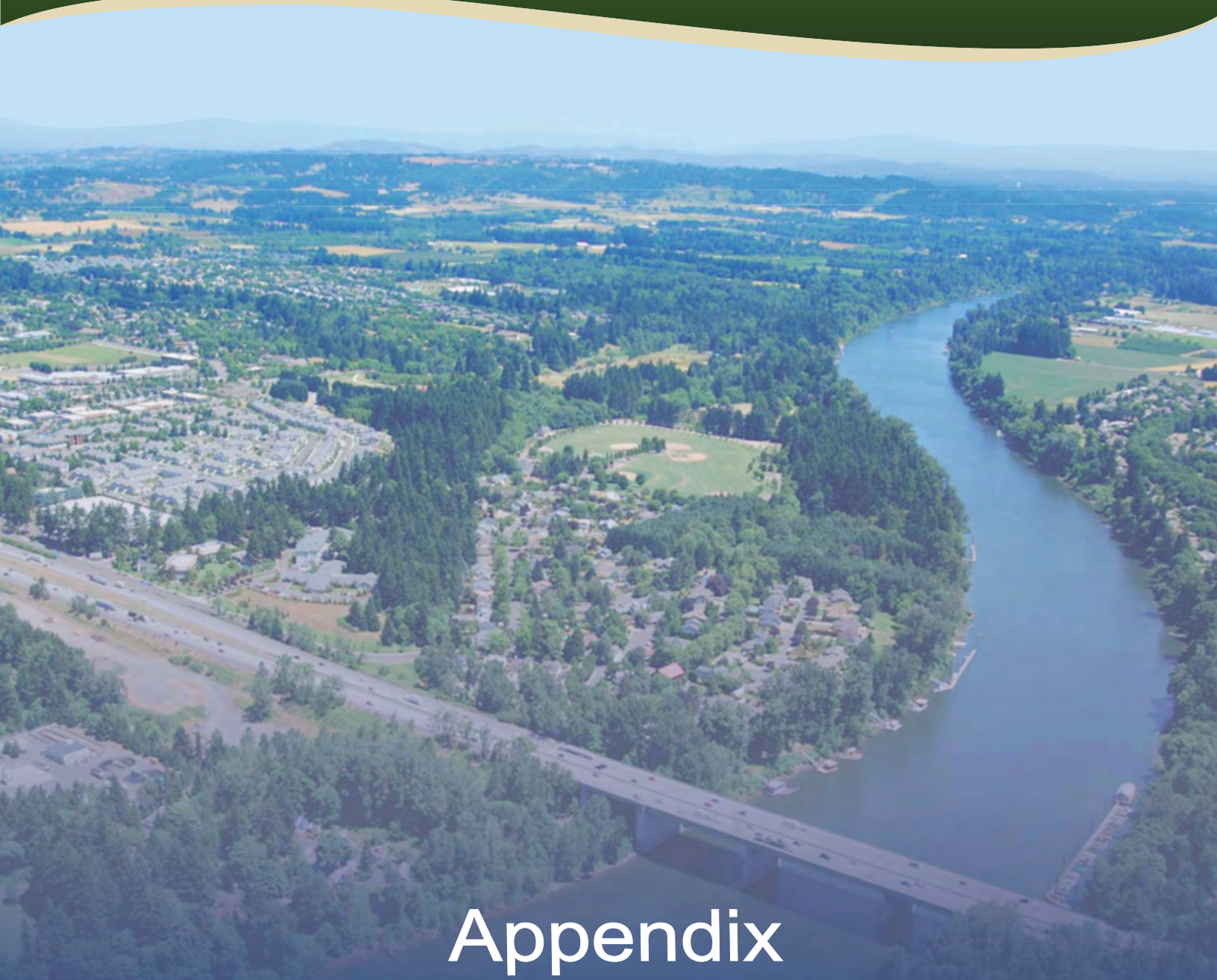
Wilsonville
Transportation System Plan



Appendix

List of Appendices

Appendix A

POLICY FRAMEWORK (DKS, 2011)

DKS Associates
TRANSPORTATION SOLUTIONS

Technical Memorandum

DATE: August 1, 2011

TO: Project Management Team

FROM: Scott Mansur, P.E. and Julie Sosnovske, P.E., DKS Associates,
Darci Rudzinski, AICP and Shayna Rehberg, AICP, Angelo Planning Group

SUBJECT: **Wilsonville Transportation System Plan Update – Policy Framework (Task 2.1)**
P10068-007

This memorandum provides a policy framework for the Wilsonville Transportation Systems Plan (TSP) Update using the identified state, regional, and local policies, plans, and regulations. The City's current TSP will serve as the foundation for the update process, upon which new information from system analysis and stakeholder input will be applied to address changing transportation needs through the year 2035. As new strategies for addressing transportation needs are proposed, compliance and coordination with the existing plans, policies and regulations described herein will be required. This policy framework will be used throughout the TSP Update process as a decision-making tool and will assist in making findings of compliance with adopted plans and regulations. The following plans and documents were reviewed:

State Plans and Regulations:

- Oregon Transportation Plan
- Oregon Highway Plan
- Oregon Bicycle and Pedestrian Plan
- Statewide Transportation Improvement Program
- Department of Transportation Coordination Rules (OAR 731-015)
- Access Management Rules (OAR 734-051)
- Transportation Planning Rule (OAR 660-012)
- Statewide Planning Goals 1 (Citizen Involvement), 2 (Land Use Planning), 11 (Public Facilities and Services), 12 (Transportation) and 14 (Urbanization)

Regional Plans and Regulations:

- Metro Regional Framework Plan
- Metro 2035 Regional Transportation Plan (RTP)
- Metro Regional Transportation Functional Plan (RTFP)
- Transportation and Land Use Implementation Guidance for the Portland Metropolitan Region (May 2011)

- High Capacity Transit System Expansion Policy: Implementation Guidance for the Portland Metropolitan Region (May 2011)
- TriMet Bike Parking Guidelines

Local Plans and Regulations:

- Wilsonville Interchange Area Management Plan (IAMP) (2009)
- City of Wilsonville Transportation Systems Plan (2003)
- City of Wilsonville Transit Master Plan (2008)
- City of Wilsonville Comprehensive Plan (Updated 2011)
- City of Wilsonville Development Ordinance (Chapter 4, updated 2011)
- City of Wilsonville Capital Improvement Plan (Adopted Budget FY 2010-11)
- I-5/Wilsonville Freeway Access Study (2002)
- City Land Use Inventory
- City Goal 5 Inventory and Program (2000-2001)
- City of Wilsonville Bicycle and Pedestrian Master Plan (2006)
- City of Wilsonville Parks and Recreation Master Plan (2007)
- City of Wilsonville Economic Opportunities Analysis Report (2008)
- Coffee Creek Master Plan and Appendices (2007)
- Villebois Master Plan and Appendices (2010)
- City of Wilsonville Street Tree Guide (1998)
- Frog Pond Area
- Basalt Creek Intergovernmental Agreement
- Aurora Airport Master Plan Update
- Clackamas County Comprehensive Plan
- Clackamas County Zoning and Development Ordinance
- Clackamas County Transportation System Plan (2011)
- Clackamas County Capital Improvement Plan
- Washington County Comprehensive Plan
- Washington County Capital Improvement Program
- Washington County 2020 Transportation Plan (2003)

State Plans and Regulations

Oregon Transportation Plan (2006)

The goal of the Oregon Transportation Plan (OTP) is to provide a safe, efficient and sustainable transportation system that enhances Oregon's quality of life and economic vitality. The OTP is a 25-year transportation plan that comprehensively assesses state, regional and local, as well as both public and private transportation facilities and services. It builds on the 1992 OTP, which first established a vision of a balanced, multifaceted transportation system leading to expanded investment in non-highway transportation options. The OTP emphasizes:

- Maintaining and maximizing the assets in place
- Optimizing the performance of the existing system through technology
- Integrating transportation, land use, economic development and the environment
- Integrating the transportation system across jurisdictions, ownerships and modes
- Creating sustainable funding
- Investing in strategic capacity enhancements

Oregon Highway Plan (1999)

The *1999 Oregon Highway Plan* (OHP) defines policies and investment strategies for Oregon's state highway system for the next 20 years by further refining the goals and policies of the *Oregon Transportation Plan* (OTP). One of the key goals of the OHP is to maintain and improve safe and efficient movement of people and goods, while supporting statewide, regional, and local economic growth and community livability. The implementation of this goal occurs through a number of policies and actions that guide management and investment decisions by defining a classification system for state highways, setting standards for mobility, employing access management techniques, supporting intermodal connections, encouraging public and private partnerships, addressing the relationship between the highway and land development patterns, and recognizing the responsibility to maintain and enhance environmental and scenic resources.

Relevant policies in the OHP and how they will affect the TSP Update are described below:

Policy 1A Highway Classification: The state highway classification system was developed to guide ODOT priorities for system investment and management. Actions under this policy pertaining to the Wilsonville TSP Update include the following:

Action 1A.1: The facility classification is used to guide planning, management and investment decisions regarding state highway facilities.

I-5 is classified as an Interstate Highway (NHS): I-5 MP 258.55 – MP 301.91

Provides connections to major cities, regions of the state, and other states. A secondary function in urban areas is to provide connections for regional trips within the metropolitan area. The interstate highways are major freight routes and their objective is to provide mobility. The management objective is to provide for safe and efficient high-speed continuous-flow operation in urban and rural areas.

Boones Ferry Road (OR141) is classified as a District Highway: [1]

- Provides connections and links between small urbanized areas, rural centers and urban hubs and also serve local access and traffic.

I-5 has also been designated as a State Freight Route by ODOT, which places added emphasis on efficient operation to ensure the timely and dependable movement of goods. To support this function, special management objectives for freight routes were developed. Key objectives relating to this IAMP include:

Application of higher highway mobility standards than other Statewide Highways (see "Performance & Design Standards" section of this memorandum);

Examine options to treat designated freight routes as expressways where the routes are outside of urban growth boundaries and unincorporated communities and continue to treat freight routes as expressways within urban growth boundaries where existing facilities are limited access or where corridor or transportation system plans indicate limited access; and

Consider the importance of timeliness in freight movements in developing and implementing plans and projects.

Policy 1B Land Use and Transportation: This policy addresses the relationship between the highway and patterns of development both on and off the highway. It emphasizes development patterns that maintain state highways for regional and intercity mobility and supports compact development patterns that are less dependent on state highways than linear development for access and local circulation. This policy is designed to clarify how ODOT will work with local governments and others to link land use and transportation in transportation plans, facility and corridor plans, plan amendments, access permitting and project development. The overall goal and focus of the Land Use and Transportation Policy is to connect land use and transportation in a way that achieves long-term objectives for the state highway and the local community. ODOT acknowledges that the best way to implement the policy is to establish cooperative working relationships with local governments.

Policy 1C State Highway Freight System: It is the policy of the State of Oregon to balance the need for movement of goods with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck freight routes.

[1] It should be noted that Washington County is in the process of taking over Boones Ferry Road north of Day Road to Nyberg Road. Boones Ferry Road will likely be under the County's jurisdiction within a year.

I-5 is classified as a State Freight Route and as a Federally Designated Truck Route and will be managed accordingly.

Policy 1F Highway Mobility Standards: The Highway Mobility Standards Policy establishes standards for mobility that are reasonable and consistent with the directions of other Highway Plan policies.

Action 1F.1: Applicable mobility standards are summarized in Table 1 below. Interstate highways should have a maximum v/c of 0.99 for both the first and second peak hour within the Metro area on I-5 between the Marquam Bridge and Wilsonville. The exception is at interchange ramp terminals, where the maximum v/c shall be the smaller of the values of the v/c ratio for the crossroad, or 0.85.[2]

Table 1: Maximum Volume to Capacity Ratios from the 1999 Oregon Highway Plan (Inside Metro)

Highway Category/Location	Standard	
	1st hour	2nd hour
Other Principal Arterial Routes I-5 (Marquam Bridge to Wilsonville[3])	0.99	0.99
District/Local Interest Roads	0.90	N/A

Action 1F.2: The mobility standards are applied over a 20-year planning horizon when developing state, regional or local transportation plans. When evaluating highway mobility for amendments to transportation system plans, acknowledged comprehensive plans and land use regulations, use the planning horizons in adopted local and regional transportation system plans or a planning horizon of 15 years from the proposed date of amendment adoption, whichever is greater.

Policy 1G Major Improvements: It is the policy of the State of Oregon to maintain highway performance and improve safety by improving system efficiency and management before adding capacity. ODOT will work in partnership with regional and local governments to address highway performance and safety needs.

Action 1G.1: Alternatives for maintaining adequate operating conditions considered in the TSP Update will include lower cost measures such as access management and local street enhancement and will assign a lower priority to major improvements such as adding new facilities.

Policy 2B Off-System Improvements: It is the policy of the State of Oregon to provide financial assistance to local jurisdictions to develop, enhance and maintain improvements on local transportation systems where they are a cost-effective way to improve the operation of the state highway system if other criteria are met, such as the off-system costs being less

[2] The maximum volume-to-capacity ratio may be increased to as much as 0.90 under certain conditions.
[3] Includes all of Wilsonville to the south Urban Growth Boundary.

than the on-system costs; land use, access management or other policies assure the continued benefit of the off-system improvement; local jurisdictions agree to notify ODOT about any land use changes that could affect the off-system improvement in such a way that could adversely affect the state highway system; and local jurisdictions agree to maintain the off-system improvement in such a way as to assure the continued benefit to the state highway system.

Polity 2F Traffic Safety: It is the policy of the State of Oregon to improve safety for all users of the highway system using solutions involving engineering, education, enforcement, and emergency medical services.

The TSP Update will identify existing crash patterns and crash rates in the management area and will develop strategies to address safety issues.

Policy 3A: Classification and Spacing Standards. This policy addresses the location, spacing and type of road and street intersections and approach roads on state highways. I-5 is classified as an Interstate Highway. Interstate Highways are subject to federal interstate standards as established by the Federal Highway Administration and to ODOT's Interchange Policy. ODOT owns the access rights onto I-5; direct access is not allowed and users may enter or exit the roadway only at interchanges.

