3012 Island Ave, La Grande, OR 97850
Email Donald.G.Fine@odot.state.or.us

Name Andy Lindsey - Anderson Perry & Assoc.
Address 1901 N. Fir, La Grande OR
Email Alindsey@andersonperry.com

Name Matt Berkow - Alta Planning + Design
Address
Email mattberkow@altaplanning.com

Name Eileen Bowles
Address 615 N. College Union
Email bowles.eileen@gmail.com

Name Doreen Cox
Address 1136 N Dewey
Email Snagger1@eoni.com

Name Ed Tibbs
Address P.O. Box 611
Email Tibbs.Ed@gmail.com

Name Scendra Patterson
Address PO Box 529 Union, OR 97883
Email admin@cityofunion.com

Name
Address
Email

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

November 7, 2013 – Union TSP
(TAC Meeting #1)

TEAM MEMBERS PRESENT:	Matt Hughart, Kittelson & Associates, Inc. (KAI) Jon Crisafi (KAI) Matt Berkow, ALTA Andy Lindsey, Anderson Perry & Associates Cheryl Jarvis Smith, ODOT Dennis Hackney, ODOT Don Fine, ODOT Grant Young, Department of Land Conservation and Development Sandra Patterson, City of Union Heidi Klummen, Citizen Nadyne Rodman, Citizen Hank Rodman, Citizen Eileen Bowles, Citizen Dorian Cox, Citizen Ed Tibbs, Citizen
FROM:	Matt Hughart (KAI) and Jon Crisafi (KAI)
DATE:	November 8, 2013

TAC Meeting #1 was held on November 7, 2013 in Union. The purpose of the meeting was to review the Existing/Future Conditions Technical Memorandum and solicit feedback on potential improvement opportunities for consideration in the upcoming Alternatives Analysis.

Existing Conditions

- Functional Classification
    - Add a key to describe definitions and acronyms (functional classification)
    - Lincoln Street is missing
    - Presbyterian Street is incorrectly displayed
    - Arch Street mislabeled
    - Birch Street should probably be a collector (not a local) on east side

- "Unknown Ditch" to be relabeled Wackhammer Ditch
- Little Creek is missing; to be marked by Sandra
- Ditches along 10th Street in the Birch Street subdivision are missing
- On Cove Street at Cove Hwy; unsure when to signal at Intersection #1
    - The cross section is wide, and relatively clear for folks traveling along Cove Hwy

- Walking and Biking
    - Ash Street (off of Main) has sidewalk on both sides 2 blocks
    - Dearborn has sidewalks on north side east of Main
    - Sidewalk in front of blue Victorian House
    - Trailer park road has been barricaded
    - Bus Stop at the Clinic should be marked
    - Running the trail along the south side of Catherine Creek; bridge across to the park; down to 10th Street
        - Narrative along could be used to segue into agreements with property owners
    - Add Honda Trails on the map as "social" paths
    - Ramo Flats is a route used by cross country team
    - There is confusion regarding the walking path around the golf course whether that should be permissible
        - Folks have been known to dump trash, bones, etc up through there
        - Use cemetery as a destination
        - Provides a location for an incline/elevation above the City
    - Footpath to the water tower?
        - Mostly an animal trial which can connect to the golf course (1 landowner)

- QMMLOS and Bicycle LTS

- Qualitative Multi-modal Level-of-Service and Bicycle Level of Traffic Stress is an experimental methodology to help smaller communities cost-effectively conduct analysis on facilities for ranking and alternative comparisons.
    - Analysis was conducted for arterial and collector network.
- Will there be improvements to the La-Grande Bake Hwy north of the City towards La Grande?
    - Can the shoulders be built out to the ROW?
    - Have noted fatalities have occurred due to breakover on existing shoulder
    - Plan is to extend shoulder if waste rock from previous project becomes available
- Bicycle LTS
    - Union is largely LTS 1 and LTS 2 with the exception of the highways to the north of the city.
    - There should be a red segment between Union Hotel and schools
        - The product of rankings is based on set criteria, so adjustments would compromise the solidarity of the analysis.
        - Further inferences and interpretations need to be made from the LTS analysis outcome.
- The LTS analysis results of Cove Highway should be addressed in the narrative.
- Crossing by Library is wide and difficult; would provide a good crossing opportunity for a zebra crosswalk
    - Also provide more bike racks along Main Street (by drug store, library) right by the Creek
    - Potentially could use bike corral on the street
- Sidewalk coming away from the Gazebo in the park has a curb cut but no cross walk
    - Consider RRFB (e.g. Baker City, Cove)
        - Could potentially cost $50-60k

Future Conditions

- Would like to see more sidewalks but would it be maintained by city or property owner
    - Typically are the responsibility of property owner
    - Asphalt pathways can last a long time
    - Existing sidewalks are damaged from tree roots, chestnuts
        - Trees and sidewalks should be well thought out
- Bellwood makes sense for an asphalt path (on one side)
- How do you clear a multiuse path in winter months?
- Physical barriers have been used (e.g. Echo)
    - Along Main Street?
    - Remove parking could be potential to accommodate, but is likely unfavorable for older residents (using the back parking lot, requires backing out/reverse driving)
- Shoulder on Cove Hwy has been used as a bridle path
- 5th is important to help kids get to school (on the west side of Main Street)
- When thinking about alternative street sections, should consider the ability for the community to pay for it
    - As well as consider the historical (Victorian) characteristic
    - Critical to keep it cheap because then projects get completed
- Crossings over Catherine Creek
    - 3rd Street might an efficient crossing
    - East side of town along Wackhammer Ditch
- Repair areas might be a project mentioned
- The bus service could also be better promoted at the clinic
    - Trailer factory jobs could potentially development
- Park and ride lot provides an opportunity in Union
    - Can utilize the free website service
    - Lot at high school, lot across the high school (Fulton/Main east side)
    - Right in front of the park

- Should have attractive light fixtures on Main Street
    - Should consider avoiding light pollution (provide opportunities for star gazing)

Funding

- As with other communities of Union's size, it will likely be difficult for the City to fund most of the transportation needs using existing revenue sources. As such, the majority of projects will likely need to be funded through grants and partnerships with other agencies like ODOT.
- Developing and adopting the TSP will be key to making sure Union is competitive in the grant application process.

Next Steps

- Coordinate next meeting potentially mid-December or early January
- June 2014 – project must be completed; adopted

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
101 S Capitol Boulevard, Suite 301, Boise, ID 83702 P 208.338.2683 F 208.338.2685

MEMORANDUM

Date: October 31, 2013 Project #: 13445

To: Sandra Patterson and Cheryl Jarvis-Smith

From: Matt Hughart

Project: Union TSP Update

Subject: Youth Workshop Agenda

The Youth Workshops for the Union TSP Update are scheduled for November 7th. Assuming five of us (Matt, Jon, Matt, Sandra, Cheryl and the teacher) will all be in attendance at these workshops, we wanted to share with everybody our thoughts for how to conduct and make the most of these feedback opportunities. With the help of ALTA Planning+Design, I have provided an outline for how we would like to conduct these sessions. We are open for discussing and revising any of this on before next Thursday.

Elementary School Workshop

- We envision a brief introduction where Matt and Sandra will address the class as a whole and explain the purpose of the TSP update and the exercise that we will be doing with them today.
- We would like to then break the students up into groups of 4-5 (depending upon class size) in order to maximize focus and provide each student with a greater chance of contributing.
    - Groups will be led by the teacher, Sandra, Matt, Jon, Matt, and Cheryl.
    - Each group will gather around a larger oversized map of the City.
    - Each leader should engage their group in a discussion about how they get around in Union. Some suggested questions for this exercise are listed below:
        - *What types of places do you go?*
        - *How do you usually get there?*
        - *Do you ever walk or bike to places?*

- *What are places that you go when you walk?*
- *What are places that you go when you bike?*

- The group leader should note on the map the feedback from each group of students. If interest is waning, you might consider relinquishing control of the sharpie and letting the kids draw popular walking/biking destinations directly on the map.

- Some tips for guiding a productive discussion are suggested below:
  - Ask one question at a time and prompt the kids with examples so they know the kind of info you are looking for.
  - The group leader can ask kids to say a place that they walk. If someone says the skate park, the facilitator can ask who else walks to the skate park. Then the facilitator should mark this information on the map.
  - It will probably be difficult for these kids to identify their routes. It's possible the facilitator could lead a discussion to identify general (i.e., non-location specific) hazards to walking and biking in Union.

High School Workshop

- A similar introduction will be given by Matt and Sandra addressing the class and explaining the project. We can probably make this a little more technical as the kids should be capable of understanding the process a little more.
- These students will need less guidance, but we would still like to break them into similar size groups.
  - Rather than the group leader being in control of the maps and makers, we should give each student a marker to identify the following:
    - *Where do they live?*
    - *Where do they go?*
    - *How do they get there?*
  - Again, biking and walking routes may not be the same so try and identify each accordingly.
- Facilitate a discussion about bicycle and pedestrian hazards. Some common hazards include:
    - Busy streets that are difficult to cross;

        - No sidewalks available along a street;
        - No bike lanes present along a street;
        - High vehicle speeds near bicyclists and/or pedestrians.
    - These can be both site specific hazards and more general hazards to walking and biking in Union.

- The group leader should try and summarize the feedback from each group of students.

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

November 7, 2013 – Union TSP Update
(Youth Workshops)

TEAM MEMBERS PRESENT: Matt Hughart, Kittelson & Associates, Inc.
Jon Crisafi, Kittelson & Associates, Inc.
Matt Berkow, ALTA Planning + Design
Sandra Patterson, City of Union
Cheryl Jarvis-Smith, ODOT

FROM: Matt Hughart (KAI)

DATE: November 8, 2013

The Youth Workshops were held at Union Elementary and High Schools on November 7, 2013. The purpose of these workshops was to obtain feedback on existing roadway, bicycle, and pedestrian conditions from elementary and high school aged students. These workshops provide younger residents of Union with an opportunity to discuss the different transportation issues they experience and suggest ways to improve them in the future. A general overview of their comments are outlined below.