The adopted spacing standards can be found in Appendix C of the *Oregon Highway Plan* (Table 2 and Figure 1 below). It includes standards for each highway classification; generally, the access spacing distance increases as either the highway's importance or posted speed increases.

Table 2: ODOT's Minimum Spacing Standards Applicable to Freeway Interchanges with Multi-Lane Crossroads[4][5]

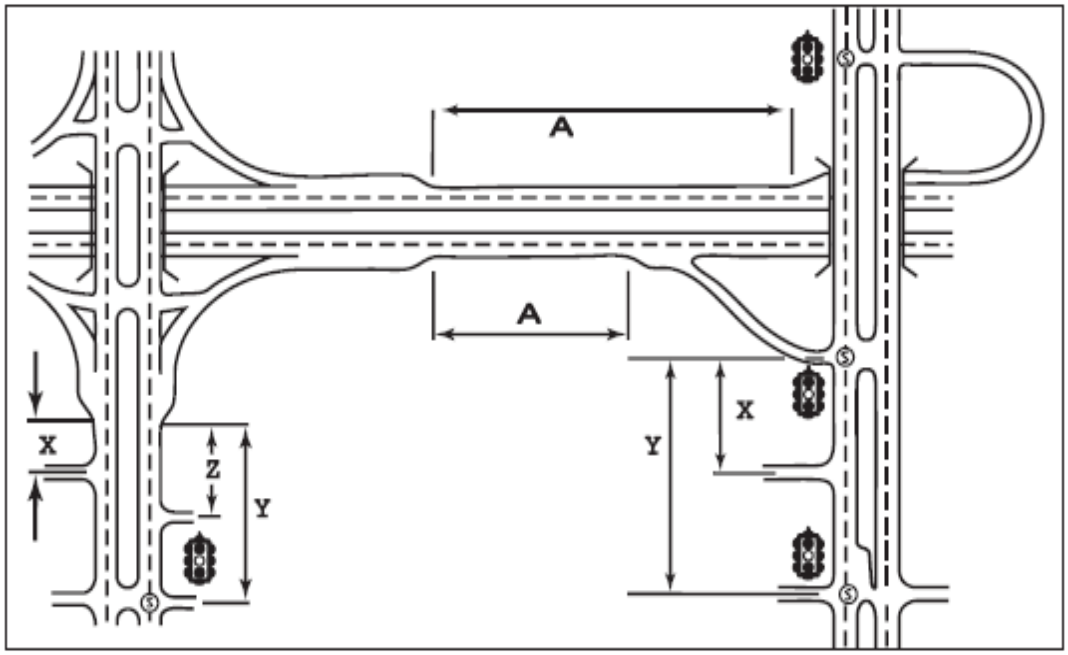
Category of Mainline	Type of Area	Spacing Dimensions			
		A	X	Y	Z
FREEWAY	Fully Developed Urban	1 mi. (1.6 km)	750 ft. (230 m)	1320 ft. (400 m)	990 ft. (300 m)
	Urban	1 mi. (1.6 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)
	Rural	2 mi. (3.2 km)	1320 ft. (400 m)	1320 ft. (400 m)	1320 ft. (400 m)

Notes:
1) If the crossroad is a state highway, these distances may be superseded by the Access

[4] Source: 1999 Oregon Highway Plan.
[5] Note that both the I-5/Wilsonville Road Interchange and the I-5/Stafford Interchange are considered "Fully Developed Urban" by ODOT, per email from ODOT staff, June 9, 2011.

Management Spacing Standards, providing the distances are greater than the distances listed in the above table.
2) No four-legged intersections may be places between ramp terminals and the first major intersection.
3) No application will be accepted where an approach would be aligned opposite a freeway or expressway ramp terminal.

Figure 1: Measurement of Spacing Standards for Table 2



Notes for Figure 1:
A = Distance between the start and end of adjacent interchanges.
X = Distance to first approach on the right, right in/right out only.
Y = Distance to first intersections where left turns are allowed.
Z = Distance between the last approach road and the start of the taper for the on-ramp.

Table 3: Access Management Spacing Standards for District Highways[(1)(2)(3)(4)]

Posted Speed [(5)]	Rural Expressway**	Rural	Urban Expressway ** ***	Urban ****	STA
≥55	5,280	700	2,640	700	
50	5,280	550	2,640	550	
40 & 45	5,280	500	2,640	500	
30 & 35		400		350	(6)
≤25		400		350	(6)

Notes: The numbers in parenthesis refer to explanatory notes that follow.

* Measurement of the approach road spacing is from center to center on the same side of the roadway.

** Spacing for Expressway at-grade intersections only. See Table 12 for interchange spacing.

*** These standards also apply to Commercial Centers.

**** The Urban standard applies in UBAs unless a management plan agreed to by ODOT and the local government(s) establishes a different standard. Spacing standards on access controlled facilities are also guided by those controls.

Notes:

(1) These access management spacing standards are for unsignalized approaches only. Signal spacing standards supersedes access management spacing standards for approaches.

(2) These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-0115(1)(c) and 734-051-0125(1)(c).

(3) For in-fill and redevelopment, see OAR 734-051-0135(4).

(4) For deviations to the designated access management spacing standards see OAR 734-051-0135.

As discussed under the *Access Management Rules* section of this memorandum, Boones Ferry Road is classified by ODOT as a District Highway.

Policy 3C Interchange Access Management Areas: It is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways. The policy provides specific direction for management of access in interchange areas.

This policy was specifically addressed in the Wilsonville Interchange Area Management Plan, October, 2009.

Policy 3D Access Management Deviations: It is the policy of the State of Oregon to manage requests for state highway approach permits that require deviations from the adopted access management spacing standards and policies through an application process to ensure statewide consistency.

If the preferred alternative for the Wilsonville TSP Update does not comply with adopted spacing standards, deviation findings will be provided to address access recommendations as part of the TSP Update.

Oregon Bicycle and Pedestrian Plan (1995)

The provision of safe and accessible bicycling and walking facilities in an effort to encourage increased levels of bicycling and walking is the goal of the Oregon Bicycle and Pedestrian Plan. The Plan provides actions that will assist local jurisdictions in understanding the principals and policies that ODOT follows in providing bike and walkways along state highways. In order to reach the plan's objectives, the strategies for system design are outlined, including:

- Providing bikeway and walkway systems that are integrated with other transportation systems;
- Providing a safe and accessible biking and walking environment; and
- Development of education programs that improve bicycle and pedestrian safety.

The document includes two sections, including the *Policy & Action Plan* and *Bikeway & Walkway Planning Design, Maintenance & Safety*. The first section contains background information, legal mandates and current conditions, goals, actions, and implementation strategies ODOT proposes to improve bicycle and pedestrian transportation. The second section assists ODOT, cities and counties in designing, constructing and maintaining pedestrian and bicycle facilities. Design standards are recommended and information on safety is provided.

Transportation alternatives developed through the study process will need to provide for bicycle and pedestrian travel as recommended in this plan. ODOT is currently updating the design section of the Oregon Bicycle and Pedestrian Plan.[6] Many new pedestrian and bicycle treatments have been developed and incorporated into the update. Once adopted, the updated Oregon Bicycle and Pedestrian Plan Design Standards and Guidelines will be referenced where bicycle or pedestrian facilities are planned as part of state funded projects or facilities.

Statewide Transportation Improvement Program (ODOT)

The Statewide Transportation Improvement Program (STIP) is Oregon's four-year transportation capital improvement program. It is the document that identifies the funding for, and scheduling of, transportation projects and programs. It includes projects on the federal, state, city, and county transportation systems, multimodal projects (highway, passenger rail, freight, public transit, bicycle and pedestrian), and projects in the National Parks, National Forests, and Indian tribal lands. Oregon's STIP covers a four-year construction period, but is updated every two years in accordance with federal requirements. The currently approved program is the *2010-2013 STIP*. The *Draft 2012-2015 STIP* is currently under development, and is available for public viewing and comment.

The *2010-2013 STIP (as amended May 11, 2011)* was reviewed for projects that should be considered during the development of the Wilsonville TSP Update for complimentary or conflicting traffic impacts. The following projects are listed within or in the vicinity of the study area:

- I-5 – OR99W Tualatin – Sherwood Connector (Modernization): Estimated Cost $4,074,000
- I-5 – OR99W Tualatin-Sherwood Connector (Concept Plan): Estimated Cost $446,000
- SW Boones Ferry Rd: SW Norwood Rd – SW Day Rd (Pavement Preservation): Estimated Cost $2 million

[6] A July 2007 public review draft is available via ODOTs website: http://www.oregon.gov/ODOT/HWY/BIKEPED/bp_plan_update.shtml#Backgound_Information

- Tooze Rd: 110th Ave – Grahams Ferry Rd (Modernization): Estimated Cost $800,000
- Kinsman Rd: SW Boeckman – SW Barber (Modernization): Estimated Cost $11,471,000
- Barber St: Coffee Lake Loop – Kinsman (Modernization): Estimated Cost $8,999,000
- French Prairie Bridge: Boones Ferry Rd – Butteville Rd (Planning): Estimated Cost $1,393,000
- Wilsonville Transit Station Improvements (Safety): Estimated Cost $587,000
- Vehicle Replacement (Transit): Estimated Cost $60,000
- SMART Bus/Rail Transit Enhancements Program (Transit Capital): Estimated Cost $11,000
- SMART Bus/Rail Preventive Maintenance (Transit Capital): Estimated Cost $971,000
- SMART Bus & Bus Facilities (Transit Capital): Estimated Cost $139,000
- SMART New Freedom Program (Transit Operations): Estimated Cost $23,000
- SMART Jobs Access/Reverse Commute (Transit Operations): Estimated Cost $40,000

Oregon Department of Transportation Coordination Rules (OAR 731-015)

The TSP Update will be carried out in compliance with the statewide planning goals and in a manner compatible with the City of Wilsonville Comprehensive Plan as well as the Clackamas County Comprehensive Plan and Washington County Comprehensive Plan, as required by ORS 197.180 and OAR 660, Divisions 30 and 31.

Access Management Rules (OAR 734-051)

ODOT has adopted the identified administrative rules to establish procedures and criteria used to govern highway approaches, access control, spacing standards, medians and restriction of turning movements in compliance with statewide planning goals and in a manner compatible with acknowledged comprehensive plans and consistent with Oregon Revised Statutes, Oregon Administrative Rules, and the *1999 Oregon Highway Plan*. Any new street or driveway connections, as well as any changes to existing street or driveway connections to I-5 or Boones Ferry Road (OR141) within the TSP study boundary must be found to be in compliance with these rules by ODOT.

The purpose of Oregon's Access Management Rule is to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction. In addition, the ability to close existing approaches, set spacing standards and establish a formal appeals process in relation to access issues is also identified.

These rules enable the State to set policy and direct location and spacing of intersections and approaches on state highways, ensuring the relevance of the functional classification system and preserving the efficient operation of state routes. Regulating access can:

- Protect resource lands
- Preserve highway capacity
- Ensure safety for segments of state routes with sharp curves, steep grades or obstructed sight distance.

The access management standards adopted by ODOT and applicable to the City of Wilsonville are summarized previously (for I-5 interchange, see Oregon Highway Plan, Policies 3a and 3c, previously) and in the table below.

Table 4: Applicable ODOT Access Management Standards (from 1999 OHP, Appendix C, Table 15)

Highway Category [a]	Spacing Standards [b] (by Posted Speed)				
	≥55 mph	*50 mph*	*40,45 mph*	*30,35 mph*	*≤25 mph*
District Highway (urban)	700 feet	550 feet	500 feet	350 feet	350 feet

[a] *Boones Ferry Road is classified by ODOT as a District Highway.*[7]
[b] *Measurement of the approach road spacing is from center to center on the same side of the roadway.*

Source: 1999 Oregon Highway Plan, Appendix C, Table 14

ODOT applies the Urban access standards for Boones Ferry Road within the City of Wilsonville UGB. These standards will be used in the Wilsonville TSP to analyze the current access conditions along OR141, determine existing deficiencies, and provide direction for establishing a connectivity plan.

Policies 3A and 3C of the *1999 Oregon Highway Plan* establish access management objectives for state highways and interchange areas based on facility type and set standards for spacing of approaches. These standards have also been adopted as part of OAR 734-051, which provides the regulatory basis for implementation. Table 2 and Figure 1(shown previously) show the applicable access management spacing standards for state facilities in the study area. In Table 2, the spacing standards shown are applicable only to approaches on the same side of the roadway, with measurement of approach spacing taken from the centers of adjacent approaches. Also, when using this table, I-5 within the study area is by default designated "Fully Developed Urban" for purposes of access spacing.

The Wilsonville I-5 interchange is a freeway interchange with a multi-lane crossroad. Table 2 and Figure 1 provide ODOT's interchange area access management spacing standards for such a configuration. The proposed locations of any new street connections within interchange

[7] Boones Ferry Road north of Day Road is currently in the process of being transferred to Washington County's jurisdiction.

areas shall be evaluated in accordance with the applicable standards. However, since the Wilsonville Interchange Area Management Plan (IAMP) was recently adopted, it is unlikely that this study will recommend additional changes in the interchange area.

Transportation Planning Rule (OAR 660-012)

The purpose of OAR 660-012 is to implement Statewide Planning Goal 12 (Transportation) and promote the development of safe, convenient, and economic transportation systems that are designed to reduce reliance on the automobile. Key elements include direction for preparing, coordinating, and implementing transportation system plans. In particular, OAR 660-012-0060 addresses amendments to plans and land use regulations and includes measures to be taken to ensure allowed land uses are consistent with the identified function and capacity of existing and planned transportation facilities. This rule includes criteria for identifying significant effects of plan or land use regulation amendments on transportation facilities, actions to be taken when a significant effect would occur, identification of planned facilities, and coordination with transportation facility providers.

OAR 660-012-0045 requires each local government to amend its land use regulations to implement the TSP. It also requires local government to adopt land use or subdivision ordinance regulations consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions.

This policy is achieved through a variety of measures, including access control measures, standards to protect future operations of roads, expanded notice requirements and coordinated review procedures for land use applications, a process to apply conditions of approval to development proposals, and regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP.

Wilsonville has adopted its current (2003) TSP as the transportation element of its Comprehensive Plan. Implementation Measures in the TSP included recommendations to update the city's roadway design standards, amend Comprehensive Plan policy on timing and concurrency, and update code sections pertaining to access control, mobility and design standards.

The 2011/12 Wilsonville TSP Update will help to maximize the investment in the transportation infrastructure by planning for land development, supporting transportation facility construction, and existing transportation facility management in a manner that will sustain adequate operation of the proposed roadway system through the planning horizon year. This will likely include amendments to the City of Wilsonville's Comprehensive Plan and Transportation Systems Plan that reflect this planning effort, as well as a review and possible amendments to city code regulating land use to ensure that the function and capacity of planned facilities are maintained.

Oregon Statewide Planning Goals (OAR 660-015)

The Oregon Statewide Planning Goals provide a foundation for implementing state policy on land use planning. The 19 goals for land use planning in the state are to be achieved through local comprehensive planning. Local comprehensive plans must be consistent with the Statewide Planning Goals. Some of the goals relevant to the Wilsonville TSP Update are the following:

The Citizen Involvement goal (Goal 1) develops a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

The Land Use Planning goal (Goal 2) establishes a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions.

The Public Facilities and Services goal (Goal 11) directs the planning and development of timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

The Transportation goal (Goal 12) directs planning for a safe, convenient, multimodal and economic transportation system. Consideration of local and regional economies, social consequences, environmental impacts, energy, the needs of transportation disadvantaged, and reducing reliance on single-occupancy vehicles (SOV) should be included in local plans. Guidelines for planning and implementation are included to support the Statewide Planning Goals.

The Urbanization goal (Goal 14)

Goal 14 regulates urban growth boundaries. The goal provides that establishment and change of a UGB shall be based upon consideration of the following four factors:

1. Efficient accommodation of identified land needs;
2. Orderly and economic provision of public facilities and services;
3. Comparative environmental, energy, economic, and social consequences;
4. Compatibility of the proposed urban uses with nearby agricultural and forest activities occurring on farm and forest land outside the UGB.

Additionally, ORS 197.298 establishes priorities for including land inside urban growth boundaries. The first (highest) priority for inclusion is land that is designated "urban reserve" land. The second priority is land adjacent to a UGB that is identified as "an exception area or nonresource land." The third priority is land that is designated as "marginal land" pursuant to ORS 197.247. The final (lowest) priority is land that is designated for agriculture, forestry, or both.

The intent of these statewide goals will be considered and incorporated into the Wilsonville TSP Update.

Regional Plans and Regulations

Metro Regional Framework Plan

The Regional Framework Plan unites all of Metro's adopted land use planning policies and requirements. The Charter directs Metro to address the following subjects in the Plan:

- Management and amendment of the Urban Growth Boundary
- Protection of lands outside the Urban Growth Boundary for natural resource use and conservation, future urban expansion or other uses
- Urban design and settlement patterns
- Housing densities
- Transportation and mass transit systems
- Parks, open spaces and recreational facilities
- Water sources and storage
- Coordination with Clark County, Washington
- Planning responsibilities mandated by state law
- Other issues of metropolitan concern

This document brings together these elements as well as previous regional policies including the Regional Urban Growth Goals and Objectives, 2040 Growth Concept, Metropolitan Greenspaces Master Plan and Regional Transportation Plan, to create a coordinated, integrated, Regional Framework Plan.

The 2040 Growth Concept is the unifying concept around which this Regional Framework Plan is based. There are a number of components that make up the building blocks of the Growth Concept. These building blocks include Centers (Central City, Regional Centers, Town Centers, Main Streets and Neighborhood Centers), Station Communities, Corridors, Regionally Significant Industrial Areas, Industrial Areas and Employment Areas, Neighborhoods, Transportation Facilities, Open Spaces and Trail Corridors, Neighbor Cities, and Rural Reserves.

2040 Growth Concept components identified in Wilsonville include the following:

- Town Center (centered around Wilsonville Road just east of I-5)
- Corridors
    - Parkway Avenue between Town Center Loop and Elligsen Road
    - Elligsen Road between Parkway Avenue and Day Road

Metro 2035 Regional Transportation Plan (RTP)

The Regional Transportation Plan provides the long-range blueprint for transportation in the Portland region. The RTP presents the overarching policies and goals, system concepts for all modes of travel, and strategies for funding and local implementation. This RTP update has been shaped by looking ahead to 2035 to anticipate 21st century needs and the following desired outcomes for the region:

- Promote jobs and create wealth in the economy
- Reduce greenhouse gas emissions
- Improve safety throughout the transportation system
- Promote healthy, active living by making walking and bicycling safe and convenient
- Move freight reliably and make transportation accessible, affordable and reliable for commuting and everyday life
- Promote vibrant communities while preserving farm and forest land

Chapter 2 of the RTP establishes mobility standards that are intended as minimum standards for an interim regional mobility policy, one that was recognized by the Oregon Transportation Commission (OTC) as "an incremental step toward a more comprehensive set of measures."

The mobility standards apply to specific transportation facilities in the region, primarily based on surrounding 2040 Growth Concept land use designations . The following 2040 Growth Concept land use designations are found in Wilsonville and are shown in Figure 2:

- Town Center (around Wilsonville Road);
- Corridor (along Boones Ferry Road and Parkway Avenue);
- Station Communities (at the terminus of Westside Express Service commuter rail);
- Employment Land (in northern half of city and along the west side of I-5);
- Park and Natural Areas (adjacent to the Town Center and Willamette River); and
- Neighborhood (all remaining areas).

Figure 2: 2040 Growth Concept Land Use Designations in Wilsonville

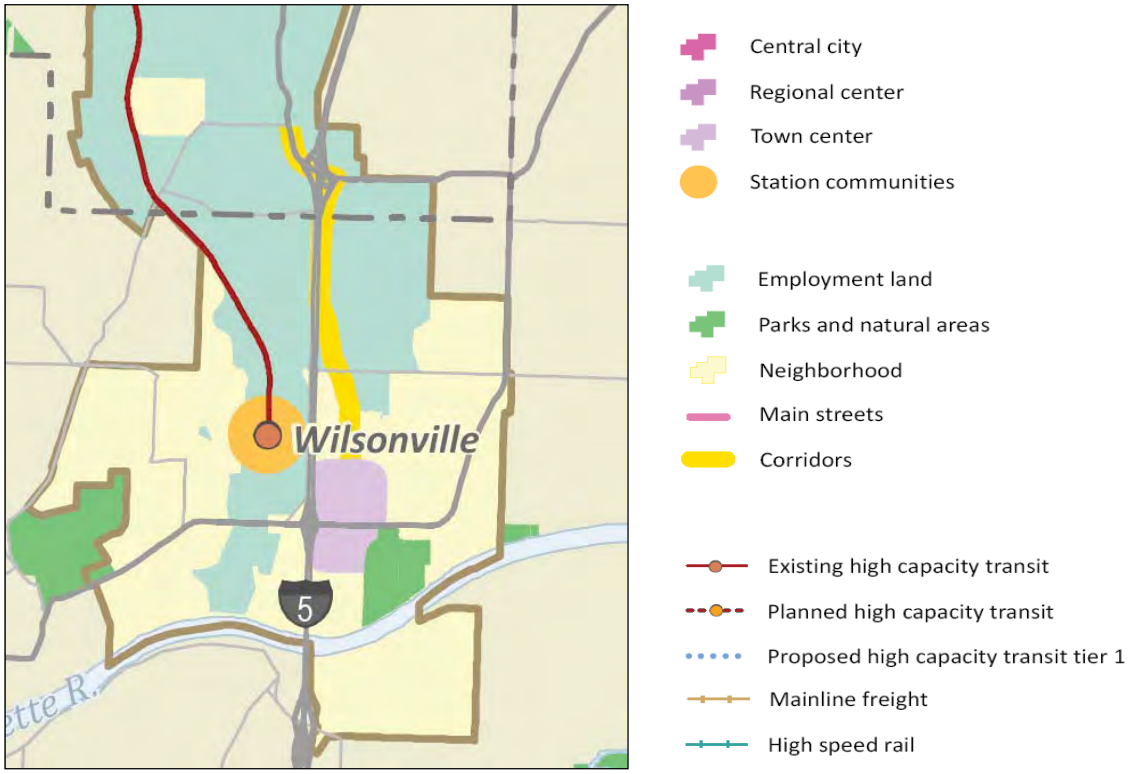


Table 5 presents the regional volume-to-capacity (v/c) mobility standards that currently apply to roadways in Wilsonville according to 2040 land use designations and the RTP.

Table 5. Interim Regional Mobility Standards for Wilsonville

	Mid-Day One-Hour Peak	PM Two-Hour Peak	
		1st Hour	2nd Hour
Town Centers	.99	1.1	.99
Station Communities	.99	1.1	.99
Corridors	.90	.99	.99
Employment Land	.90	.99	.99
Neighborhoods	.90	.99	.99
I-5 (Marquam Bridge to Wilsonville)	.90	.99	.99

Chapter 2 establishes mode share targets for 2040 Growth Concept designations in order to comply with the Transportation Planning Rule and its requirements to reduce reliance on single-occupancy vehicles (SOV). Target for Town Centers, Station Communities, and Corridors are to achieve 45%-55% trips taken by a non-SOV mode; the target for Employment Land and Neighborhoods is 40%-45% non-SOV trips.

Chapter 2 of the RTP gives transportation facilities in the region multiple designations based on the following modes and types of systems: regional street design, street and throughway system, transit system, freight system, bicycle system, and pedestrian system. The designations generally correspond to vision and concept statements. However, only the regional street design classifications are associated with facility design guidance and only the street and throughway system, bicycle system, and pedestrian system designations are associated with policy statements. Regional street design, street and throughway system, bicycle system, and pedestrian system classifications for transportation facilities in Wilsonville are presented in Table 6. Corresponding policy language is presented following the table. Design concepts for Throughways (Freeways), Regional Streets, Community Boulevards, and Community Streets are presented in Figure 3, excerpted from the RTP (Table 2.6).

Table 6. Regional Transportation Facility Classifications in Wilsonville

	Regional Street Design	Regional Street and Throughway System	Regional Bicycle System*	Regional Pedestrian System * **
I-5	Throughway (Freeway)	Principal arterial	-	-
Elligsen Road	Regional street	Minor arterial	Regional bikeway	-
Boones Ferry Road	Regional street	-	Community bikeway	Mixed-use corridor (Between north city limits and I-5)
Kinsman Road	Regional street	-	-	-
Canyon Creek Road	-	-	Community bikeway	-
Boeckman Road	Community street	Minor arterial	Community bikeway	-
Grahams Ferry Road	Community street	Minor arterial	Regional bikeway	-
Wilsonville Road	Community street	Minor arterial	Regional bikeway	-
Parkway Avenue	Community street	Minor arterial	Regional bikeway	Mixed-use corridor
Town Center Loop	Community Boulevard	Minor arterial	Regional bikeway	Mixed-use corridor

* A Regional (Multi-use) Trail is shown as an off-street facility in the western portion of Wilsonville.
** A pedestrian district is designated in the Wilsonville Town Center.

Regional Street and Throughway System Designations

Throughways *currently carry between 50,000 to 100,000 vehicles per day, providing for high-speed travel on longer motor vehicle trips and serving as the primary freight routes, with an emphasis on mobility. Throughways help serve the need to move both trucks and autos through the region. Throughways connect major activity centers within the region, including the central city, regional centers, industrial areas and intermodal facilities.*

Arterial streets *usually carry between 10,000 and 40,000 vehicles per day and allow higher speeds than collector and local streets. Major arterial streets accommodate longer-distance through trips and serve more of a regional traffic function. Minor arterial streets serve shorter trips that are localized within a community.*

Regional Bicycle System Designations

Regional Bicycle Parkways *form the backbone of the regional bicycle network, providing for direct and efficient travel with minimal delays in different urban environments and to destinations outside the region.*
(Note: No Regional Bicycle Parkways have been designated yet. These will be developed as part of the upcoming regional Active Transportation Action Plan.)

Regional Bikeways *provide for travel to and within the Central City, Regional Centers, and Town Centers.*

Community Bikeways *provide for travel to and within other 2040 Target Areas. These routes also provide access to regional attractions such as schools and parks and connect neighborhoods to the rest of the regional bicycle network.*

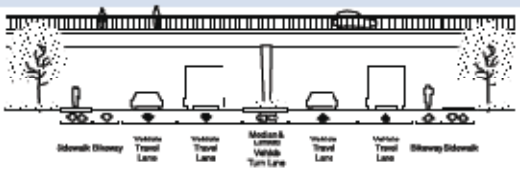
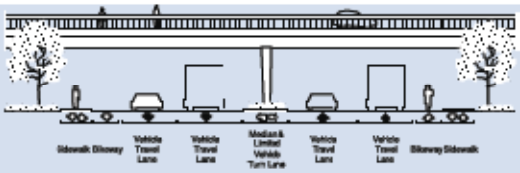
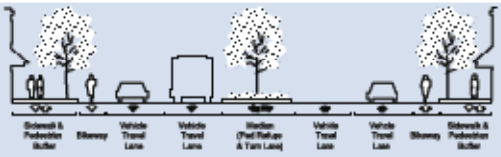
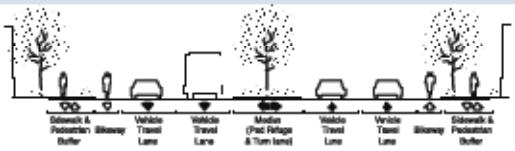
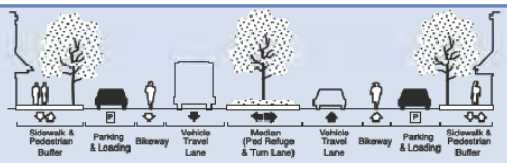
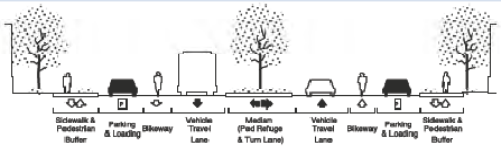
Regional Pedestrian System Designations

Transit/mix-use corridors *are priority areas for pedestrian improvements. They are located along good-quality transit lines and will be redeveloped at densities that are somewhat higher than today. These corridors will generate substantial pedestrian traffic near neighborhood-oriented retail development, schools, parks and bus stops.*

These corridors should be designed to promote pedestrian travel with such features as wide sidewalks with buffering from adjacent motor vehicle traffic, street crossings at a minimum of 530 feet – though an ideal spacing is 200 to 400 feet where possible (unless there are no intersections, bus stops or other pedestrian attractions), special crossing amenities at some locations, special lighting, bus shelters, awnings and street trees.