Union High School

Mrs. Anderes class

Major Themes

- A lot of high school and elementary school kids walk/bike to school on a regular basis.
- For kids living on the northwest side of town, Main Street and Bellwood Street are the main routes to/from school. 5th, 2nd, and 3rd Streets are main routes for kids living on the northeast side of town.
- A popular place to cross Main Street is near Birch Street and near the schools.
- Despite school speed zone signs, many drivers still don't slow down for kids when they attempt to cross Main Street.
- Many intersections on local streets don't have stop signs.
- Union needs another north/south roadway on the east side of town that crosses Catherine Creek.

- There needs to be a multi-use trail that accesses the Eastern Oregon Livestock Show Grounds. Extending this trail south along Catherine Creek and then back to Main Street would create a desirable loop.
- Better traffic control management around the Show Grounds should be implemented to prevent visitors from parking onto private property.
- Bike lanes on Main Street (Making kids ride on Main Street is not safe – it needs to be more bike friendly)
- Add sidewalk to the Cemetery
- Re-open and extend the Honda trails (it would be nice to have a long walking trail; there are not currently good routes from 10th to Main)
- Develop more trails, such as along Catherine Creek (Increase access to the creek)
- X-country team runs on the south end of town where there are no roadway shoulders
- Site distance is an issue near Mike's
- It is hard to see people walking when driving on Bryan
- Most people take back roads when they walk/bike to school
- The park has been subject to vandalism

Union Elementary School

Mrs. Mill's 5th Grade Class

- Many younger kids ride scooters in addition to bicycles.
- Some of the unused building along Main Street could be used to service bicycles
- Fulton Street needs better signage warning drivers that there might be kids playing in the area.
- The Union Cemetery is a popular place to walk and ride bicycles.
- Some of the cross country routes to the south and east of the city would benefit from expanded shoulders along the roadways.
- Potholes were noted as being a major problem with the streets in Union.
- Need more bike racks
- Need to slow people down on Fulton
- Add sidewalks to the golf course
- Complete sidewalks (both sides) south along Main to the city limits
- Add Bike Lanes to Main Street
- Extend the trail on the Creek (they love the existing trail)
- Arch Street needs a sidewalk

- People drive fast on the 5 mile loop
- Kids bike for fun on the local streets
- Little kids bike a lot – need bike lanes

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

TAC MEETING #2
~~Community Open House~~
January29, 2014
Sign-in Sheet

Name JON CRISAFI, KITTELSON
Address -
Email JCRISAFI@KITTELSON.COM

Name MATT HUGHART
Address -
Email -

Name Cheryl Jarvis-Smith, ODOT
Address 3012 Island Ave, La Grande, OR 97850
Email cheryl.jarvis-smith@odot.state.or.us

Name ANDY LINDSEY, ANDERSON PERRY & ASSOC.
Address
Email

Name DENNIS HACKNEY ODOT
Address 3014 ISLAND AVE - LAGRANDE 97850
Email DENNIS.A HACKNEY@ODOT.STATE.OR.US

Name Heidi Klammer
Address 573 N. Dewey St Union, OR. 97883
Email ~~[illegible]~~ hsklammer@yahoo.com

Name JEFF Wise
Address 3012 Island Ave, LA Grande, OR, 97850
Email JEFF.Wise@ODOT.STATE.OR.US

Name
Address
Email

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

January 29, 2014 – Union TSP
(TAC Meeting #2)

TEAM MEMBERS PRESENT:	Matt Hughart, Kittelson & Associates, Inc. (KAI) Jon Crisafi (KAI) Andy Lindsey, Anderson Perry & Associates Cheryl Jarvis Smith, ODOT Dennis Hackney, ODOT Jeff Wise, ODOT Heidi Klummen, Citizen
FROM:	Matt Hughart (KAI) and Jon Crisafi (KAI)
DATE:	April 24, 2014

TAC Meeting #2 was held on January 29, 2014 in Union. The purpose of the meeting was to review the Alternatives Analysis Technical Memorandum and solicit feedback on potential improvement opportunities for consideration in the draft list of bicycle, pedestrian, and transit improvement projects.

Proposed Pedestrian Projects

- Should look for better solutions that don't require widening of bridges:
    - Example: walking/pedestrian bridge parallel to roadway bridge
- Research on traffic engineering that certain crossings are ODOT approved on state routes?
    - To further investigated by ODOT and consultant.
    - CR1 was a crossing location recently applied for but was not approved.
    - Crossing CR2 looks like an acceptable location.
- Sometimes crosswalks have benefits, but there will always be pedestrians who have the mentality that it's safe to cross without observing oncoming traffic as long as they are in the crosswalk.
- Can raised median islands be put on a state highway?

  - Yes, but would require a design exception and would need to consider truck traffic.

- There are crossing concerns at the southern end of town as it is not as developed an the character of that section of Main Street is more conducive to speeding

- Curb extensions could be a potential solution for segments of Main Street

  - Could potentially add to a streetscape and provide further protection

  - Resistance has come from:

    - Plowing concerns

    - Restricting turn maneuvers, particularly for trailers and larger trucks

  - Could be advantageous to provide better intersection sight distance by keeping drivers from parking right at the intersection

Proposed Bike Projects

- Shared lane markings in small towns may not have real value – they mostly become a maintenance issue rather than a benefit. May be viewed as a "solution looking for a problem"

  - Should define "shared lane marking" within report, show an example.

  - Could provide some traffic calming; beneficial to regional bicyclists

- Have noticed an increase in "spandex" bicyclists since the Grande Scenic Route designation.

- Bike lanes – how does the bike lane begin/end and what does the transition to/from bike lane look like?

  - More of a design issue, so during the design that detail might be worked out

  - One solution might transition from bike lanes to shared lane markings

- B1 (South) – extents?

  - Not formally defined, but will define better extents after public feedback

- B3 – Improve bike facility to Cove, no facility specified

  - Mostly directed to help accommodate this Scenic Bike Route

- Any proposal to connect Main to Cove Hwy via Bryan with a bike facility?

  - Difficult because it is such a rural transition.

- The curve around Cove Hwy, there is little recovery area on the outside shoulder – should be addressed.

Proposed STA/UBA Designations

- Met with the city about 10 years ago to discuss potential adoption of these overlays
  - Discussed potential boundaries for these overlays (shown in Figure 3)
  - STA/UBA must correspond with commercial zoning
- Potential additional extents around the commercial zoning in the north (along Bryan)
- Does it give you more options for funding?
  - When ODOT solicits for bike/ped projects, downtown improvements tends to rate higher
- Potential industrial developments could also be considered when detailing these overlays

Cross Sections

- Should look into developing standards for minor/major collector as per existing TSP
- What is the logic behind determining certain widths (e.g. sidewalk widths at 13')
  - Development of sidewalk width "standard" was not found
- Does the segment between Bryan/Arch – represents existing sidewalk widths?
  - Yes – no existing sidewalks are intended to be amended, only redeveloped or new properties
  - ODOT requires a minimum of 6' sidewalk if they were to fund a project
  - Downtowns typically should achieve at least 10' sidewalks to allow for window shopping, pedestrian activity, street furniture, etc.
- Local/Collector
  - Should include space for planter strip
    - Potential for signage, street trees (shade)
  - When public works wanted to develop standards, were looking for a cost-sensitive approach
    - Mostly to avoid curb and gutter
  - Can use traffic separators or just flush walkways
  - 28' feet is generous for local street, 40' is too expensive

Proposed Roadway/Intersection Projects

- R2 – 10th Street; City of Pendleton has constructed roadways outside the UGB, potentially still could achieve the connection
- R3 – serves as a traffic calming measure, and a lot of deer gather there

Proposed Transit

- Should consider catering to the bike route
    - Marketing Union as the center of the bike route where folks can park their cars
- Potential lot on the side of the Community Bank (across from the High School); Baptist Church is difficult to reach without a car; open gravel lot
    - Boulder Market (potential)
    - Forest Service Property
    - Property behind the creamery near Bellwood

Next Steps

- Collect feedback on Technical Memorandum #2 and at Public Open House #1
- Schedule PMT Meeting #3 (to review project list)
- Finalize Technical Memorandum #2
- Develop cost estimates for projects identified
- Develop Freight Stakeholder Packet
- Develop Draft TSP Update

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Community Open House
January29, 2014
Sign-in Sheet

Name Fredrick Smith
Address 1398 N. Cove, Union
Email

Name Hannah Smith
Address 1398 N. Cove, Union
Email

Name Claude D. Morgan
Address 1118 S. 2nd St. Union
Email cdmorgan48@gmail.com

Name Billy & Lynette Allen
Address P.O. Box 484 Union OR 97883
Email tugmcooper@gmail.com

Name Ralph & Debbie Riomondo
Address 1115 S 2nd St Union
Email riomondo@hotmail.com

Name Roy & Carol Box
Address 1360 W. Birch St
Email boxfifthwheelin@aol.com

Name
Address
Email

Name
Address
Email

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

February 19, 2014 – Union TSP
(PMT Meeting #3)

TEAM MEMBERS PRESENT:	Matt Hughart, Kittelson & Associates, Inc. (KAI) Jon Crisafi (KAI) Andy Lindsey, Anderson Perry & Associates Cheryl Jarvis Smith, ODOT Sandra Patterson, City of Union
FROM:	Matt Hughart (KAI) and Jon Crisafi (KAI)
DATE:	February 20, 2014

PMT Meeting #3 was held on February 19, 2014 via conference call. The purpose of the meeting was to review the feedback received from the Alternatives Analysis Technical Memorandum and discuss potential additional modifications to street cross section standards.