Pedestrian districts *are areas of high, or potentially high, pedestrian activity where the region places priority on creating a walkable environment. These include the central city, regional and town centers and light rail station communities where sidewalks, plazas and other public spaces are integrated with civic, commercial and residential development…They are often characterized by compact mixed-use development served by transit…These areas will be characterized by buildings oriented to the street and boulevard-type street design features such as wide sidewalks with buffering from adjacent motor vehicle traffic, marked street crossings at all intersections with special crossing amenities at some locations, special lighting, benches, bus shelters, awnings and street trees. All streets within pedestrian districts are important pedestrian connections.*

Figure 3. Throughway and Arterial Design Concepts

Trip Type	2040 Design Concept	Network Function	Illustrative Design Concept	Typical number of planned travel lanes[7]
			THROUGHWAYS	
Interstate/ regional	Throughway (Freeway)	Principal arterial		6 through lanes (plus auxiliary lanes) with grade separated interchanges
Interstate/ regional	Throughway (Highway)	Principal arterial		6 through lanes (plus auxiliary lanes) with grade separated intersections/ interchanges
Interstate/ regional	Throughway (Parkway)	Principal arterial		6 through lanes (plus auxiliary lanes) with grade separated intersections/ interchanges
			ARTERIAL STREETS	
Regional / City	Regional Boulevard *2040 centers Station communities Main streets*	Major Arterial		4 through lanes with turn lanes
Regional / City	Regional Street *Industrial areas Employment areas Corridors Intermodal facilities*	Major Arterial		4 through lanes with turn lanes
City	Community Boulevard *2040 centers Station communities Main streets*	Minor Arterial		2 through lanes with turn lanes
City	Community Street *Industrial areas Employment areas Corridors Intermodal facilities*	Minor Arterial		2 through lanes with turn lanes

Chapters 4 and 6 establish mobility corridors in the region and planning directives for these corridors. Wilsonville is part of Mobility Corridor #3 – Tigard/Wilsonville. This particular mobility corridor is important for the "gateway" it provides between the region, Central City, and the Willamette Valley via I-5. The RTP identifies the corridor as one that is prioritized for refinement planning, and places refinement planning within a context of long-term (25-year) planning as follows:

Near-term (1-4 years)

- System demand management along mobility corridor and parallel facilities for all modes of travel.
- Address arterial connectivity and crossings.
- Complete alternatives analysis for High Capacity Transit (HCT) corridor.
- Complete land use planning of HCT corridor as part of HCT System Expansion Policy.
- Complete gaps and make crossing improvements in the sidewalk and bike network.

Medium-term (5-10 years)

- Complete gaps in the arterial network
- Complete mobility corridor refinement plan.
- Coordinate transportation system management (TSM)/transportation demand management (TDM) strategies.

Long-term (10-25 years)

- Make interchange and/or capacity improvements, consistent with refinement plan.

The following projects, in or in the vicinity of the City of Wilsonville, are listed in Metro's Final 2035 RTP Project List:[8]

- Kinsman Road extension: Barber Street to Boeckman Road – 3 lanes with sidewalks and bike lanes. Current estimated cost ~ $10.4 million
- Tooze Road improvements: 110th Avenue to Grahams Ferry Road – Widen Tooze Road to 3 lanes, adding bicycle/pedestrian connections to regional trail system. Current estimated cost $3.8 million
- Boeckman Road/I-5 overcrossing: Widen Boeckman Road bridge over I-5 to 3 lanes, adding bicycle pedestrian connections to regional trail system. Current estimated cost $13.6 million
- French Prairie bicycle/pedestrian bridge: Construct a new bicycle/pedestrian/emergency vehicle only bridge crossing the Willamette River. Current estimated cost $15 million
- Barber Street extension: Kinsman Road to Villebois – 3 lanes with sidewalks and bike lanes. Current estimated cost $8.9 million
- Kinsman Road extension: Ridder Road to Day Street – 3 lanes with sidewalks and bike lanes. Current estimated cost $6.5 million

[8] Final 2035 RTP Project List, published October 4, 2010.

- Boeckman Road improvements: Canyon Creek Road North to Stafford Road – widen to 3 lanes with bike lanes, sidewalks and connections to regional trail system. Includes removal of culvert and new bridge. Current estimated cost $5.8 million.
- 65th/Elligsen/Stafford Intersection Improvements: Combine intersections to improve turn radii, sight distance and grade differential. Current estimated cost $3.0 million
- Stafford Road improvements: Reconstruct, widen and add turn lanes. Current estimated cost ~$26.8 million
- Grahams Ferry Road improvements: Helenius St to Washington/Clackamas County Line – widen to 3 lanes, adding pedestrian/bicycle connections to regional trail system and fixing undersized railroad crossing for freight access. Current estimated cost $28 million
- Day Street: Grahams Ferry Road to Boones Ferry Road – reconstruct road to accommodate increasing volumes of heavy trucks. Current estimated cost $3.2 million
- Wilsonville Road/I-5 Interchange Improvements:
    - Setback abutments and widen: Provide additional left-turn lanes, setback abutments, improve signal synchronization, fix sight distance problems, provide enhanced bicycle/pedestrian safety. Current estimated cost $11 million
    - Add capacity to the interchange: widen and lengthen on/off ramps. Current estimated cost $12 million
    - Improve interchange and extend auxiliary lane from Hubbard cut-off to Wilsonville: Reconstruct all interchange ramps and improve Wilsonville Road at interchange. Add northbound auxiliary lane from Hubbard cut-off to Wilsonville Road. Current estimated cost $21.2 million
    - Auxiliary lanes: Provide auxiliary lanes for enhanced safety and capacity. Current estimated cost $12.5 million
- I-5 – ORE 99W Connector: Construct improvements consistent with recommendations from I-5/99W connector process. Current estimated cost $10 million

Metro 2035 Regional Transportation Functional Plan (RTFP)

The Regional Transportation Functional Plan (RTFP) directs how city and county plans will implement the RTP through their respective comprehensive plans, local transportation system plans (TSPs) and other land use regulations. The RTFP codifies existing and new requirements that local plans must comply with to be consistent with the RTP. If a TSP is consistent with the RTFP, Metro will find it to be consistent with the RTP.

The RTFP provides guidance on several areas including transportation design for various modal facilities, system plans, regional parking management plans and amendments to comprehensive plans. The following are directives that specifically pertain to updating local transportation systems plans:

- Include regional and state transportation needs identified in the 2035 RTP in local TSPs along with local needs

- Local needs must be consistent with RTP in terms of land use, system maps and non-SOV modal targets
- When developing solutions, local jurisdictions shall consider a variety of strategies, in the following order:
    - TSMO (Transportation System Management Operations)
    - Transit, bicycle and pedestrian improvements
    - Traffic calming
    - Land use strategies in OAR 660-012-0035(2)[9]
    - Connectivity, including pedestrian and bicycle facilities
    - Motor vehicle capacity improvements
- Local jurisdictions can propose regional projects as part of RTP process
- Local jurisdictions can propose alternate performance and mobility standards, however, changes must be consistent with regional and statewide planning goals
- Local parking regulations shall be consistent with the RTFP

Transportation and Land Use Implementation Guidance for the Portland Metropolitan Region (May 2011)

The purpose of this document is to help local jurisdictions and consultants understand and implement recent regional policy and regulatory changes. It includes guidance for the RTFP and Title 6 of the Urban Growth Management Functional Plan (UGMFP). Title 6 offers investment and other incentives to cities and counties to develop their own strategies and actions to better utilize zoned capacity, in a way that enhances each community and helps them achieve their aspirations in their own 2040 Centers, Corridors, Main Streets and Station Communities.

The document provides a template for developing a local TSP. It also offers checklists for local compliance in TSP, development code and comprehensive plan/other adopted documents.

Title 6 of the UGMFP was recently expanded to cover not only Centers and Station Communities, but corridors and main streets because of their potential for redevelopment and infill. It aligns local and regional investment to support local aspirations and better links land use and transportation to support mixed-use, pedestrian-friendly, and transit-supportive development. It moves away from reporting requirements to an incentive-based approach. Available incentives include:

- Eligibility for a regional investment, currently defined as new high capacity transit lines only. In the future, the Metro Council, in consultation with the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee on Transportation (JPACT) could add other major investments to this definition.

[9] This section of the Transportation Planning Rule requires Metro area jurisdictions to evaluate land use designations, densities, and design standards to meet local and regional transportation needs. Strategies could include increasing residential densities, setting density minimums near transit lines, employment areas, etc., designating lands for neighborhood shopping centers within convenient walking and cycling distance of residential areas, and designating land uses to provide a better balance between jobs and housing.

- Ability to use a higher volume-to-capacity standard under the Oregon Highway Plan when considering amendments to comprehensive plans or land use regulations, and
- Eligibility for an automatic 30 percent trip reduction credit under the Transportation Planning Rule when analyzing traffic impacts of new development in plan amendments for a Center, Corridor, Station Community, or Main Street.

This document outlines requirements to be eligible for these incentives and a chart summarizing the required steps.

High Capacity Transit System Expansion Policy: Implementation Guidance for the Portland Metropolitan Region (May 2011)

The 2035 RTP included an outline for developing a high capacity transit (HCT) system expansion policy. The policy emphasizes fiscal responsibility by ensuring that limited resources for new HCT are spent where local jurisdictions have committed supportive land uses, high quality pedestrian and bicycle access, management of parking resources and demonstrated broad based financial and political support.

The purpose of this document is to:

1. Clearly articulate the decision-making process by which future HCT corridors will be advanced for regional investment.
2. Establish minimum requirements for HCT corridor working groups to inform local jurisdictions as they work to advance their priorities for future HCT.
3. Define quantitative and qualitative performance measures to guide local land use and transportation planning and investment decisions.
4. Outlines the process for updating the 2035 RTP, including potential future RTP amendments, for future HCT investment decisions.

This document is significant to the TSP effort since the WES commuter rail corridor is listed as a "Near-term regional priority corridor."

TriMet's Bike Parking Guidelines

Access to TriMet by bicycle is a key element of the TriMet Total Transit System. Providing convenient, visible and secure bicycle parking is a cost-effective way to increase the catchment area of transit. This document supplements the TriMet Design Criteria. It describes design considerations for bicycle parking at LRT stations, commuter rail stations and transit centers.

These guidelines were developed using survey, inventory and count data as well as research of best practices and recommendations. The following topics are addressed:

- Bike & Rides
- Bike parking access
- Urban & neighborhood stations: design & layout
- Community stations: design and layout
- Bike & Ride secure area layout

- Bike rack and locker layout
- Bike rack and locker spacing
- Bus stop considerations

Even though these guidelines were developed by TriMet, they would be applicable to many situations in Wilsonville, including commuter rail and South Metro Area Regional Transit (SMART) facilities.

Local Plans and Regulations

Wilsonville Interchange Area Management Plan (IAMP) for I-5/Wilsonville Road Exit 283 (2009)

The Interchange Area Management Plan (IAMP), prepared by DKS Associates, presents how the City of Wilsonville and ODOT will collaborate to improve the Wilsonville Road exit (#283) from Interstate 5 to serve planned growth. The IAMP document describes the extent of required operational and access management solutions and the steps needed to implement the various improvements. The IAMP calls for actions in three key areas:

- **Physical improvements:** Construction of the physical improvements required for the interchange to operate under acceptable standards through the year 2030. These improvements include the planned reconstruction of the interchange, including its entrance and exit ramps, along with associated improvements along Wilsonville Road and Interstate 5 to provide for a functioning interchange into the future.
- **Access management and local circulation:** Two plan elements were developed to help protect capacity in the interchange once the physical improvements are constructed. An access management plan identifies key short-term (with reconstruction of the interchange) and long-term (upon development or redevelopment) actions for improving access control in the vicinity of the interchange. The local circulation plan provides for a local street system that allows alternate circulation within the interchange area, removing some trips from congested Wilsonville Road and interchange intersections. These plans, working together, will help protect capacity in the interchange.
- **Implementation:** Implementation measures necessary to ensure that the plans developed as part of this IAMP are incorporated into the City's Comprehensive Plan, TSP and Development Code.

City of Wilsonville Transportation Systems Plan (2003)

The TSP constitutes the transportation element of the City's Comprehensive Plan. Its purpose is to comply with state mandates requiring transportation planning, to develop standards for the transportation system, to address current problem areas, to identify future roadway needs required to support 20 years of expected growth, and to provide transportation planning guidelines. The plan was consistent with Metro's RTP, Washington County's Transportation Plan, Clackamas County's Comprehensive Plan and Metro's Urban Growth Management Functional Plan, however, it now needs to be updated.

Key elements pertinent to the TSP Update include access spacing standards and identified short, medium, and long range projects. On a major arterial, minimum access spacing is 1,000 feet, with desirable access spacing 1-2 miles. Short and long range project lists from the TSP will be considered as a starting point for this TSP Update.