Alternatives Analysis Tech Memo

- Consultant team has all of the ODOT's comments and is in the process of address them.
- Still need written City comments on this memo (if any).

Functional Classification Map

- There is a proposal to simplify the functional classification map by not having two separate collector classifications. The City doesn't have standards that differentiate between the two and there is minimal traffic volume variability to suggest multiple striations are necessary.
    - KAI is going to revise the functional classification map to make the "Minor/Major Collector" just "Collector"

Main Street Cross Sections

- The collective set of roadway cross section options were reviewed. Options have been presented that include shared lane markings and bike lanes.
- Main Street is predominately built out. Standards should be created that minimize potential reconstruction of the existing curb/sidewalk sections.
- If parking were to be limited to one side of Main Street between Bryan and Arch, the east side would likely be the least impactful. Aggies and the Hotel currently rely upon on-street parking.

- The existing section between Harrison and south city limits should be revised to indicate there is no sidewalk on the east side of the highway.
- Concerns should be addressed with freight stakeholders regarding "reducing the hole in the air" when it comes to bike lanes and reducing travel lane widths.
- The Arch to Fulton section should include bike lanes. A potential variation would be to reduce the travel lanes to 12' so that the width is more consistent with the other segments.
- The roadway center lane shift across Fulton Street is a current problem. This shift could be minimized with Option #5.
- The Harrison to south city limits section currently does not have sidewalks on the east side of the roadway. As such, adopting a standard that would allow for 12' travel lanes and 6' sidewalks would be easier to implement.
- Striped shoulders would be less valuable that full signed/striped bike lanes on the Harrison to south city limits section.
- Cheryl will forward these drawings to various ODOT staff for further consideration.

City Street Standards

- A separate local street and collector standard should be developed.
- Union needs street standards that keep the area looking like Union. Curb and gutter and costly to implement.
- A potential Collector standard likely looks more like the Collector Street with Sidepath Option. Don't need the additional 8' of paved on-street parking area.
- The City would like to see more detail regarding the Local Street (Narrow Option). KAI will create a version that shows what this looks like in a plan view.
- An alley standard should be developed.
- Maintaining the mountable concrete strip conveys more of a pedestrian-friendly zone
- ALTA is working on a Trail cross section

Next Steps

- Finalize TM#2. Need cross section feedback ASAP.
- Development of draft TSP and code work will commence shortly.
- Schedule next visit (PC/CC Worksession to review first cut at TSP/Code work – aim for week of April 14th (allows for 2 weeks to address comments)
- Draft of TSP due for review DLCD 35-day review will be May 2nd.
- Will strive to schedule the joint PC/CC adoption hearing in early June. Sandra will work to find an appropriate day.

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

MEETING SUMMARY

April 8, 2014 – Union TSP
(PMT Meeting #4 via conference call)

TEAM MEMBERS PRESENT:	Matt Hughart, Kittelson & Associates, Inc. (KAI) Jon Crisafi (KAI) Cheryl Jarvis Smith, ODOT Sandra Patterson, City of Union Scot Siegel, Siegel Planning Stacey Goldstein, Siegel Planning
FROM:	Matt Hughart (KAI)
DATE:	April 24, 2014

PMT Meeting #4 was held on April 8, 2014 via conference call. The purpose of the meeting was to review the Draft TSP project prioritization and funding memo and Draft TSP Implementation and Analysis Memo.

Draft TSP Project Prioritization and Funding Memo

- Main Street curb extensions need to be added to the pedestrian project list.
- Main Street striping costs are reflective of the entire signing and striping costs associated with Figure 4 (Projects B1 and B2). They do not include enhanced crossing infrastructure.
- Enhanced crossing projects have been incorporated into the appropriate pedestrian or bicycle projects. CR7 is part of project T8.
- The Cove Highway shoulder bikeway description should be expanded to include coordination with ODOT and Union County for potential long-term expansion and extension of the shoulder bikeway. Comment boxes identifying the need for coordination will also be added to the maps.
- Move portions of the Catherine Creek trail into the near-term time frame.
- Expand Transit section to include more policy direction such as:
    - Incorporation of partnership enhancement language between ODOT, County, and transit providers.
    - Community Connections
    - Incorporation of transit opportunities to enhance/support economic development

- Reaffirmation of the City's commitment to transit and the incorporation of future amenities, park and ride, etc.

Draft TSP Implementation and Analysis Memo

- Suggested Comprehensive Plan edits:
  - Simply things by removing a lot of the facts and unnecessary information.
  - Add policies to better address TPR requirements and implement the elements of the TSP update.
    - Project team will work to add transit related policies that focus on the City's overall support of transit, a desire to support citizens who don't drive or have access to an automobile, and ensure future regional connections.
  - Add a policy that addresses a need for new trail connections to/from the Eastern Oregon Livestock Grounds.
- Suggested Development Code Amendments
  - A two-page outline of suggested Development Code edits has been provided to summarize where changes and edits are being made. The City suggested that this summary be expanded a bit to include some narrative that explains why the changes are necessary and how they will help the City of Union.
  - A first cut of the actual Development Code has been provided. The City will work with the project team to review these edits and help determine where things can be scaled back (if any). The access management section was noted as one potential section that could potentially be revisited.

Next Steps

- A revised TSP content memo will be redistributed to the City no later than April 11th for distribution to the PC and CC members.
- City will review Development Code edits and provide comments to Siegel Planning on or before April 11th. The suggested edits will be incorporated (to the extent possible within the time available) and a revised version will be redistributed to the City no later than April 15th.
- April 16th is the PC/CC Work Session to review the draft contents of the TSP Update. KAI (Matt) will be in attendance to lead this discussion.
- April 17th is the PC/CC Work Session to review the draft Comprehensive Plan and Development Code edits. Stacey Goldstein will lead the presentation and discussion.
- A final working draft will need to be submitted to DLCD no later than May 2nd in order to keep the scheduled joint PC/CC hearing on June 9th.

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Community Open House
April 16, 2014
Comment Form

Name DAN FIORITO
Address POB 1083 UNION, OR / 341 N 10TH
Email DFIORITO@charter.net

T-6 IN MY OPINION IS UNNECESSARY AND WOULD BE UNWORKABLE

THERE IS NO ROOM ON MY PROPERTY FOR A MULTI USE TRAIL MY HOME IS 30 FT FROM THE CREEK BANK THE CREEK BANK IS UNSTABLE

I AM OPPOSED TO ANY PUBLIC USE OF MY PROPERTY

BUILDING SIDEWALKS IS A GOOD IDEA BUT CURRENTLY OUR PAVED ROADS ARE IN A STATE OF DISREPAIR AND MANY STREETS IN UNION ARE GRAVEL

WORK ON EXISTING ROADS AND GET THE GRAVEL ROADS PAVED FIRST THEN GO FOR THE BIKE LANES - SIDEWALKS ETC

OVER

CITY OF UNION
TRANSPORTATION SYSTEM PLAN UPDATE

Community Open House
April 16, 2014
Comment Form

Name JIM BAUER
Address 343 N. 10th Street
Email JIMBAUER@ROCKETMAIL.COM

I would personally like to see $ spent on sidewalk projects long before bike trails. At this time cars/bikes/pedestrians all share the streets. With sidewalks + lighting we could live with bikes + cars sharing the streets.

Personally - sidewalks ~~are~~ should be the priority of the city - not special interest multi use trails.
Let the city do the basics 1st.

Instead of trail going West on the creek why not utilize the old railroad right of way on Arch st instead ???

Section 5
Policy and Code Amendments

CITY OF UNION
ORDINANCE NO. 536

AN ORDINANCE ADOPTING AMENDMENTS TO THE TRANSPORTATION SYSTEM PLAN AND INCORPORATING RELEVANT POLICIES, MAPS, AND STANDARDS INTO THE COMPREHENSIVE PLAN AND DEVELOPMENT CODE

WHEREAS, the City of Union Transportation System Plan (TSP), last updated in 1998, does not address the City's current transportation planning needs; and

WHEREAS,, the City received a grant from the State of Oregon Transportation and Growth Management Program to update its Transportation System Plan and implementing regulations in conformance with the State Transportation Planning Rule (OAR 660, Division 12); and

WHEREAS, the City solicited public input in and participation developing and reviewing the Transportation System Plan, including the proposed Comprehensive Plan and Development Code amendments, through a series of public open house meetings and work sessions hosted by the City's Planning Commission and City Council; and

WHEREAS, the Planning Commission and City Council conducted joint work sessions on the proposed Transportation System Plan and amendments to the Comprehensive Plan and Development Code during April 2014; and

WHEREAS, the State Department of Land Conservation and Development was duly notified of the proposed amendments on May 1, 2014, at least 35 days before the first evidentiary hearing on the Transportation System Plan, and did not object to said amendments;

WHEREAS, notice to each property owner within the City Limits and Urban Growth Boundary was mailed on May 1, 2014, at least 20 days, and not more than 40 days, in advance of the first public hearing to consider adoption of said amendments; and

WHEREAS, notice to the public was advertised in a newspaper of general circulation on May 1, 2014 in the city newsletter and again May 16, 2014 in the Observer, at least 20 days in advance of the first public hearing on said amendments; and

WHEREAS, the Planning Commission held a duly noticed public hearing on the proposed Transportation System Plan and amendments to the Comprehensive Plan and Development Code on June 5, 2014, and the recommended adoption of said amendments; and

WHEREAS, the City Council conducted a public hearing on said amendments on June 5, 2014, [received public testimony], deliberated and made a decision to adopt said amendments based on the public health, safety and welfare; and

WHEREAS, the City Council found that said amendments conform to applicable State Land Use Planning Goals, particularly Goal 1 – Citizen Involvement, Goal 2 – Land Use Planning, Goal 8 – Recreational Needs, and Goal 12 – Transportation;

NOW THEREFORE, BE IT ORDAINED by the City of Union, Oregon:

Section 1:
Transportation System Plan Adoption: The 1998 City of Union Transportation System Plan, Ordinance No. 462, is hereby repealed and replaced by Ordinance No. 536 adopting the 2014 City of Union Transportation System Plan, contained in Exhibit A attached hereto, and by this reference, made a part hereof.

Section 2:
Comprehensive Plan Text Amendments: The Transportation Element of the City of Union Comprehensive Plan is hereby amended with the text in Exhibit B attached hereto, and by this reference, made a part hereof.

Section 3:
Development Code Amendments: The City of Union Development Code and associated land use regulations are hereby amended as provided on Exhibit C attached hereto, and by this reference, made a part hereof.

READ for the first time in full this 5th day of June, 2014.

READ for the second time by title only this 26th day of June, 2014 upon the unanimous vote of the members present, after the text of the Ordinance was offered to the members of the Council and the press and public for their use during the meeting.

PASSED AND ADOPTED by the City Council of the City of Union, Oregon, and signed by the Mayor of the City of Union, Oregon, this 26th day of June, 2014.

William C. Lindsley, Mayor

ATTEST:
Sandra Patterson, City Administrator/Recorder

Chapter 12: Goal 12:

TRANSPORTATION

***Goal*:** To provide and encourage a safe, convenient and economic transportation system.

~~**BACKGROUND:**~~

MODES OF TRANSPORTATION IN UNION:

- REGIONAL MASS TRANSIT~~: Union's small population and remoteness to large populations makes mass transit impractical. La Grande is the nearest point to board interstate buses or charter air transportation. Community Connections also have bus service available to the County, by appointment.~~

- AIR TRANSPORTATION~~: Charter air service is available at the La Grande Municipal Airport, though no daily passenger service is provided.~~

- WATER TRANSPORTATION~~: There are no navigable rivers for water transportation in Union.~~

- PIPELINES~~: No heavy pipelines pass through the planning area.~~

- RAILROAD~~: Service is available by the Union Railroad of Oregon to the Union-Pacific lines at Union Junction.~~

- ROADS:
  A. State Highways: Highway 203 connects Union with La Grande to the west and Medical Springs via Catherine Creek to the east. Highway 237 travels to Cove on the north and North Powder to the south.

  ~~County Roads (minor collectors):~~
  ~~12 Foothill/Hot Lake/Union~~
  ~~66/66A Union/High Valley/Cove~~
  ~~31 Godley Lane~~
  ~~67 Weaver Lane/Union~~
  ~~69 Ramo Flat~~
  ~~109 Miller Lane~~

  B. Collector Roadways

  C. Local Streets: All remaining streets not listed in A and B are classified as local streets.

~~In 1975 the conditions of the streets in the smaller communities of Union and Wallowa Counties were inventoried by visual survey. Streets were categorized as paved, graveled or unimproved.~~

Unimproved streets included those dedicated but not open for travel. Sidewalks and curbs were classified either as improved or unimproved.

Union was the largest city (in the two-county study area) in terms of population area, and miles of streets of the 23.4 miles of streets in Union. 9.9 miles (42%) were paved, 11.2 miles (48%) are graveled and 2.3 (10%) are unimproved. The percentage of graveled and unimproved streets is about average for the two-county study area.

Union has constructed 2.6 miles of sidewalks or 16% of the total possible 16.9 miles. While only two cities have more miles of sidewalks, for cities has a higher percentage of completion. A similar pattern occurs with curbs. The low completion rates for sidewalks and curbs in Union may in part be related to the very expansive City limits. This results in the inclusion within the City's lengthy segments of County roads and some routes impractical for sidewalks and curbs.

- BICYCLES AND PEDESTRIANS: No bicycle or pedestrian routes such as, presently exist in Union. The City if required to expend at least one percent of the funds received from the State Highway Fund for the establishment of bicycle trails and footpaths.

2. INVENTORY OF LOCAL, REGIONAL AND STATE TRANSPORTATION NEEDS: The City Planning Commission has listed the more important needs for transportation planning and improvement. These include the need for an alternate improved truck route to the industrial area at the west of the City, both for business convenience and safety reasons; and a general indication of suitable routes for access into undeveloped portions of the Urban Growth Area. The City needs to formalize and adopt this transportation plan.

3. Social consequences resulting from utilization of differing combinations of transportation modes does not apply to the City of Union. The rural nature of the City restricts transportation to highways. Diversification of other modes of transportation is not economically feasible at this time.

4. AVOID PRINCIPAL RELIANCE UPON ONE MODE OF TRANSPORTATION: Given the restrictions mentioned in #3 above, the City's primary response to this item will be in the selection of a project to encourage safe and convenient use of bicycles and pedestrian routes.

5. MINIMIZE ADVERSE SOCIAL, ECONIMIC AND ENVIRONMENTAL IMPACTS AND COSTS: Union is encouraging infill that utilizes existing transportation networks, thereby limiting new street development and minimizing maintenance, increasing safety, and reducing environmental hazards.

6. CONSERVE ENERGY--Limiting the Urban Growth Area encourages a more compact street system, thereby promoting energy savings. New development will be encouraged to locate along existing
streets.

~~7. MEET THE NEEDS OF THE TRANSPORTATION DISADVANTAGES BY IMPROVING TRANSPORTATION SERVICES--The primary means presently for providing service to the transportation-disadvantaged in Union is through the Union County Senior Citizen's community bus, with which the City cooperates as possible.~~

~~8. FACILITATE THE FLOW OF GOODS AND SERVICES SO AS TO STRENGTHEN THE LOCAL AND REGIONAL ECONOMY--Commercial and industrial classified lands have been identified adjacent to existing major transportation corridors.~~

~~9. [Moved to #6, Polices, and amended by Ord. 463, 8/10/98, eff. 9/10/98]~~

Policies:

1. Union will continue to support the development of all types of economical transportation for local citizens.

2. A priority list will guide <u>all modes</u> of ~~road~~ improvements and developments.

3. The function of existing and planned roadways as identified in the adopted Transportation System Plan shall be protected through the application of appropriate access control measures. The function of existing or planned roadways or roadway corridors shall be protected through the application of appropriate land use regulations; for example, new development in the urbanizable area shall conform to the Local Street Plan.-The potential to establish or maintain access ways, paths, or trails shall be considered prior to the vacation of any public easement or right-of-way. Road or street rights-of-way will not generally be vacated but will be considered for other possible public uses. Right-of-way for planned transportation facilities shall be preserved through all practical means. This will include exactions, voluntary dedication setbacks, or other appropriate means. [Appears as amended by Ord. 463, 8/10/98, eff. 9/10/98]

4. Roads created in subdividing or land parceling will be designed to tie into existing and anticipated road systems.

5. The cost for street improvements for land being converted to urban uses will be borne by the developer and constructed to city standards.

6. CONFORM WITH LOCAL AND REGIONAL COMPREHENSIVE LAND USE PLANS – Street planning decisions will be in accord with the area Land Use Plan, Zoning Maps, and the Union Transportation System Plan (TSP). The Future Roadway Network Plan within the Transportation System Plan identifies conceptual connections for future streets. Final street alignments will be refined through the development review process. The Union Land Use Plan and Transportation System Plan have been prepared in cooperation with Union County. [Formerly #9, Background. Appears as amended by Ord. 463, 8/10/98, eff. 9/10/98]

7. A list of allowed, conditionally allowed, and permitted transportation system improvements will be detailed in the Zoning Ordinance to implement the TSP. [Added by Ord. 463, 8/10/98, eff. 9/10/98]

8. Land use proposals shall be reviewed with criteria that minimize adverse impacts of development on ~~which have an adverse effect on~~ transportation safety or mobility ~~on transportation facilities~~. [Added by Ord. 463, 8/11/98, eff. 9/10/98]

9. The City will cooperate and notify all appropriate local, state and federal agencies and transportation interest groups when a land use application is submitted and whether the application potentially impacts a transportation facility. Transportation interest groups' must request in writing and may be subject to a fee. Notification will help to identify agency standards, and provide an efficient and economical transportation system. [Policy added by Ord. 463, 8/10/98, eff. 9/10/98. Replaced #5, Recommendations.]

10. It is the policy of the city to develop an interconnected network of streets, access ways, and other improvements, including bikeways, sidewalks, and safe· street crossings to promote safe and convenient bicycle and pedestrian circulation within the community. [Added by Ord. 463, 8/10/98, eff. 9/10/98]

11. All transportation facilities will conform with the Transportation System Plan street standards [Added by *Ord.* 463, *8/10/98,* eff. *9/10/98]*

~~4~~ 12. AVOID PRINCIPAL RELIANCE UPON ONE MODE OF TRANSPORTATION: ~~Given the restrictions mentioned in #3 above~~, The City's primary response to this item will be in the selection of a project to encourage safe and convenient use of bicycles and pedestrian routes.

~~5~~ 13. MINIMIZE ADVERSE SOCIAL, ECONIMIC AND ENVIRONMENTAL IMPACTS AND COSTS: Union is encouraging infill that utilizes existing transportation networks, thereby limiting new street development and minimizing maintenance, increasing safety, and reducing environmental hazards.

~~6~~ 14. CONSERVE ENERGY--Limiting the Urban Growth Area encourages a more compact street system, thereby promoting energy savings. New development will be encouraged to locate along existing
streets.