City of Wilsonville Transit Master Plan (2008)

The Transit Master Plan provides proposals for increased and improved transit service as well as strategies to help reduce the demand on roads and parking. The Transit Master Plan, with its combined transit and transportation demand management (TDM) approaches, replaces Chapters 6 and 8 of the 2003 TSP and will serve as the basis for the transit element of this TSP update. Key recommendations of the Transit Master Plan were addressed in three phases and include:

- Phase 1 – Washington County Commuter Rail Related Services and Expenses:
  - Wilsonville will need to begin contributing a portion of WEB commuter rail operating cost to TriMet
  - Ten-Minute Plan - SMART buses will meet the commuter trains and deliver passengers within 10 minutes of arrival
  - New Route to Eastside Employment Center and Boeckman Road
  - 1X Addition and Route adjustments – SMART route times will be adjusted to meet the train and provide one additional round trip to Salem in the morning and one additional round trip in the evening
- Phase 2 – Proposes an extension to downtown Portland for the route that currently serves TriMet's Barbur Transit Center.
- Phase 3 – Expansion to New Development:
  - Service to Villebois and other new development areas.
    - SMART will provide a new route linking Villebois with commuter rail, Town Center Murase/Memorial Park and Memorial Drive.
    - Another route will provide local service to connect Villebois and commuter rail with employment, shopping, and residential areas on the east side of Wilsonville.

City of Wilsonville Comprehensive Plan (2011)

The purpose of the Wilsonville Comprehensive Plan is to guide the physical development of the City. The plan is presented in four major sections that provide a framework for land use decisions:

1. Citizen Involvement – describes the City's on-going citizen involvement program.
2. Urbanization – defines where and when urban level development will be permitted and recognizes Metro's authority relative to the regional urban growth boundary.
3. Public Facilities and Services – determines what facilities and services must be available to support urban development, and therefore, further defines when development can occur.
4. Land Use and Development – determines future zoning and how a parcel of land may be developed. It provides basic standards for residential, public, commercial, and industrial uses and establishes general planning districts for each of these types of uses. The planning districts are visually represented on a land use map.

The Plan consists of a general background and explanatory text, City of Wilsonville Goals, Policies, Implementation Measures, and a Plan Map. The Wilsonville Comprehensive Plan includes, as sub-elements of the Plan, the City's Transportation Systems Plan (2003 – to be updated with this plan), the Bicycle and Pedestrian Master Plan (2006) and the Transit Master Plan (2008). The City has adopted 1-Year and 5-Year Capital Improvement Plans which provide for the construction of transportation facilities, improvements and services necessary to support the City's Transportation Systems Plan, the Bicycle and Pedestrian Master Plan and the Transit Master Plan.

City of Wilsonville Development Ordinance (Chapter 4 of the City Code, Updated 2011)

The City of Wilsonville Official Zoning Map (see Figure **4**) shows the type, location, and density of land development and redevelopment permitted in the future. The Planning and Land Development Ordinance (Chapter 4 of the City Code) implements the Comprehensive Plan by providing descriptions of zone designations, allowable uses within those zones, and development regulations. General descriptions for zone designations have been provided in Table 7 for comparison with the zoning identified in the zone map. There is an overlay zone for the Wilsonville Road Interchange Area Management Plan (IAMP), a Day Road design overlay district, an Old Town overlay zone and a Significant Resource overlay zone ordinance.

In terms of transportation planning, the Development Ordinance ("code") should also be consistent with requirements in Sections -0045 and -0060 in the Transportation Planning Rule (TPR). It is anticipated that the TSP update project will result in recommended amendments to development requirements, consistent with the project's findings and recommendations and state requirements. The following is an overview of code sections that pertain to the TPR requirements.

Circulation and connectivity – New development in the city, except single-family and two-family homes in residential zones and row houses and apartments in the Village zone, is subject to design review pursuant to Section 4.020. Design review plans are required to show access to the site as well as vehicle and pedestrian circulation within the site (Section 4.421). Circulation and connectivity are further supported by standards for streets, blocks, and pathways in Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements – Other).

Design standards – Sections 4.177 (Street Improvement Standards) and 4.178 (Sidewalk and Pathway Standards) establish general standards for streets, sidewalks, and pathways in addition to other criteria established for streets, blocks, and pathways in land divisions in Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements – Other). The code (Section 4.177.02) refers to the Transportation Systems Plan and the Public Works Standards for specific cross section design and dimensions.

Performance standards and conditions of development approval – The City code does not include specific mobility or performance standards. However, requirements for conditional

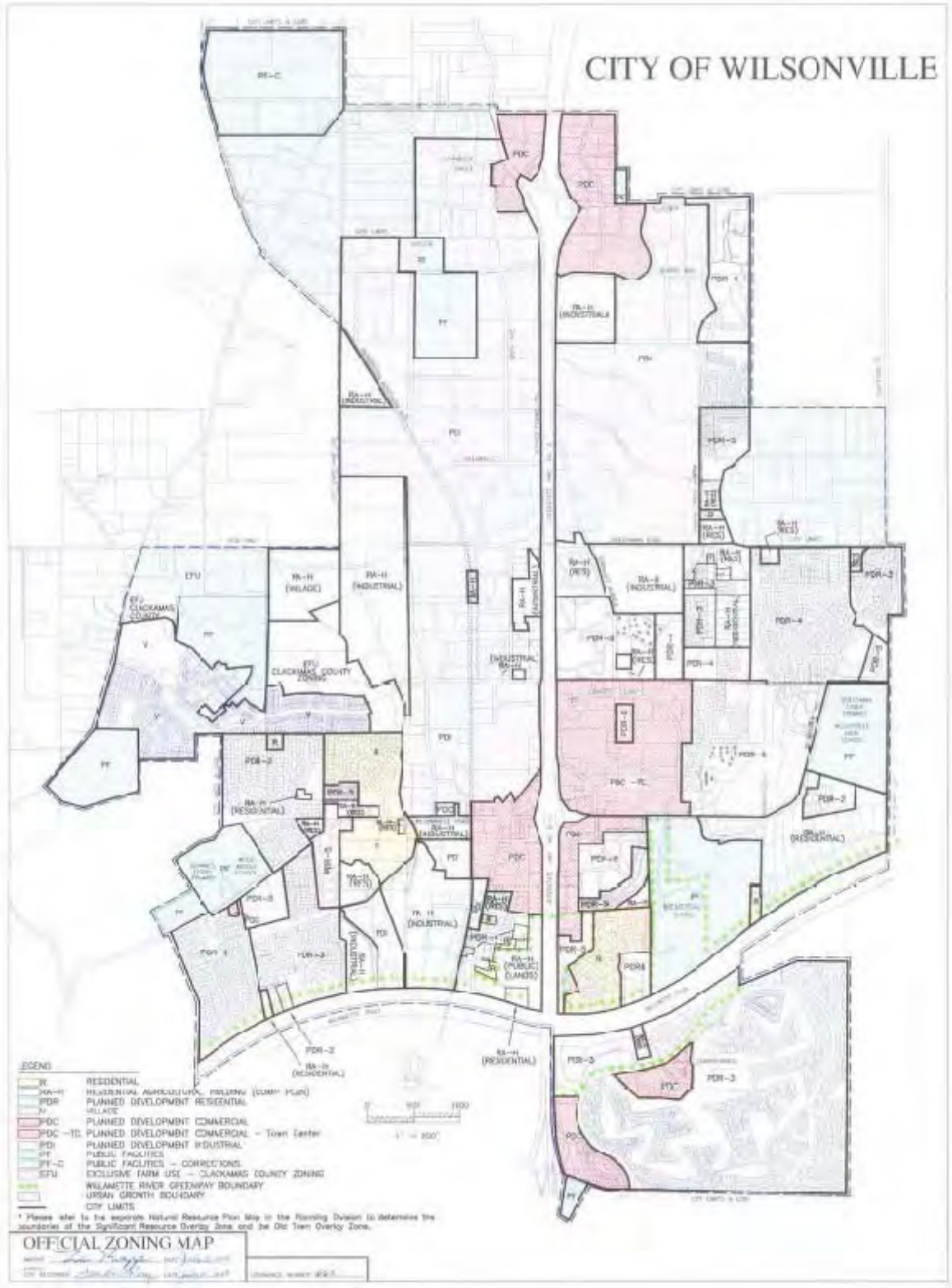
use permits (Section 4.184(.01)(A)(3)), zone changes (Sections 4.197(.01)(B)) and 4.197(.02)(D)), and comprehensive plan changes (Section 4.198(.01)(C)) specify that adequate public facilities must be available or consistency with State goals and regulations (including transportation) must be demonstrated for the proposed actions. Land division application procedures (Section 4.210(.01)(B)(26)) require that a traffic study be submitted as part of the tentative plat application.

Table 7: Wilsonville Zoning Designations

Zone Designations		Purpose of Zone	Common Uses
RA-H	Residential Agricultural H Holding	To serve as a holding zone to preserve the future urban level development potential as undeveloped property designated for more intensive development	● single family dwelling unit ● agriculture, horticulture, etc. ● timber growing, grazing ● small-scale livestock raising ● public parks, playgrounds
R	Residential	To provide for standards and a simplified review process for small-scale urban low and medium density residential development. This zone is not intended for planned development.	● single family dwelling units ● attached family dwelling units ● apartments ● public parks, playgrounds ● manufactured homes
PDR	Planned Development Residential	To provide for planned residential development	● open space ● single family dwelling units ● multiple family dwelling units ● public parks, playgrounds ● manufactured homes
PDC	Planned Development Commercial	The purpose of this zoning is to provide for planned commercial development	● retail business ● wholesale showrooms ● offices and clinics ● service establishments
PDC-TC	Planned Development Commercial (Town Center)	The purpose of this zoning is to permit and encourage a Town Center, adhering to planned commercial and planned development concepts.	● retail sales ● department stores ● shopping centers ● banking and investment ● multiple dwelling facilities ● public facilities complex ● office complex
PDI	Planned Development Industrial	The purpose of the PDI zone is to provide opportunities for a variety of industrial operations and associated uses	● warehouses, distribution ● assembly and packing ● manufacturing/processing ● office complexes ● call centers
PF	Public Facility	The PF zone is intended to be applied to existing public lands and facilities; including quasi-public lands that benefit the community and its citizens	● schools ● churches ● hospitals ● libraries ● parks, etc.
PF-C	Public Facility - Corrections	The PF-C zone is intended to be applied to lands acquired for the use and development of corrections facilities and related uses	● government service building ● prisons ● correctional facilities
V	Village	The Village (V) zone is applied to lands within the Residential Village Comprehensive Plan Map designation. It is applied in accordance with the Villebois Village Master	● single family dwellings ● accessory dwelling units ● duplexes

Zone Designations	Purpose of Zone	Common Uses
	Plan.	● row houses ● multi-family dwellings ● cluster housing ● residential facilities ● non-commercial parks, etc. ● commercial uses ● lifestyle and recreation ● service commercial ● general office ● neighborhood center commercial ● group living facility

Figure 4: City of Wilsonville Official Zoning Map



City code authorizes decision makers to apply conditions of approval depending on the estimated impacts of the proposed action. Applying conditions of approval is acknowledged and authorized in provisions for general administration (Section 4.015), conditional use permits (Section 4.184), zone changes (Section 4.197), comprehensive plan amendments (Section 4.198), and land divisions (Section 4.210 (.01)(C)(3)).

Pedestrian, transit, and bicycle amenities – Section 4.155 combines requirements for bicycle parking with requirements for motor vehicle parking. The section establishes the number of bicycle parking spaces required according to type of use. However, guidelines or standards for the location and design of the bicycle parking are not included, except for the specification that a percentage of bicycle parking at park-and-ride facilities and transit stations must be enclosed.

As cited above, improvement standards for streets, sidewalks, and pathways are established in Sections 4.177 (Street Improvement Standards), 4.178 (Sidewalk and Pathway Standards), 4.236 (General Requirements – Streets), and 4.237 (General Requirements – Other). Section 4.154 (Bicycle, Pedestrian and Transit Facilities) is intended to provide specific standards and guidelines for these facilities, but these provisions have been flagged as dependent on the TSP update process. The section currently reads: "Completion of Section 4.154 has been postponed pending the completion of the Transportation Systems Plan."

Significant transportation system impacts – There are assorted references to traffic studies and assessing impacts on public facilities in the City code. However, the code does not establish specific provisions for traffic impact studies or analyses, nor language about determining and addressing significant effects on the transportation system as prescribed in Section -0060 of the TPR. Sections 4.197 (Zone Changes and Amendments To This Code – Procedures) and 4.198 (Comprehensive Plan Changes - Adoption by the City Council) are sections where such language could be incorporated.

Coordination with other agencies – There are very general references to coordination with other agencies when considering development and land division applications. Section 4.035(.01)(B) calls for determination of affected agencies when reviewing site development permit applications. Section 4.210(.01)(C) requires that the Development Review Board consider the reports of other agencies in reviewing land division applications. There is the opportunity in these sections as well as Sections 4.035(.02) and 4.035(.03) addressing Class I and Class II administrative review, Section 4.184 (conditional use permits), Section 4.197 (zone changes), Section 4.198 (comprehensive plan amendments), and Section 4.210 (.01)(C)(3) (land divisions) to add more specific provisions about notice requirements and coordinated application review with ODOT when a proposal potentially impacts a state roadway.