~~7~~ 15. MEET THE NEEDS OF THE TRANSPORTATION DISADVANTAGES BY IMPROVING TRANSPORTATION SERVICES--The primary means presently for providing service to the transportation-disadvantaged in Union is through the Union County Senior Citizen's community bus, with which the City cooperates as possible.

~~8~~ 16. FACILITATE THE FLOW OF GOODS AND SERVICES SO AS TO STRENGTHEN THE LOCAL AND REGIONAL ECONOMY--Commercial and industrial classified lands have been identified adjacent to existing major transportation corridors.

Action Items: ~~**Recommendations**~~

1. That the City follows the adopted Transportation System Plan to guide the location and construction of streets in unplatted lands.

2. That the Transportation System Plan and the Capital Improvement Program be used to coordinate the prioritize transportation improvements and developments.

3. That Union supports programs to improve transportation conditions for the disadvantaged.

4. That the City investigate and support commuting alternatives such as organized carpooling, etc. *[Added by ord. 463, 8/10/98, eff. 9/10/98]*

5. That the City improve the cohesiveness and pedestrian-friendliness of historic Main Street.

6. That the City create a local street plan and accompanying trail connections.

7. That the City continue to improve the bicycle and pedestrian connectivity between Main Street and surrounding neighborhoods, schools and nearby cultural/natural resources.

8. That the City initiate a Main Street Vision process to engage the community in a participatory planning process.

III. DEVELOPMENT CODE AMENDMENTS TO IMPLEMENT THE CITY OF UNION TSP UPDATE

Draft Updates to Commercial and Industrial Land Uses

***Note to reader**: The following section updates to the list of uses in Commercial and Industrial zones. Existing code is shown as regular typeface, and amendments are indicated by ~~strikeout~~ (deleted) and underlined (added) text. The comment boxes contain background and explanation of the changes.*

GENERAL COMMERCIAL (C-1) ZONE

***Note to reader:** The General Commercial (C-1) zone contains a development pattern of a traditional Main Street. Buildings are spaced closer together and located adjacent to the street, sidewalks are provided adjacent to the highway and building, and residential, commercial, and public/institutional land uses are located in close proximity to one another, providing for an easily walkable (compact) mixed use environment where people naturally want to gather. The C-1 zone contains highway frontage that is proposed as Special Transportation Area (STA). STAs look like traditional "Main Streets" and should provide access to accommodate pedestrian, bicycle and transit movement. It is recommended that libraries, government buildings, and schools be permitted outright, rather than requiring conditional use approval, as they are found in traditional main street environments. Uses that may conflict with a pedestrian friendly environment should not be allowed, or where allowed they should be subject to conditional use approval. (No change is proposed to the list of prohibited uses.) In the C-1 zone, multifamily housing should be allowed in upper stories of commercial buildings, or setback from Main Street behind commercial storefronts. Multifamily housing should not be listed as a conditional use because State statute (ORS 197.307) requires that cities adopt clear and objective standards for housing and conditional use criteria are discretionary (not objective).*

3.110 Uses permitted outright in a GENERAL COMMERCIAL (C-1) zone.

General walk-in commercial, public and institutional uses and operations that are predominately retail or service establishments dealing with ultimate consumers. Multi-family housing is ~~also~~ permitted in upper stories of commercial buildings and setback from Main Street behind commercial storefronts. Transportation facilities are also permitted.

3.112 Conditional uses permitted.

1) Churches

2) Church parsonages

3) Community clubs

~~4) Government structures and land uses~~

5) Convalescent homes

6) Clinics

~~7) Libraries~~

~~8) Museums~~

~~9) Public parks~~

10) Public utility structures and lines

11) Radio and television transmitters and lines

12) Railroad rights-of-way

~~13) Schools~~

14) Light industrial operations

15) Passenger terminals

16) One and two family dwellings

~~17) Multi-family dwellings~~

18) Overnight recreational vehicle accommodations in conjunction with hotel/motel operations.

3.114 <u>Prohibited Uses.</u>

1) Wrecking yard

2) Travel trailer park

3) Mobile home park

4) Wholesale establishments and warehouses

5) Heavy industrial use

6) Building and related contractor uses

7) Excavating contractor use

8) Heavy retail sales such as but not limited to:

a) Automotive sales

b) Tire sales & services

c) Trailer sales & services

d) Pleasure craft sales & rental

9) Drive-in theaters

10) Race tracks

11) Drive-in/Drive-through uses

HEAVY COMMERCIAL (C-2) ZONE

Note to reader: *The Heavy Commercial (C-2) zone generally allows the same uses as the General Commercial (C-1) zone. The C-2 zone is a proposed Urban Business Area (UBA) with the goal of ensuring vehicular accessibility to businesses. The main difference between what is proposed for C-1 and C-2 is the development and design standards that should apply to each zone. The C-1 zone has the desired form of a traditional "Main Street" and special architectural design standards apply. By comparison, architectural design standards are not proposed for properties in the Heavy Commercial (C-2) zone, where buildings are setback further from the street and there may be more automobile-oriented land uses. Recommended development standards are provided below.*

3.210 Uses permitted outright in a HEAVY COMMERCIAL (C-2) zone.

General walk-in commercial, public and institutional uses and operations that are predominately retail or service establishments dealing with ultimate consumers. Multi-family housing and transportation facilities are also permitted. ~~All general commercial uses.~~

3.212 Conditional uses.

1) Churches

2) Church parsonages

3) Convalescent homes

4) Clinics

~~5) Schools~~

6) Light industrial uses

7) Public structures and land uses

~~8) Wrecking yards~~

9) Mobile home parks

10) Travel trailer parks

11) Large wholesale establishments and warehouses

12) Public utility structures and lines

13) One and two family dwellings

~~14) Multi-family dwellings~~

3.213 Prohibited uses.

Any use declared a nuisance by statute, by action of the City Council, or by a court of competent jurisdiction is prohibited in the C-2 zone.

COMMERCIAL AMUSEMENT (C-3) ZONE

Note to reader: *The only recommended change to the Commercial Amusement (C-3) zone is to list transportation facilities as a permitted use. This zone appears to be tailored for specific amusement uses.*

3.310 Uses Permitted Outright in a COMMERCIAL AMUSEMENT (C-3) zone.

All public or private non-profit amusement, cultural or recreational uses. Transportation facilities are also permitted.

INDUSTRIAL (I) ZONE

Note to reader: *The only recommended change to the Industrial (I) zone is to list transportation facilities as a permitted use.*

3.410 Uses permitted outright in an INDUSTRIAL (I) zone.

1) All industrial uses except as indicated in Section 3.412 and 3.414

2) Commercial uses associated with manufacturing, processing, or storage of materials

3) Large wholesale establishments and warehouses

4) Farm use

5) Transportation facilities

Section 4: Exceptions and Variances

***

4.092 Variance procedure. The procedure to be followed in applying for and acting on a variance request shall be the same as those provided in Section 5 of this ordinance, except that notice of hearing need only be mailed to owners of property abutting or directly across a street from the lot or parcel of land on which the variance is requested and to affected public agencies.

Section 5: Conditional Uses

***

5.030 Notice of hearing on conditional uses. Before a conditional use or modification of an existing conditional use is allowed, it shall be considered at a public hearing conducted by the Planning Commission. The public hearing shall be held within 40 days after the application is filed. The Planning Commission shall cause notice to be given as follows

1) By posting a notice of the public hearing in three locations within the City for 15 days preceding the hearing.

2) By sending a copy of the notice to all land owners within 300 feet of the parcel in question and to affected public agencies no less than 15 days prior to the date of the hearing.

Section 7: Administrative Provisions

7.100 Notice. Notice shall be provided consistent with requirements of this Ordinance. Notice shall also be sent to all affected public agencies.

Draft Community Design Standards – Introduction

***Note to reader**: The following amendments to the development standards of Ordinance 337, Development Regulations, are recommend to implement the TSP and create a built environment supportive of Main Street.*

The project objectives listed on page 1, and the Union TSP Update Technical Memorandum #2 prepared by Kittleson and Associates, guided the development of the proposed code amendments. The 2012 Oregon Model Code was also used to develop proposed language.

The Technical Memorandum identifies a Special Transportation Area (STA) and Urban Business Area (UBA) along Main Street. STAs look like traditional "Main Streets" with development generally located near the back of the sidewalk on both sides of the state highway. The primary objective of an STA is to provide access and circulation amongst community activities, businesses and residences and to accommodate pedestrian, bicycle and transit movement along the highway.

UBAs are special overlay designations that can be applied to highways where existing commercial development exists and it has been determined that vehicular circulation and accessibility are important to ensure continued redevelopment and reinvestment.

The draft TSP proposes both STA and UBA designations. New code language addresses commercial uses in both areas. The STA (Figure 32 Proposed Functional Classification Plan) in the Union TSP Update Technical Memorandum #2) is shown along the following areas:

- *La Grande-Baker Highway (Main Street) from Birch Street to Beakman Street (M.P. 16.28 to 16.51)*
- *Beakman Street to Fulton Street (M.P 16.51-16.71)*
- *Medical Spring Highway E. Beakman Street (M.P 0.00-0.10)*
- *La Grande-Baker Highway (Main Street)*
  From Birch Street to Beakman Street (M.P. 16.28 – 16.51)
- *La Grande-Baker Highway (Main Street)*
  From Beakman Street to Fulton Street (M.P. 16.51-16.71)
- *Medical Springs Highway (E. Beakman Street)*
  From Main Street to Bellwood Street (M.P. 0.00 – 0.10)

The proposed code amendments, which will be incorporated in a new Section 9, entitled Community Design Standards, are divided into the following subsections:

- *Site Design Standards. These standards apply to all new non-residential development and redevelopment requiring a building permit, and changes of use that increase the intensity of a use on a site, requiring additional access or more parking. Site design standards address site/lot layout, building orientation, pedestrian and vehicular access and circulation, parking and loading, landscaping, and transportation public facilities standards. The standards do not apply*

to buildings with a historic designation. Historic buildings are required to follow Ordinance 526, which provides historic review standards and guidelines.

- *Industrial Zone Design Standards. These are a more limited set of standards that apply only to industrial zones.*

- *Site Design Review Procedures. These procedures provide for the review of site development plans where projects are subject to the application of design criteria and standards. Currently Union does not have a process to implement the design standards that will result from the TSP and Main Street code changes. The Planning Commission is typically the review body for site design reviews in communities the size of Union. The procedures staff and the Planning Commission will follow are outlined below.*

SECTION 9. COMMUNITY DESIGN STANDARDS

Note to reader: *The draft design standards are intended to create and maintain a built environment conducive to walking, reduce dependency on the automobile for short trips, address building orientation and protecting small town character. The design standards address basic site planning, including building placement and facilities for vehicles and pedestrians, consistent with Union's historic Main Street.*

9.000 Purpose.

The design standards are intended to maintain a pedestrian-friendly Main Street that provides for efficient transportation, including automobile, bicycle and pedestrian access and circulation, with connectivity between Main Street and surrounding areas. Where automobile-oriented land uses are allowed, design standards promote an attractive built-environment that is safe for pedestrians and consistent with Union's historic Main Street.

9.010 Applicability.

Note to reader: *The following describes how the design standards are to be applied.*

The regulations of this section apply only to new development and alterations to existing development that require a building permit. The City of Union Planning Official shall determine which provisions of Section 9 apply to a particular project based on the scope of the project proposal as presented by the applicant during pre-application meeting with the City, or as described on the application form(s) required for land use or other permit approvals. Property owners and applicants are advised to contact the City of Union prior to applying for permits.

9.020 Building orientation. Buildings located in Figure X (STA area) shall be oriented such that new buildings and their primary entrances are close to abutting streets so that pedestrians have a direct and convenient route from the street sidewalk to the building entrance. Off street parking or vehicular circulation shall not be placed between buildings and streets.

9.040 Drive-Up/Drive-In/Drive-Through Uses and Facilities.

Where new drive-up or drive-through uses and facilities are permitted, they shall orient to an alley, driveway or interior parking area, and not be placed between a building's primary entrance and the street. Drive-up/in queuing areas shall be designed so that vehicles do not obstruct a driveway, fire access lane, walkway, or public right-of-way.

9.050 Industrial Zone Design Standards.

New developments and major remodels in the Industrial zone shall comply with the following standards, which are intended to orient industrial uses on the site to safely accommodate automobiles and pedestrians, and to provide compatibility with adjacent uses by minimizing adverse impacts of noise, glare, smoke, dust, exhaust, and vibration on adjacent uses, to the

extent practicable. In addition to other applicable provisions of Section 9, development in the Industrial zone shall meet the following standards:

1. Pedestrian Access. The approval body may require the construction of pedestrian access ways through required buffers to ensure pedestrian connections within large developments, between multiple development phases, or connecting to other streets or sidewalks.

2. Mechanical equipment, lights, emissions, shipping/receiving areas, and other components of an industrial use that are outside enclosed buildings, shall be located away from residential areas, schools, parks and other non-industrial areas to the maximum extent practicable.

3. Buffering. A minimum of ten (10) percent of the overall site shall be landscaped with a mix of trees, shrubs and groundcover. The approval body may require additional landscaping, fences, walls or other buffering when it finds through Site Design Review or Conditional Use Permit review as applicable, that more or different buffering is necessary to mitigate adverse noise, light, glare, and/or aesthetic impacts to adjacent properties.

9.055 Vehicular Access and Circulation.

Note to reader: *The following concepts implement the TPR (OAR 660-012-045), to protect transportation facilities and their functions. Currently the zoning code does not provide such regulations. The concepts also ensure safe and convenient vehicular circulation in new developments, while maintaining traffic operations.*

1. **Intent and Purpose.** This Section implements the transportation policies of the City of Union Transportation System Plan. It is intended to manage access to land uses and on-site circulation, and to preserve the transportation system in terms of safety, capacity, and function.

2. **Applicability.** This Section applies to all public streets within the City and to all properties that abut these streets. The standards apply when lots are created, consolidated, or modified through a land division, partition, lot line adjustment, lot consolidation, or street vacation; and when properties are subject to Land Use Review or Site Design Review.

3. **Access Permit Required.** Access to a public street (e.g., a new curb cut or driveway approach) requires approval of the roadway authority. Such approval may be granted in the form of a letter to the property owner (i.e., permit), or it may be granted as part of a land use decision notice as a condition of approval.

4. **Traffic Study Requirements.** The City may require a traffic study prepared by a qualified professional to determine access, circulation, and other transportation facility needs. The City shall consult the roadway authority in determining traffic study needs for projects affecting state and county facilities.

5. **Conditions of Approval.** The roadway authority may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street and highway system.

6. **Access Spacing.** Driveway accesses shall be separated from other driveways and street intersections in accordance with the following standards:

   a. State Highways. Access to state highways shall be subject to the applicable standards and policies contained in the Oregon Highway Plan and OAR 734-051 (Division 51).

   b. Collector Streets. A minimum of 100 feet separation between private driveways (as measured from centerlines of the driveways) is required on collector streets, except that driveways may be consolidated and adjoin each other for more than one dwelling and meet this standard.

   c. Special Provisions for All Streets. Direct street access may be restricted for some land uses in order to maintain the safety and function of adjacent roadways. For example, the roadway authority may require access consolidation, shared access, and/or access separation greater than that specified by this Section pursuant to applicable standards. Where no other reasonable access is available, the roadway authority may grant access. In such cases, access spacing from adjacent intersections shall be maximized and directional connections (i.e., right in/out, right in only, or right out only) may be required.

TABLE 9.055 - City of Union Access Spacing Standards		
Functional Classification	Public Street Intersection	Driveway Approach
Arterial	See Oregon Highway Plan and OAR 734-051.	See Oregon Highway Plan and OAR 734-051.
Collector	250 feet	100 feet
Local Street	200-400 feet	Access to each lot

7. **Number of Access Points.** For single-family (detached and attached), two-family, and three-family housing types, one street access point is permitted per lot, when alley access cannot otherwise be provided; except that two access points may be permitted on corner lots, or for circular driveways, subject to the above access spacing standards. The number of street access points for multiple family, commercial, industrial, and park & open space developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s). Shared access may be required in order to maintain the required access spacing and minimize the number of access points.

8. **Joint and Cross Access Requirement.** When necessary for traffic safety and access management purposes, the roadway authority may require joint access and/or shared driveways where access onto an arterial street is limited, or for multi-tenant developments, and developments on multiple lots or parcels that rely upon the same access drive or which

share parking. Where joint access or a shared driveway is provided, it shall comply with the applicable roadway authority's access management classification system and standards; accommodate specific types of service vehicles, loading vehicles, or emergency service provider vehicles; and contain driveway stubs to property lines (for future extension) and other design features to make it obvious that the abutting properties may be required with future development to connect to the cross-access driveway. Pursuant to this Section, where joint or cross access is required, the property owners shall:

a. Record an easement with the deed allowing cross-access to and from other properties served by the joint-use driveways and cross-access or service drive;

b. Record an agreement with the deed that remaining access rights along the roadway for the subject property shall be dedicated to the City and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;

c. Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners.

9. **Access Connections and Driveway Design.** All driveway connections to a public right-of-way (access) and driveways shall be provided consistent with Union's Public Works Standards.

10. **Fire Access and Turnarounds.** When required by applicable Fire Codes, fire access lanes with turnarounds shall be provided consistent with Union's Public Works Standards.

11. **Vertical Clearances.** Driveways, private streets, aisles, turn-around areas and ramps shall be provided consistent with Union's Public Works Standards.

12. **Access Limitations and Exceptions to Standards.**

a. The City may impose turning restrictions (i.e., right in/out, right in only, or right out only) for safety and to maintain adequate traffic operations where a driveway opens onto a collector or arterial street.

b. Access to and from off-street parking areas shall not permit backing onto a public street, except for single-family and two-family dwellings.

c. The City may reduce required separation distance of access points where they prove impractical due to lot dimensions, existing development, other physical features, or conflicting code requirements, provided all of the following requirements are met:

(1) Joint-use driveways and cross-access easements are provided;

(2) The site plan incorporates a unified access and circulation system in accordance with this Section; and

(3) The property owner(s) enter in a written agreement with the City, recorded with the deed, that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint-use driveway.

13. **Site Circulation.** New developments shall be required to provide a circulation system for vehicles and pedestrians that accommodates expected traffic on the site, provides connections through large sites, and connects the development to adjacent sidewalks.

14. **Driveway Construction.** The following development and maintenance standards shall apply to all driveways and private streets:

a. Driveway Approaches. Driveway and access road connections to public ways shall conform to the City of Union's Public Works Standards, including the provision of driveway approach aprons.

b. Surface Options. Driveways, parking areas, aisles, and turnarounds be provided consistent with Union's Public Works Standards.

c. Surface Water Management. All driveways, parking areas, aisles, and turnarounds shall have on-site collection of surface waters consistent with Union's Public Works Standards.

9.056 Pedestrian Access and Circulation

Note to reader: *The following concepts implement the TPR requirements related to pedestrian access and safety within developments and are not applicable to the public sidewalk system.*

Site Layout and Design. To provide safe, direct, and convenient pedestrian circulation, all developments, except single-family and two-family dwellings, shall provide a continuous pedestrian system within the development site that connects primary building entrances on a site to one and other, and to the public right-of-way, regardless of whether a public sidewalk currently exists.