City of Wilsonville Capital Improvement Plan (Adopted Budget FY 2010-11)

The following Capital Improvement Plan (CIP) projects have bearing on the Wilsonville TSP Update and are budgeted for FY 2010-2011:

Motor Vehicle Projects:

- Wilsonville Road Interchange Turn Lane Improvements - $8,570,000 (total project cost $18.5 million)
- Kinsman Road Extension - $929,850 (total project cost $18.5 million)
- 95th At Boones Ferry Road - $2,314,000 (total project cost $3.1 million)
- Villebois SDC Credits - $112,000 (total project cost $850,128)
- Barber Street – Kinsman to Coffee Lake Drive - $516,410 (total project cost $12.3 million)
- Grahams Ferry Phase I Right of Way - $57,000 (total project cost $617,534)
- Barber Street Phase II – Boberg to Boones Ferry $500,000 (total project cost $1.3 million)
- Grahams Ferry Road – Villebois -$433,200 (total project cost $2.8 million)
- Boones Ferry Road – Wilsonville Road to 5th - $326,000 (total project cost $4.3 million)
- Tooze Road – 110th to Grahams Ferry - $909,440 (total project cost $9.1 million)
- Villebois School Site Development - $855,000 (total project cost $931,598)
- Kinsman Road @ Wilsonville Road SDC Credit - $342,000 (total project cost $430,657)
- Willamette Way East @ Wilsonville Road Signal Upgrade - $10,000 (total project cost $21,140)

Streetscape/Bikeway Projects:

- Town Center Bike/Pedestrian Connection - $85,500 (total project cost $151,335)

Transit Projects:

- SMART Ops Facility - $22,800 (total project cost $10.2 million)

Parks Projects:

- Memorial Park Trails Plan/Map/Signage - $35,340 (total project cost $149,809)
- Villebois Parks SDC Reimbursement – Palermo Park - $191,520 (total project cost $294,344)
- Montebello Park - $34,200 (total project cost $541,694)
- Skate Park – Site Selection - $34,200 (total project cost $104,516)
- Villebois Park Improvements – Promenade - $2,280 (total project cost $239,744)

- Villebois Parks SDC Reimbursement – Piazza - $2,280 (total project cost $235,222)
- Boeckman Creek Trail - $96,900 (total project cost $116,964)
- Memorial Park Ball Field Improvements - $228,000 (total project cost $456,000)
- Advance Road Sports Field - $17,100 (total project cost $725,177)
- Memorial Park Trails - $302,100 (total project cost $658,897)

I-5/Wilsonville Freeway Access Study (2002)

This study, prepared by DKS Associates, first documented capacity deficiencies and extensive motor vehicle queuing in the Wilsonville Road/I-5 interchange area. The study indicated that conditions were expected to worsen in the future. Analysis performed by the City had considered a new interchange access to I-5 at Boeckman Road as an option to mitigate future capacity needs. A concern with this option was the adequate spacing of interchanges on I-5 and performance. Both ODOT and Federal Highway Administration (FHWA) have specific standards and guidelines that determine the applicability of any improved or additional access to interstate freeways. Approval of any new access to I-5 would require approval by both the FHWA and ODOT. The most fundamental requirement is that any new interchange does not have a significant adverse impact on the safety and operation of the interstate facility.

The results of this study indicated that there would be a future deficiency for freeway access capacity in Wilsonville by 2020. Improvements were identified to address this deficiency. These include an improved local street system in Wilsonville, freeway access improvements, and I-5 operational improvements. It was found that improvements to the Wilsonville Road interchange would be necessary with either interchange alternative. Based in part upon the findings of the study, the subsequent 2009 IAMP recommended the enhanced Wilsonville Road diamond interchange as the preferred option that meets future 2020 needs. Implementation of the enhanced Wilsonville Road diamond interchange can effectively be developed in phases or as a combined project depending upon funding availability.

City of Wilsonville Land Use Inventory

The City of Wilsonville's Land Use Inventory is kept up to date through tracking development activity and updating the City's GIS system. Updates are provided to Metro and other regional partners on a quarterly basis and as requested.

City of Wilsonville Goal 5 Inventory and Program (2000-2001)

In September 1999 the City initiated a process to inventory natural resources and develop regulatory mechanisms for their conservation. The ensuing process involved the Wilsonville community in an examination of natural resource locations, quantity and quality, and the various levels of regulatory requirements necessary to protect these areas.

The Goal 5 inventory included all wetlands, riparian corridors and wildlife habitat (Goal 5 resource categories) inside the urban growth boundary and the proposed urban reserve areas. All of these resources were summarized in resource maps. Using an ESEE (economic, social, environmental and energy) analysis, and also considering the Metro Title 3 program for fish and wildlife, a significant resource overlay zone was developed.

A Significant Resources Overlay Zone (SROZ) map was produced showing the Significant Resource (SR) areas for the City of Wilsonville. The boundaries were determined through an iterative process that involved mapping all inventoried resources, and making decisions about the outer SR boundary for all areas, including those with several nested resources. Conflicting uses were identified that might affect each of the Goal 5 resources. An impact area was determined and mapped consisting of a twenty-five foot wide zone extending from the outer edge of the S R boundary.

The SROZ regulations apply to the portion of any lot or development site which is within a SR overlay and its associated impact area. Any regulated activity proposed in a SR or impact area will require the preparation and submittal of a Site Resource Impact Report complying with code requirements. A limited amount of encroachment into the SR or impact area can be approved, based on code review criteria. Mitigation for approved impacts is required, based on formulae in the code. The City of Wilsonville SROZ map should be considered when proposing any new transportation projects.

City of Wilsonville Bicycle and Pedestrian Master Plan (2006)

This plan was developed from 2004 to 2006 simultaneously with the City's Parks and Recreation and Transit Master Plans. The vision of the Master Plan is for Wilsonville residents to be able to easily and safely access a variety of parks and natural areas from neighborhoods; walk or bicycle to parks, schools, commercial areas, employment centers, and transit stops; and take transit to parks, other Wilsonville destinations, and neighboring communities. Throughout the planning process, the community expressed key priorities, including:

- Improving access to and across the Willamette River;
- Providing a comprehensive system of bikeways and walkways;
- Developing a pool and aquatic center;
- Serving and connecting underserved neighborhoods; and
- Providing park and natural area experiences close to home and work.

Most community walkways and bikeways in Wilsonville are either off-street shared use paths or separate facilities (i.e. a sidewalk or walkway for pedestrians and on-street bike lanes for bicyclists). However, some community pathways and bikeways follow neighborhood streets, in which case pedestrians are accommodated with a sidewalk or shared use path and bicyclists share the roadway with vehicles. The majority of proposed community pathways and bikeways are on arterial and collector streets and will be implemented if and when the roadway is widened or improved. In addition, the Master Plan includes the following key recommendations:

- **Willamette River Crossing:** The river serves as a barrier to destinations to the south and a dedicated bicycle and pedestrian crossing would increase the comfort level and safety for all users.
- **I-5 Crossing:** The presence of the freeway greatly decreases the connectivity between east and west Wilsonville, channeling all travelers regardless of mode to one of four crossings. Improving the crossings, and creating new crossing opportunities, would encourage more people to bike and walk
- **Wayfinding/Signing Program:** A signage system for destinations (landmarks, natural features, etc.) is a key component of a navigable environment that would enhance the identity of Wilsonville.
- **Safe Routes to School:** Encourage and educate students on the best and safest ways to get to school by walking or bicycling.
- **Non-Motorized Transportation Coordinator:** Establish a position within the City to oversee implementation, education, and outreach regarding walking, bicycling and transit use.
- **Charbonneau Pedestrian Path:** Complete the pedestrian path around French Prairie Loop and upgrade it to benefit all residents and visitors.
- **Tonquin Trail:** A regional shared use trail that will connect Tualatin and Sherwood with Wilsonville. It passes through the Coffee Creek Wetlands, Villebois, and the Graham Oaks Natural Area.
- **Boeckman Creek Trail:** A regional shred use trail that will provide off-street north-south access on the east side of Wilsonville. It will connect parks, schools, neighborhoods, shops and employment centers.

City of Wilsonville Parks and Recreation Master Plan (2007)

Based on community input and through extensive public outreach, the City developed the following vision for Wilsonville's park system:

> The City envisions a comprehensive and interrelated system of parks, recreation, and natural areas, that:
>
> - Offers a range of experiences, including active and passive recreation, for all ages and abilities;
> - Contributes to a healthy and livable community;
> - Conserves and educates about the natural environment; and
> - Promotes community connectivity by linking parks, recreation facilities, schools, and other key community centers by trails, pathways, and public transit.

This vision provides the foundation for all policies, recommendations, and guidelines in the Plan.

The Plan proposes over sixty-five ($65) million dollars in capital expenditures over the next 20-years. The following is a break-down of expenditures by park type:

- Regional Parks – 8% of total cost (over $5 million)
- Community Parks – 45% of total cost (over $29 million)
- Neighborhood Parks – 15% of the total cost (just under $10 million)
- Multi-Purpose Recreation/Aquatic Center – 31% of the total cost (over $20 million)
- System Wide Improvements – 1% of the total costs (just under $500K)

This TSP Update will consider this park plan, especially as bicycle and pedestrian connectivity in Wilsonville is evaluated. Projects which provide bicycle and pedestrian access to the City's park system will likely become higher priority projects than those that do not provide that access.

City of Wilsonville Economic Opportunities Analysis Report (2008)

The Economic Opportunity Analysis (EOA) is consistent with the rules and requirements of Oregon Land Use Planning Goal 9 (Economy), OAR 660-009-0015, and the "Industrial and Other Employment Lands Analysis Guidebook" (2005) and is intended to establish a clear economic development direction for Wilsonville consistent with local, regional, and state market trends and planning policies.

Key short-term economic development recommendations include:

- Working with existing businesses to help them expand, as appropriate, on site in Wilsonville.
- Continuing to invest in the local commercial centers located east and west of I-5 on Wilsonville Road by enhancing amenities (such as parks and wireless internet access).
- Undertaking a proactive marketing strategy aimed at further defining, enhancing, and attracting existing high-growth industry clusters.
- Completing and adopting the Master Plan for Coffee Creek I (south of Day Road) and Concept Plan for Coffee Creek II (north of Day Road). The team also has identified potential areas within Coffee Creek I that are potential industrial site certification candidates under the Oregon Economic and Community Development Department's Industrial Site Certification Program.

Long-term strategies should include planning for new industrial sites within future master-planned employment districts in the Coffee Creek Industrial Master Plan Area, and additional urban expansion for industrial and mixed-employment development in the Metro-designated industrial areas to the north of Day Road.

Transportation infrastructure will be critical in the effort to attract more businesses to the City and, based on the report, development of the Coffee Creek area will be a high priority area in the City. The City's economic development strategies will inform the TSP Update to ensure that the planned infrastructure will support the planned land uses.

Coffee Creek Master Plan and Appendices (2007)

The Coffee Creek Industrial Area includes a Master Plan for 216 +/- gross acres south of Day Road. The Master Plan area is "sandwiched" between City of Wilsonville municipal boundaries. It is primarily located in unincorporated Washington County, with a small triangle (south of Clutter Road) located in unincorporated Clackamas County. The Master Plan area is generally bounded by the Coffee Creek Correctional Facility and Day Road on the north, the Portland and Western Railroad to the west and south, and the existing city limits to the east.

Key features of the Master Plan (as it pertains to transportation) for the area south of Day Road is summarized as follows:

- Primary access is planned from I-5/Elligsen Road via SW Boones Ferry Road and Day Road. Access will also be provided via Grahams Ferry Road, Ridder Road, and the planned Kinsman Road. Transit routes are located within a ½ miles walk of the Master Plan area, with bus stops located near Commerce Circle/95th Avenue.

The Draft Recommended Master Plan shows the existing and proposed street, trail, access and walkway systems and will be considered in developing these elements of the TSP Update.

Villebois Master Plan and Appendices (2010)

The Villebois Village Master Plan affects an estimated 480-acre area. It incorporates the guiding design principles that were adopted in the Villebois Village Concept Plan. The guiding principles pertaining to transportation are listed below:

> ***Connectivity:*** *Refers to a series of physical connections created within the village that also fosters other "connections," such as the link between land use and transportation, as well as a sense of place and a sense of community.*
>
> ***Diversity:*** *Refers to Villebois' commitment to providing a community that offers many options and choices for those who live, work and play there.*

The circulation system proposed in the Villebois Village is designed to reflect the principles of smart growth that encourage alternatives to the automobile while accommodating all travel modes, including passenger cars, trucks, buses, bicycles and pedestrians. Accordingly, there is a system of public and private streets and trails that will connect users of the various modes to the major activities inside and outside the community. All public streets are connected without dead-ends or cul-de-sacs, except in those rare cases where required by topography or natural features.

The document summarizes differences between the Villebois Master Plan and the City's currently adopted (2003) TSP. The following differences should be considered in this TSP Update:

- The *Villebois Village Master Plan* Arterial and Collector street system and bicycle/pedestrian system should be included in this TSP Update.
- The *Villebois Village Master Plan* includes alternative street sections that should be included in this TSP Update:
    - On-street parking on Major Collector and Minor Collector
    - Increase planter to 8' and median to 15' on Major Collector, which increases right-of-way to 65' and curb-to-curb to 92'
    - Increase planter to 7 ½' and stripe parking and bike lane on Residential Street, which increases curb-to-curb and right-of-way widths
    - Increase sidewalk widths on Residential Streets and increase planter strip widths on Residential Streets
    - Reduce curb-to-curb widths to 20' and now allow parking on Residential Streets
- Curb extensions may be utilized within the Villebois Village under guiding principles listed in the plan. Placement of curb extensions shall be reviewed through the City's minor alteration process with Specific Area Plans.
- Street and pathway alignments shall be demonstrated to be in compliance with Significant Resource Overlay Zone (SROZ) regulations with Specific Area Plans. In addition, the TSP Update should consider the *Villebois Village Master Plan* when updating these alignments.
- The TSP Update should reflect that pedestrian and bicycle connectivity shall be provided between Villebois Village public and private street terminations points and adjacent trails/pathways at the discretion of the City Engineer.
- Along Villebois Drive between Ravenna Loop and Barber Street is where the "bicycle boulevard" street section will be located. The TSP Update should allow for specific design details outlined in the *Villebois Village Master Plan*.

City of Wilsonville Street Tree Guide (1998)

This document provides a summary of the various neighborhoods in town and what types of trees currently exist in those neighborhoods. It provides information about the types and variety of trees that are desired for a healthy urban forest. This guide has more relevance to the design phase on roadway projects than the TSP Update.

Frog Pond Area

The area generally described as "Frog Pond" is located north of Boeckman Road, west of Stafford Road, south of Frog Pond Lane and east of Boeckman Creek. The area lies within the current urban growth boundary, and some preliminary master plans have been developed, but none of these have yet been adopted by the City. It is expected that approximately 1,000 residential dwelling units could be accommodated in this area.