9.057 Bicycle Parking Requirements

Note to reader: *The TPR requires cities have code provisions for bicycle parking. This section will be placed after Section 4.060, Off Street parking requirements in Ordinance No. 337.*

All development, except single family and two-family dwellings shall provide bicycle parking in conformance with the following standards.

1. **Minimum Required Bicycle Parking Spaces.** Uses shall provide bicycle parking spaces, as designated in Table 9.110.

Table 9.110
Minimum Required Bicycle Parking Spaces

Use	Specific Uses	Required # of Spaces
Residential Categories		
Household Living	Multifamily	2, or 1 per 20 units, whichever is greater
Commercial Categories		
Retail Sales And Service		1 per primary use or 1 per 20 vehicle spaces, whichever is greater
Office		2 per building or 1 per 20 vehicle spaces, whichever is greater
Industrial Uses		1 per 20 vehicle spaces
Institutional Categories		
Community Service		2, or as required by City
Parks (active recreation areas only)		8, or as required by City
Schools	Grades 2-5	2 per classroom, or per CU permit
	Grades 6-12	2 per 10 vehicle spaces, or per CU permit
Religious Institutions and Places of Worship		1 per 20 vehicle spaces, or per CU permit

2. **Location and Design.** At least 20 percent of the required bicycle parking spaces shall be no farther from a primary building entrance than the distance from that entrance to the closest vehicle space, or 100 feet, whichever is less. Covered bicycle parking shall be incorporated wherever practical into building design (e.g., under eaves or stairwells). When allowed within a public right-of-way, bicycle parking should be coordinated with the design of street furniture, as applicable.

3. **Visibility and Security.** Bicycle parking for customers and visitors of a use shall be visible from street sidewalks or building entrances, so that it provides sufficient security from theft and damage;

4. **Lighting.** For security, bicycle parking shall be at least as well lit as vehicle parking.

5. **Reserved Areas.** Areas set aside for bicycle parking shall be clearly marked and reserved for bicycle parking only.

6. **Hazards.** Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located so as to not conflict with vision clearance standards

Ordinance 418 Section XI Street, Roadway and Other Utility Design Improvement Standards

Note to reader: Ordinance 418, Development Regulations, Chapter 8, Section XI Street, Roadway and Other Utility Design Improvement Standards is amended to implement the TPR. The update to Chapter 8, Section XI incorporates new street and bike lane sections, sidewalks, pathways and related development standards. Current street section tables are replaced with the new and revised sections from the TSP document.

The Public Works Standards document is incorporated by reference. New language and graphics from the TSP update will be incorporated into the Public Works Standards document. The following section is added to Section 1 of Ordinance No. 418, Section X, Street, Roadway and Other Utility Design Improvement Standards.

X. Creation of Streets or Ways.

***

7. **Conditions of Development Approval.** No development may occur unless required public improvements are in place or guaranteed, in conformance with the provisions of this Code. Improvements required as a condition of development approval, when not voluntarily accepted by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development approval shall indicate how the required improvements are directly related and roughly proportional to the impact.

8. **Development Standards and Criteria.** Projects shall be required to meet current code standards in effect at the time an application is filed.

   a. Adequate Public Facilities. No development shall be approved unless adequate transportation facilities are available or improvements will be constructed and operational, as required by this Code, and the Union Transportation System. If existing improvements leading to or serving the site are inadequate to handle anticipated loads, improvements are to be constructed and operational prior to the issuance of building permits or in conjunction with construction of the approved lots or parcels pursuant to financial assurance for the improvements or a written agreement with the City prior to final plat approval. Development resulting in increased traffic on a state highway shall meet the traffic operations standards per the current Oregon Highway Plan.

   b. Amendments Significantly Affecting Transportation Facilities. Amendments to the Comprehensive Plan, Zoning Map, or any land use regulation that significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity and performance standards of the facility identified in the Transportation System Plan. This shall be accomplished pursuant to the State Transportation Planning Rule (OAR 660-012-0060).

   c. Street Improvements. Streets within and adjacent to a development shall be improved in accordance with the City of Union Transportation System Plan and the provisions of this Chapter. Development of new streets, including sidewalks, curbs, gutters, bicycle lanes, vehicle travel lanes, traffic control devices, and park strips, and additional right-of-way or street width or improvements planned as a portion of an existing street, shall be improved in accordance with this Chapter; and all public streets shall be dedicated to the applicable road authority upon the Union Public Works Department acceptance of said improvements.

   d. Access Improvements. All new streets, and driveways connecting to streets, shall be paved; driveways and driveway aprons shall be improved as required by the standards of the union Public Works Standards Document.

9. **Guarantee.** The City may accept a future improvement guarantee (e.g., cash, bond, and/or owner agreement not to object to the formation of a local improvement district in the future) in lieu of street improvements if one or more of the following conditions exist:

   a. A partial improvement would create a potential safety hazard to motorists or pedestrians;

   b. Due to the developed condition of adjacent properties it is unlikely that street improvements would be extended in the foreseeable future and the standard improvement associated with the project under review would not, by itself, provide increased street safety or capacity, or improved pedestrian circulation;

   c. The improvement would be in conflict with an adopted capital improvement plan; or

d. The improvement is associated with an approved land partition and the proposed land partition does not create any new streets or result in increased transportation demand.

10. **Creation of Rights-of-Way for Streets and Related Purposes.** Streets shall be created through the approval and recording of a final subdivision or partition plat; except the City may approve the creation of a street by acceptance of a deed, provided that the street is deemed in the public interest by the City Council for the purpose of implementing the Union Transportation System Plan, and the deeded right-of-way and improvements conform to the standards of this Code.

11. **Creation of Access Easements.** The City may approve a pedestrian access easement in lieu of a full street connection, where requiring a full street connection is impracticable.

Section XI, Street, Roadway and Other Utility Design and Improvement Standards.

***

H. Street Standards.

[Insert Table from TSP]

Where a range of width is indicated, the following factors shall guide street design, subject to approval of the Public Works Department:

a. Transportation policies of the Transportation System Plan;
b. Anticipated traffic generation;
c. On-street parking needs;
d. Sidewalk and bikeway requirements, including the extension of and connection to existing sidewalks;
e. Requirements for placement of utilities;
f. Street lighting;
g. Minimize drainage, slope, and sensitive lands impacts;
h. Street tree location;
i. Protection of significant vegetation;
j. Safety, comfort, and convenience of motorists, bicyclists, and pedestrians;
k. Placement of street furnishings (e.g., benches, lighting, bus shelters, etc.), as applicable;
l. Access needs for emergency vehicles and for emergency evacuation; and
m. Transition between different street widths (i.e., existing streets and new streets).

***

3. **Street Alignment and Connections.**

a. The creation of new streets making "T" intersections at collectors and arterials shall provide for intersection spacing of not less than 300 feet, as measured from the centerlines of the offset streets.

b. Spacing between local street intersections shall have a minimum separation of 125 feet, except where the Union Public Works approves closer spacing due to topographic constraints or as necessary to provide a traffic calming feature, such as an open space, roundabout, or similar amenity. This standard applies to four-way and three-way (off-set) intersections.

Note to reader: This chapter is new, as requested by the City.

9.130 Site Design Review

1. **Applicability.** Site Design Review shall be required for all new developments and modifications of existing developments, except for regular maintenance, repair and replacement of materials (e.g., re-painting, roof, siding, awnings, etc.), parking resurfacing and similar maintenance and repair shall be exempt from review. Development includes but is not limited to building construction, grading, paving, the addition or removal of parking spaces, the placement of structures on a property, and the removal of landscaping where such landscaping is required by code.

2. **Site Design Review.** Site Design Review is a discretionary review conducted by the Planning Commission in a public hearing. Site Design Review applies to all development in the City, except developments specifically listed under "A" above. Site Design Review ensures compliance with design standards and public improvement requirements, and other applicable regulations.

3. **Site Design Review - Application Review Procedure.** The procedure for Site Design Review is the same as listed in Section 5, except that notice shall be mailed to owners of land within 300 feet of the subject site and to affected agencies, including as applicable Union County and the Oregon Department of Transportation.

4. **Site Design Review - Application Submission Requirements.**

In addition to the application and fee, the following information, as deemed applicable by the City Planning Official, is required. The Planning Official may request other information as needed to review the proposal and prepare a complete staff report and recommendation:

a. Existing conditions map, with existing built and natural features on the subject property.
b. Proposed site plan drawn to scale with information on all proposed development, at a level of detail sufficient to show how applicable code requirements are met.

c. Preliminary grading plan indicating general changes to contour lines, slope ratios, slope stabilization proposals, and location and height of retaining walls, if proposed. Surface water detention and treatment plans may also be required.

d. Landscape plan indicating the location and height of existing and proposed fences, buffering or screening materials; the location, size, and species of the existing and proposed plant materials (at time of planting); proposed irrigation plan.

e. Written narrative or letter documenting how the project proposal complies with the applicable code requirements.

f. Traffic Impact Analysis, as required by the roadway authority.

5. **Site Design Review - Approval Criteria.** An application for Site Design Review shall be approved if the proposal meets all of the following criteria. The City decision making body may, in approving the application may impose reasonable conditions of approval, consistent with the applicable criteria:

   a. The application complies with all of the applicable provisions of the underlying zoning district;

   b. The proposal complies with all of the Design Standards in Section 9;

   c. Adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact are avoided; or where impacts cannot be avoided, they are minimized; and

   d. Existing conditions of approval required as part of a prior land use decision, if any, are met.

6. **Site Design Review – Assurances.** Any public improvement required as part of a Site Design Review approval shall be subject to the performance guarantee and warranty bond provisions of this code.