Basalt Creek Intergovernmental Agreement

An intergovernmental agreement has been signed between Metro, Washington County and the Cities of Wilsonville and Tualatin, for concept planning the urban growth boundary expansion areas known as "Basalt Creek" and "West Railroad" planning areas. Basalt Creek

consists of approximately 595 acres located generally north of Day Road and the Coffee Creek Correctional Facility, south of Helenius and Norwood Roads in Tualatin. The West Railroad area includes approximately 180 acres west of the Coffee Creek Correctional Facility and Planning Area.

The agreement indicates that the cities will take primary responsibility for concept planning the areas in cooperation with the County and Metro. Through the process a future city limit boundary will be jointly agreed upon and the final Basalt Creek Concept plan will be incorporated into each city's comprehensive plan and transportation plan.

In addition, the cities shall incorporate into their amended plans and regulations reasonable measures to identify and assist in the protection of the approved major transportation facility corridors from development encroachment in order to implement the final Basalt Creek Concept Plan. The parties acknowledge that construction of some new roadway facilities may be subject to the conditions set forth in the RTP relative to the proposed I-5 to 99W Connector.

Aurora Airport Expansion

The Aurora State Airport is currently updating its master plan. The airport is outside Wilsonville's planning area, however, residents are concerned that noise and traffic impacts be addressed. The master plan process will be monitored as part of this TSP update to determine whether there are any transportation related issues that need to be addressed in Wilsonville.

Clackamas County Comprehensive Plan, Chapter 5 – Transportation

The Comprehensive Plan for Clackamas County acts as a guide for future growth and development in unincorporated areas of the county, outside of city limits, through the formation of goals and policies that respond to current and future needs over a 20-year planning period. Goals and policies pertaining to land use are implemented through zoning ordinances that are used to define various land use designations and create zone maps for the county identifying where these land use designations will be applied. Because Clackamas County zoning applies to unincorporated areas outside the project area and does not regulate growth and development within the City of Wilsonville, county-zoned land does not directly impact the immediate project vicinity. County zoning has been incorporated into regional transportation models used to develop forecasts for the TSP.

The Transportation chapter focuses on developing a transportation system that meets the needs of Clackamas County residents, while also considering regional and state needs at the same time. The plan addresses a balanced transportation system that includes automobile, bicycle, rail, transit, air, pedestrian and pipelines and reflects existing land use plans, policies and regulations that affect the transportation system. The Clackamas County TSP implements these goals and policies and provides a Capital Improvement Plan to address deficiencies. Recommendations that result from the TSP Update, such as those pertaining to County

facilities or to transportation-related coordination between the City and the County, may necessitate an update to the County's Comprehensive Plan so that both jurisdictions' policy documents are consistent with each other.

Clackamas County Zoning and Development Ordinance (ZDO)

The ordinance is enacted to implement the goals and policies of the County Comprehensive Plan and to provide methods of administration and enforcement of the provisions described. Clackamas County zoning pertains to unincorporated areas of the county. In the City of Wilsonville, the City of Wilsonville's zoning would apply.

Clackamas County Transportation System Plan (Amended 2011)

Chapter 5 of the Clackamas County Comprehensive Plan is the transportation element of the plan and is the County's adopted Transportation Systems Plan (TSP). Chapter 5 lists the County transportation polices, standards, and identified projects. It focuses primarily on the County's responsibilities, though recognizes that the State and various cities own and maintain roads within the County.

Specific elements of the TSP that pertain to Wilsonville follow:

Transportation System Plan 20 Year Projects, Urban or Rural:

- 65th Avenue/Elligsen/Stafford Road – Realign Elligsen Road to south, install northbound right turn and southbound left turn lane at new Stafford Road/Elligsen Road intersection

Functional Classification, Urban or Rural:

- Major Arterial
  - Stafford Road/Wilsonville Road
- Minor Arterial
  - Advance Road (east of City Limits)
  - Brown Road/110thAvenue/Boeckman Road
- Collector
  - Boeckman Road
  - 65th Avenue (north of Elligsen Road)
  - Homesteader Road (east of City Limits)
  - Town Center Loop West
  - Parkway Avenue
  - Graham's Ferry Road

Regional Street Design Type:

- Regional Street
  - Stafford Road/Wilsonville Road
  - Boeckman Road/Advance Road
  - Homesteader Road (east of City Limits)

Scenic Roads:

- Wilsonville Road (west of City Limits)

Rural Area Transit Routes & Designated Transit Center:

- Local Transit District Route
  - I-5
- Existing Park & Ride Site
  - Town Center Loop
- Planned Bikeway Network:
  - Proposed Bikeways
    - Stafford Road/Wilsonville Road
    - Homesteader Road (east of City Limits)
    - Boeckman Road/Advance Road (east of City Limits)
    - Parkway Avenue
    - Town Center Loop
    - Brown Road/110th Avenue/Boeckman Road/Tooze Road (west of City Limits)
    - Graham's Ferry Road

To the extent that the TSP Update includes recommendations that pertain to County facilities, the County's TSP may need to be amended to maintain consistency between the jurisdictions' long-range plans.

Clackamas County Capital Improvement Plan

The most recent Clackamas County CIP was developed in 2006 and includes a 5 Year Program (Fiscal Year 2006/07 to 2010/11) and a 20 Year Plan (2006 to 2026). No projects, in or near Wilsonville, were identified in the 5 Year Program. The following projects, in or near Wilsonville, were identified in the 20 Year Plan:

Near Term Needs:

- Stafford Road – Reconstruct and widen between Boeckman Road (Advance Road) and Newland Road ($8,234,000)

Intermediate Term Needs:

- 65th Avenue/Elligsen Road/Stafford Road – Realign Elligsen Road to south, install northbound left-turn lane, southbound right-turn lane at new Stafford Road/Elligsen Road intersection ($4,188,300 – construction & right-of-way)

Long Term Needs:

- Wilsonville Road – reconstruct to modern standards, safety improvements between Wilsonville City Limits and Yamhill County Line (cost to be determined)

Clackamas County ITS Plan Update

The Clackamas County ITS Plan Update identified the following projects in or near Wilsonville:

Completed ITS Projects (2003-2011):

- Connect City of Wilsonville to Regional Fiber Network via Wilsonville Road – 2011/12 Broadband Innovation Initiative

Proposed Implementation Projects (Medium Priority):

- Wilsonville Road Adaptive Signal Timing – Deploy adaptive signal timing that adjusts signal timings to match real-time traffic conditions (Capital Costs - $850,000, Operating & Maintenance Costs - $20,000)
- Wilsonville Road – Brown Road to Town Center Loop East – Install video monitoring cameras and vehicle detection equipment to provide turn movement counts, hourly volumes, travel times and speed (Capital Costs - $700,000, Operating & Maintenance Costs - $21,000)
- Elligsen Road – Day Road to Canyon Creek Road - Install video monitoring cameras and vehicle detection equipment to provide turn movement counts, hourly volumes, travel times and speed (Capital Costs - $500,000, Operating & Maintenance Costs - $15,000)
- P&W Railroad Crossings in Milwaukie and Wilsonville – Detect an approaching train and provide advance information to emergency management personnel and travelers to allow them to make an informed decision about route choice (total Capital Costs - $360,000, Operating & Maintenance Costs - $14,000)

Proposed Implementation Projects (Low Priority):

- I-5/I-205/Stafford Road ICM – Integrate traffic surveillance and traffic control equipment with ODOT for key routes in Clackamas County (Capital Costs - $750,000, Operating & Maintenance Costs - $20,000)

Supporting Projects (Medium Priority):

- Connect City of Wilsonville to Regional Fiber Network – Install a fiber optic cable connection between ODOT's fiber on I-5 and the City of Wilsonville's engineering offices on Elligsen Road (Capital Costs - $650,000, Operating & Maintenance Costs - $18,000)

Washington County Comprehensive Plan

The Washington County Comprehensive Plan is comprised of several elements, including the following:

- County Resource Document
- Comprehensive Framework Plan for the Urban Area
- Rural/Natural Resource Plan, which includes the Exceptions Statement Document

- Community Plans and their Background Documents
- Community Development Code
- Unified Capital Improvements Program, including the Transportation Capital Improvement Program
- Urban Planning Area Agreements
- Washington County 2020 Transportation Plan

The portion of Wilsonville that is located in Washington County does not fall within one of the County's community plans. The Transportation Capital Improvement Program and Washington County 2020 Transportation Plan would pertain to this area of Wilsonville and are discussed below.

Washington County Capital Improvement Program

The Washington County 2010-11 Adopted Budget was reviewed for Transportation Capital Projects. The only project that pertains to Wilsonville is the following:

- I-5-99W Connector (MSTIP 3 – Ongoing)

Washington County 2020 Transportation Plan (2003)

The Transportation Plan supports the adopted development patterns in the community plans, the Rural/Natural Resource Plan, and city comprehensive plans. The Transportation Plan also implements the applicable policies and strategies of the community plans and the Rural/Natural Resource Plan. The Transportation Plan also addresses provisions of the Regional Transportation Plan and the state Transportation Planning Rule.

The Transportation Plan is a comprehensive analysis and identification of transportation needs associated with the development patterns described in the community plans and the Rural/Natural Resource Plan. Prepared from both the county-wide and community planning area perspectives, the Transportation Plan addresses the major roadway system (i.e., non-local roadways), transit, pedestrian and bicycle transportation issues and focuses on specific and system requirements. Existing a future roads and streets that are part of the major roadway system are provided a classification in the Transportation Plan indicative of their existing or planned function, right-of-way, alignment and structural dimensional standards. The local street system is designated on the community plans and the Rural/Natural Resource Plan, which are best suited for addressing the local street system.

The following Wilsonville Roads are classified in the Washington County TSP:

- I-5 (Freeway)
- Boones Ferry Road (Arterial)
- Elligsen Road (Arterial)
- 65th Avenue (Arterial)
- Day Street (Arterial)
- Ridder Road (Collector)
- Grahams Ferry Road (north of Day Street – Arterial)

- Grahams Ferry Road (south of Day Street – Collector)
- Tonquin Road (Arterial)

The following area is identified as a study area in the Washington County TSP:

- I-5 to HWY 99W Connector Study Area

Countywide Road System (Long term, these roadways are proposed to be under County jurisdiction):

- Boones Ferry Road
- Day Road
- Graham's Ferry Road
- Tonquin Road (north of City Limits)

To the extent that the TSP Update includes recommendations that pertain to County facilities, the County's TSP may need to be amended to maintain consistency between the jurisdictions' long-range plans.

Appendix B

EXISTING FUNDING (DKS, 2012)

TECHNICAL MEMORANDUM #2

117 Commercial Street NE
Suite 310
Salem, OR 97301
503.391.8773
www.dksassociates.com

DATE: November 13, 2012

TO: Project Management Team

FROM: Scott Mansur, P.E.; Carl Springer, P.E.; Brad Coy, P.E., DKS Associates

SUBJECT: **Wilsonville Transportation System Plan Update – Existing Funding (Task 2.2)** P10086-007

This memorandum provides existing transportation-related funding information for the City of Wilsonville and is part of the Wilsonville Transportation System Plan (TSP) Update. Two of the primary sources of financial information are the City's annual budget document[1] and its five-year forecast.[2] This memorandum summarizes the City's transportation-related fiscal management policies, funding sources, and funding outlook.

Fiscal Management Policies

The City of Wilsonville has developed fiscal management policies to be used as guidelines for City decision makers to ensure the City's fiscal stability. These policies are documented in the City's annual budget document.[3] Table A in the appendix lists the policies that are applicable to transportation funding and identifies the City's current practices. It also identifies how the TSP Update will adhere to and promote the City's policies. This table will be used as a future resource when evaluating TSP projects and identifying funding options.

Funding Sources

The City of Wilsonville uses multiple funding sources to pay for the construction, operation, and maintenance of its transportation infrastructure and services. The City's funding choices reflect its desire to set taxes, fees, and charges so that those who directly benefit from a service pay for it. In addition, the City seeks to fund ongoing expenses using ongoing revenues and one-time expenses using one-time revenues. Table B in the appendix lists the transportation expenditures within the City of Wilsonville and identifies how these expenditures are funded. In general, the City observes the following practices:

- Improvements driven by new development are principally paid for using transportation system development charges (SDCs) and developer contributions.

---

[1] City of Wilsonville Adopted Budget FY 2011-12
[2] City of Wilsonville Five-Year Forecast 2011-12 to 2015-16
[3] City of Wilsonville Adopted Budget FY 2011-12, pgs. 300-310.

- Improvements made to reduce blight and attract development within the City's Urban Renewal Districts (URDs) are paid for by the corresponding district (i.e., Year 2000 Plan or West Side Plan).
- Other improvements undertaken by the City are paid for using a combination of various City funds depending on project components (e.g., maintenance, operations, capital improvements, etc.).
- Street light installation, operations, and maintenance costs are paid for by the Street Lighting Fund (except when they are installed using developer, URD, or SDC funds). This fund receives revenue from a utility fee.
- Transit costs are paid for by the Transit Fund, which primarily receives revenue from payroll taxes.
- Pedestrian and bicycle facilities are constructed as part of roadway projects or paid for using Park SDS funds.
- Staff time (i.e., planning, engineering, and other administration) and supply costs are paid for through the Community Development Fund, which receives transfers from other revenue sources depending on the type of project staff works on.

Funding Outlook

The funding outlook for each of the City's transportation-related expenditures is based on an evaluation of past experience, current needs, and future projections. Additional financial analysis that should be considered in the TSP update as part of the alternatives analysis is also identified. The transportation expenditures include transit, pedestrian and bicycle, roadway operations, roadway maintenance, street lights, overhead, and roadway capital improvement projects.