7. **Site Design Review - Compliance With Permit Approval; Modifications; Permit Expiration.** The applicant shall demonstrate compliance applicable City codes and requirements prior to issuance of building permits. Substantial modifications to site design review approvals shall be subject to review and approval by the Planning Commission based on the code standards in effect at the time of the modification. Site design review approvals expire one (1) year after approval except where the applicant has applied for building permits or initiated development.

8. **Extension.** The Planning Official, upon written request by the applicant, may grant a written extension of the approval period not to exceed one year where the applicant can show intent

of initiating construction on the site within the one-year extension period, but due to circumstances beyond the applicant's control the extension is needed. Where there have been changes to the applicable code provisions and the expired plan does not comply with those changes, then the extension shall not be granted and a new site design review is required.

Section 6
TPR Compliance

TPR COMPLIANCE

TPR Requirements	*Union TSP Compliance*
660-012-0015 Preparation and Coordination of TSPs	
(3) Cities and counties shall prepare, adopt and amend local TSPs for lands within their planning jurisdiction in compliance with this division:	
(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;	*The City of Union TSP has been developed to meet the local transportation needs. It has been developed (to the extent necessary) for consistency with the Union County TSP and adopted elements of the state transportation plan.*
(5) The preparation of TSPs shall be coordinated with affected state and federal agencies, local governments, special districts, and private providers of transportation services.	*The City of Union TSP was guided by a Project Management Team (PMT), Technical Advisory Committee (TAC), and project stakeholders. Members of these committees included City of Union staff, ODOT staff, Community Connections and various citizens/business owners within the City of Union.*
(6) Mass transit, transportation, airport and port districts shall participate in the development of TSPs for those transportation facilities and services they provide. These districts shall prepare and adopt plans for transportation facilities and services they provide. Such plans shall be consistent with and adequate to carry out relevant portions of applicable regional and local TSPs. Cooperative agreements executed under ORS 197.185(2) shall include the requirement that mass transit, transportation, airport and port districts adopt a plan consistent with the requirements of this section.	*Community Connections representatives participated as a Project Stakeholder. The ODOT Region 5 Transit Coordinator also participated as a member of the TAC.*
660-012-0020 Elements of Transportation System Plans	
(2) The TSP shall include the following elements: (a) A determination of transportation needs as provided in OAR 660-012-0030; (b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSP's shall be consistent with functional classifications of roads in state and regional TSP's and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-012-0045(3)(b). New connections to arterials and state highways shall be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address: (A) Extensions of existing streets; (B) Connections to existing or planned streets, including arterials and collectors; and (C) Connections to neighborhood destinations.	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II identified the existing and future conditions needs.* *The Intersection and Roadway Plan in Volume I identifies a refined functional classification plan and local street connectivity plan that addresses the extension of streets, connections to planned streets, and connections to schools and other destinations.*
(c) A public transportation plan which: (A) Describes public transportation services for the transportation disadvantaged and identifies service inadequacies;	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II identifies the existing public transportation services.* *The Transit Plan in Volume I identifies new transit policies and actions that will ensure that the City of Union will continue to recognize transit as a viable and important part of its transportation*

TPR Requirements	*Union TSP Compliance*
(B) Describes intercity bus and passenger rail service and identifies the location of terminals; (C) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses. (D) For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at buildout. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.	*infrastructure network.*
(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514;	*The Active Transportation Plan in Volume I identifies improvements for bicycle, pedestrian, and multi-use trails within the City of Union.*
(e) An air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branchline railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state or federal regulations;	*The Other Modes Plan in Volume I includes air, rail, and water plans.*
(f) For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management; (g) A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);	*The City of Union is not required to address section (f) and (g).*
(h) Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;	*Policy and Code Amendments section in Volume II includes funding alternatives, improvement costs for identified projects, and lists potential funding sources that the city of Union can consider to help implement different projects.*
(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.	*The Funding and Implementation Plan in Volume I includes funding alternatives, improvement costs for identified projects, and lists potential funding sources that the City of Union can consider to help implement different projects.*
(3) Each element identified in subsections (2)(b)-(d) of this rule shall contain: (a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition: (A) The transportation capacity analysis shall include information on: (i) The capacities of existing and committed facilities; (ii) The degree to which those capacities have been reached or surpassed on existing facilities; and (iii) The assumptions upon which these capacities are based.	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II includes an assessment of existing transportation facilities by function, type, capacity (where necessary),and condition.*

TPR Requirements	*Union TSP Compliance*
(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency; (C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).	
(b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and performance standards;	*The Multi-Modal Circulation Alternatives Analysis Technical Memorandum in Volume II includes an assessment of planned transportation facilities.*
660-012-0025 Complying with the Goals in Preparing Transportation System Plans; Refinement Plans	
(1) Except as provided in section (3) of this rule, adoption of a TSP shall constitute the land use decision regarding the need for transportation facilities, services and major improvements and their function, mode, and general location.	*The City of Union TSP will serve as the guiding document for all major transportation improvement projects over the next 20 years.*
(2) Findings of compliance with applicable statewide planning goals and acknowledged comprehensive plan policies and land use regulations shall be developed in conjunction with the adoption of the TSP.	*The TPR Compliance section in Volume II identifies findings of compliance.*
660-012-0030 Determination of Transportation Needs	
(1) The TSP shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including: (a) State, regional, and local transportation needs; (b) Needs of the transportation disadvantaged; (c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR 660-009 and Goal 9 (Economic Development).	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II and the Multi-Modal Circulation Alternatives Analysis Technical Memorandum in Volume II include an assessment of future transportation needs.*
(3) Within urban growth boundaries, the determination of local and regional transportation needs shall be based upon: (a) Population and employment forecasts and distributions that are consistent with the acknowledged comprehensive plan, including those policies that implement Goal 14. Forecasts and distributions shall be for 20 years and, if desired, for longer periods; and (b) Measures adopted pursuant to OAR 660-012-0045 to encourage reduced reliance on the automobile.	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II and the Multi-Modal Circulation Alternatives Analysis Technical Memorandum in Volume II is consistent with the acknowledged comprehensive plan and is based on 20-year forecasts.* *The Active Transportation Plan identifies multi-use trails, sidewalks, and refinement plans (for improving bicycle accommodation of the arterial network) that will increase accessibility and help reduce reliance on motorized forms of transportation.*
660-012-0035 Evaluation and Selection of Transportation System Alternatives	
(1) The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:	*The TSP modal plans have been developed based on identified operation, safety, and system compliance needs.*
(a) Improvements to existing facilities or services;	*Transportation improvements to existing facilities were considered in the plan development process. Where operational and safety issues were cited, these improvements were identified as near-term priority improvements.*
(b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;	*New facility improvements were identified for roadways, intersections, sidewalks, bicycle lanes, and multi-use paths.*

TPR Requirements	*Union TSP Compliance*
(c) Transportation system management measures;	*The Multi-Modal Circulation Alternatives Analysis Technical Memorandum in Volume II identifies projects that will allow the City and ODOT to better manage and accommodate multi-modal uses on existing facilities.*
(d) Demand management measures; and	*n/a*
(e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.	*n/a*
(3) The following standards shall be used to evaluate and select alternatives:	
(a) The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged comprehensive plan;	*The Existing Conditions and Future Conditions Technical Memorandum in Volume II identified the land uses and traffic volume projections used in the forecast analysis.*
(c) The transportation system shall minimize adverse economic, social, environmental and energy consequences;	*To the extent necessary and possible, economic, social, and environmental impacts were considered in the evaluation of transportation projects.*
(d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation; and	*The Multi-Modal Circulation Alternatives Analysis Technical Memorandum in Volume II identified the need to facilitate improved long-term multi-modal connections throughout Union.*
(e) The transportation system shall avoid principal reliance on any one mode of transportation by increasing transportation choices to reduce principal reliance on the automobile. In MPO areas this shall be accomplished by selecting transportation alternatives which meet the requirements in section (4) of this rule.	*The TSP has given equal weight to all modes of transportation including walking, bicycling, automobiles, and transit. A focus of the bicycling and walking sections (Active Transportation Plan) was to identify projects that would increase the potential for people of all ages to access destinations such as schools and activity centers without the reliance upon the automobile.*
660-012-0040 Transportation Financing Program	
(1) For areas within an urban growth boundary containing a population greater than 2,500 persons, the TSP shall include a transportation financing program.	*Full documentation of the transportation financing section is provided in the Funding and Implementation section in Volume I.*
(2) A transportation financing program shall include the items listed in (a)-(d):	
(a) A list of planned transportation facilities and major improvements;	*Planned transportation facilities and major improvements are identified for all modes in Volume I, Section 2 (Active Transportation Plan), Section 3 (Intersection and Roadway Plan), Section 4 (Transit Plan), and Section 5 (Other Modes).*
(b) A general estimate of the timing for planned transportation facilities and major improvements;	*Project improvement tables have been produced for each modal element. With each table, a near- and longer-term priority has been identified for each project.*
(c) A determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP; and	*Project improvement tables have been produced for each modal element. With each table, a near- and longer-term priority has been identified for each project.*
(3) The determination of rough cost estimates is intended to provide an estimate of the fiscal requirements to support the land uses in the acknowledged comprehensive plan and allow jurisdictions to assess the adequacy of existing and possible alternative funding mechanisms. In addition to including rough cost estimates for each transportation facility and major improvement, the transportation financing plan shall include a discussion of the facility provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each transportation facility and major improvement. These funding mechanisms may also be described in terms of general guidelines or local policies.	*The funding section identifies a planning level cost estimate for each identified project. In addition, alternative funding mechanism have been identified an assessed.*
(5) The transportation financing program shall provide for phasing of major improvements to encourage infill and redevelopment of urban lands prior to facilities and improvements which would cause premature development of urbanizable lands or conversion of rural lands to urban uses.	*n/a*