Transit

The Transit Fund has a consistent revenue source (i.e., payroll tax) to fund ongoing operations (and related maintenance, service, etc.). Depending on what future course of the economy, the payroll tax (along with grants, which have been obtained in the past but are becoming less promising in this economic and political environment) may or may not be able to fund some of the significant upcoming transit-related needs, which include:

- Bus replacements
- Potential increases in the City's contribution to TriMet to fund WES (current agreement ends in 2014 and it is very likely that the current $300,000 per year contribution could increase significantly).
- Phase II of the SMART fleet operations center
- Service expansion into new development areas (such as Coffee Creek, Villebois, and Frog Pond)

It is possible that to fund these needs before they become overly-critical, the City's transit department may need to enact some modest cuts and streamlining of existing programs. The City needs to ensure they are not caught off guard by an increased contribution to TriMet for WES starting in 2014 or by overdue bus replacements (and the associated maintenance expense). Therefore, the following additional financial needs should be identified when performing the TSP alternatives analysis:

- City's estimated new contribution to TriMet to fund WES (using the methodology identified in the current agreement)
- Bus replacement plan
- Funding options to pay for new transit operating capital (new buses, stops, etc.) in order to expand into new development areas as they are constructed

Pedestrian and Bicycle

The City of Wilsonville currently does not have any funding sources that they specifically set aside for pedestrian and bicycle improvements. Instead, most of the pedestrian and bicycle infrastructure in the City (e.g., sidewalks, bike lanes, and multi-use trails) is constructed as part of roadway projects using transportation SDC and URD funds. In addition, some portions of multi-use trails (particularly through park or greenway areas) have been constructed using money collected from park SDCs. If the City determines that there are particular pedestrian and bicycle system needs that they won't be able to fund under this current arrangement, then additional funding sources should be considered. This assessment will be performed once specific project recommendations are identified.

It is anticipated that the Safe Routes to School program being developed as part of the TSP (particularly the pedestrian and bicycle infrastructure infill needs) will be funded using grants. Other funding sources will be considered once specific recommendations are evaluated.

Roadway Operations

The City of Wilsonville pays for ongoing roadway operations and minor street repairs through the Road Operating Fund. Expenses include maintenance of rights-of-way, streets, and traffic control devices. Some specific needs are cleaning, repair, or replacement of signal lights, striping, curbs, gutters, and potholes. The Road Operating Fund also contributes to transportation-related overhead (e.g., planning, engineering, and other administration), other general City overhead (e.g., legal, finance, human resources, etc.), and capital projects as funds are needed and available.

The Road Operating Fund's primarily revenue source is the City's disbursement of State gas tax receipts. It also includes a small allocation of the Washington County gasoline tax. Prior to Fiscal Year 2009-10, the City was experiencing declining gas tax disbursements from the State. However, the State has been phasing in a six-cent gas tax (from 24 cents to 30 cents), which has resulted in a slight rebound in gas tax receipts by the City. Because an overall reduction in gas

usage is expected over time, it is likely that after a few more years of modest increases, State gas tax receipts will again begin to decline or maintain a steady level.

As the City continues to add more roads and street landscaping, it will becoming increasingly important for the City's disbursement of State gas tax receipts to be dedicated to operating costs. Through the TSP horizon year, gas tax receipts are expected to adequately cover operating expenses and related overhead but not be available to help fund other transportation needs.

Roadway Maintenance

The City of Wilsonville currently has a street maintenance program that provides slurry seals, overlays, and/or reconstruction of all roads throughout the City on a six-year rotation cycle. The current average cost of this program is approximately $630,000 per year. The City's adopted budget document from Fiscal Year 2010-11 included a figure showing the Street Maintenance Program rotation between 2001 and 2009. This figure is provided in the appendix.

The City collects money specifically for this program through its Road Maintenance Regulatory Fund, which was created in Fiscal Year 1997-98. The collection is performed through road maintenance fees charged to residential, commercial, and industrial customers on their monthly utility bills. Residential customers are charged a monthly fee of $4.03 per household, while commercial and industrial customers' fees range between $10.46 and $285.88 per month and are based on a formula that considers traffic impact, building square-footage, and the amount of truck traffic generated by the site. The money that is collected is used exclusively for street overlays, repairs, and reconstruction. This revenue source will grow as the City grows, and it is expected to be adequate to maintain the condition of the City's roadway surfaces.

The use of the maintenance fee revenues is restricted to construction costs and cannot be used for other expenditures, including the related overhead costs (i.e., engineering and billing/collection services). Therefore, the maintenance-related overhead expenses are currently being paid for by other funds, particularly the Road Operating Fund (whose primary revenue source is the City's disbursement of State gas tax receipts). Due to other demands for the gas tax disbursements, an alternative funding method for the overhead costs should be considered. One option may be to revise the road maintenance fee program to allow it to fund overhead costs. Additional revisions to the street maintenance program that may be beneficial to consider include its expansion to cover the maintenance of sidewalks, street trees, and medians, which currently do not have specified funding sources.

Street Lights

When street lights are included with roadway improvement projects, they are paid for from the same project budget sources (e.g., developer contributions, SDC funds, URD funds, or grants). Otherwise, street light operations, maintenance, and infill are paid for throughout the City by

the Street Lighting Fund. This fund is one of the City's "Enterprise Funds," which account for the City utilities provided on a continuing basis to the general public and are structured to be self-supporting. Revenues for this fund are collected through user fees assessed to all City residences and businesses, with monthly charges ranging from $0.80 to $5.01. The fee is based on the cost of street lighting and takes into consideration the type of pole and light fixtures. Funds that are not spent on street light operations and maintenance are then available for street light infill projects. These fees have been sufficient for the past decade and are expected to continue to meet operating and maintenance needs, with some surplus funds each year that can help to slowly provide infill through the years. Should additional funds be needed in the future, then rates should be increased to ensure this fund continues to be self-supporting.

Overhead

Another important component of City project costs is the contribution towards the project overhead, which includes planning, engineering, and other administration (i.e., City staff and supplies). The City of Wilsonville includes internal charges for management of construction projects, with a large portion of these charges being accounted for as transfers to its Community Development Fund, which is used to pay for staff expenses of the City's Community Development Department.

The City also assesses each of its funds a portion of its general City overhead costs, which include administration, finance, information systems (i.e., computer network management), geographic information systems (GIS), legal, and human resources/risk management. These services are important for all City departments to operate effectively. The majority of these costs are paid for out of the City's General Fund, but each of the other funds also contributes varying amounts depending on the estimated proportionate share.

Roadway Capital Improvement Projects

The Streets Capital Projects Fund acts as the City's clearinghouse for capital project funds. Its cash inflows include intergovernmental sources (i.e., grants or funds provided by other agencies) as well as transfers from other City funds to cover applicable projects (or contributions to projects). When the Oregon Department of Transportation (ODOT) leads a project (for example, the I-5/Wilsonville Road Interchange and Barber/Kinsman Extensions), then the City's contribution is paid for out of the Streets Capital Projects Fund; however, funds provided by ODOT or Federal sources to ODOT-led projects are not routed through the City and so are not accounted for in this fund.

In the past, the City has primarily paid for its street improvement projects (and its share of ODOT and regional projects) using revenues obtained from the following funding sources:

- **Streets System Development Charges (SDCs)** are assessed on all new residential and commercial construction within the City. These funds can only be used to construct capacity-related transportation improvements. When the City is ready to use SDC funds

that have been collected, the funds are transferred to the Streets Capital Projects Fund and then used to pay for the project costs. In addition, up until Fiscal Year 2008-09, the City was also collecting a supplemental streets SDC that could only be used to fund the Wilsonville Road interchange project, which is currently being constructed. At the present, there is only one SDC fee charged to developers. Over the past 10 years, the City has collected an average of approximately $1.75 million per year in SDC funds. Assuming no fee change and similar growth trends through the year 2035, the City can expect to collect approximately $42 million, which would be available for capacity improvement projects throughout the City.

- **Developer contributions** usually consist of developer-managed and funded improvements, which are not spent by the City and therefore not specifically accounted for within the City's funds. However, when facilities are the contributed to the City and made public, the project costs are documented. Over the past 10 years, developers have spent approximately $1.06 million per year to construct public roadway and sidewalk improvements (this list is provided in the appendix). The majority of these improvements have occurred within Villebois or other large developments. In addition, on the recent Boones Ferry Road improvements between Wilsonville Road and SW 5th Street, the developer contributed a total of $1.8 million, which was provided to the City. Therefore, developer contributions over the past 10 years average approximately $1.25 million. Assuming similar contributions through the year 2035, the City can expect approximately $30 million in developer contributions, with the majority of these likely to occur in Villebois, other large development areas, or along project frontages.
- **East Side Urban Renewal District (Year 2000 Plan)** is expected to have sufficient funds to complete all of the previously identified projects. These projects include Canyon Creek South, Old Town Streets, and livability projects (including bicycle, pedestrian, and other projects) within the specified URD area. At one time, these projects were estimated to cost a combined total of $5.7 million.[4]
- **West Side Urban Renewal District (West Side Plan)** will need to increase its available debt limit to fund transportation projects critical to the development of Villebois and other nearby areas. Some key transportation projects to be funded by West Side Urban Renewal include the Kinsman Road extension (Barber Street to Boeckman Road), the Barber Street extension (Kinsman Road to Villebois), the Brown Road extension (which would provide a second route to connect Old Town to Wilsonville Road west of the railroad tracks), and Brown Road widening improvements.[5] The total expected contribution of this URD to roadway projects is estimated to be $27 million.

[4] URA Resolution 157
[5] City of Wilsonville website (9/25/11): http://www.ci.wilsonville.or.us/Index.aspx?page=149

- **State grants** are typically spent by ODOT and do not show up in the City's finances. A recent exception was the Boeckman Road extension, for which the City received $2.1 million from the State between Fiscal Years 2003-04 and 2006-07.
- **Federal grants** are typically provided to ODOT and do not show up in the City's finances.

Based on the past ten years of projects funded by Street SDCs, developer contributions, and the East Side Urban Renewal District, the City of Wilsonville may expect approximately $77.7 million to be available for future roadway improvement projects (including related overhead costs). After more development occurs within the West Side Urban Renewal District, then additional funds are also expected to be available for related west side improvements. In addition, State and Federal funding contributions can be expected for projects with regional significance.

Appendix

Fiscal Management Policies

Transportation Infrastructure Expenditures and Funding

Current City Funds

Potential New Funding Sources

Fiscal Management Policies

Table A: City of Wilsonville Fiscal Management Policies

Topic	Policy	Current Practices and TSP Implications
Capital Improvement Program	A five-year Capital Improvement Program (CIP) is to be incorporated into the City's Five-Year Strategic Financial Plan. The CIP lists future facilities and infrastructure construction projects and major repair and maintenance projects. Project details include a project description, estimated costs, sources of financing, performance measures, project timeline, and the project manager.	The TSP Update will identify transportation improvement projects that the City is expected to need through the year 2035. This will be a resource for City staff to use in preparing the CIP. Cost estimates will be prepared for each project and will include estimated design, construction, and operating costs.
Capital Improvement Projects	"The funding sources for each budgeted capital project (with a total cost exceeding $25,000) will be identified and all of the operating costs associated with a capital project will be quantified. Operating costs include ongoing maintenance costs, project management costs, administrative costs, etc."	
Capacity Needs Due to Growth and System Development Charges	"If a system's capacity needs to be expanded as a result of growth, the cost of the expansion should be borne by those causing the growth." "The City of Wilsonville will use SDC's rather than levying taxes and/or imposing service charges on all City residents to pay for additional service capacity. As a result, SDSs have been established that reflect the costs of providing roads [and other utilities] . . . needed to service additional increments of growth."	Developers construct half-street frontage improvements, pay system development charges (SDCs) to the City, and mitigate their proportionate share of traffic impacts by paying or constructing transportation improvements.
Other Developer Contributions	". . . the City also requires developers to contribute infrastructures by installing streets [and other utilities] . . . within their developments.	
Fee Rates	"Fee and charges should be reviewed on an annual basis to determine whether the fees being charged are adequate to cover the entire cost . . . of providing the service. Before fees and changes are adjusted, the City shall consider the current competitive market rates of other cities." "Where possible, fees and charges shall be set so that those who directly benefit for a service pay for it."	All residents and business in the City currently pay additional monthly utility fees that fund road maintenance and street lighting costs. Transit riders pay a small fee, while the bulk of transit-related expenses are covered by a payroll tax, which is based on the principle that businesses receive an indirect benefit from a well functioning transit system that can transport employees and patrons. If considered necessary, potential fee increases will be identified as part of the TSP Update.
Street Light Utility Rates	"Charges for providing . . . street lighting shall be sufficient to finance all operating, capital outlay, and debt service expenses . . . including contingency and reserve requirements. Projects funded with SDCs, urban renewal funds, general obligation bonds, or developer contributions shall be excluded from this requirement."	

Table A continued on next page.

(Continued) Table A: City of Wilsonville Fiscal Management Policies

Topic	Policy	Current Practices and TSP Implications
Local Improvement Districts (LIDs)	"When local improvement districts (LIDs) are established to fund capital projects, they must be self funding. Sufficient assessments and reserves should be established so that the entire cost of the debt (interest and principal) is covered." "The City will also assist in forming local improvement districts so the cost of improvements are assessed against the property that benefits from the improvement."	The TSP Update will consider local improvement districts as a potential financing alternative when appropriate. It will also consider dedicated revenue, one-time revenue sources, and diversification of revenue sources to ensure consistency with City policies.
Dedicated Revenue	"Dedicated revenue sources shall be used only for the purpose for which they are being collected."	
One-Time Revenue Sources	"One time revenue sources will not be used to fund ongoing activities of the City."	
Diversification of Revenue Sources	"The City shall diversify its revenue system to shelter its operations from over reliance on any one revenue source."	
Uses of Debt	"Debt shall not be used for operating purposes. No debt shall be in existence for longer than the useful life of the capital investment for which the debt was incurred." ". . . the City may issue revenue bonds for capital improvement projects in which revenues from SDCs and user charges will be used to pay the debt serviced on the bond."	Debt can be used as a means of financing projects, but either way, another revenue stream is needed (either to pay up front for the project or to pay off the debt).
Financing Alternatives	"All alternative financing possibilities shall be examined in addition to debt financing . . . Property owners that benefit from an improvement will be expected to share in the cost of the improvement and in the financing of such improvement."	As part of the recommended solutions analysis, the TSP Update will provide a menu of funding options and recommendations for consideration by the City.
Land Acquisition	"The City will consider opportunistic purchases of land to serve anticipated future needs." Part of the land acquisition approval process includes identifying "whether the land acquisition was contemplated by the appropriate master plan."	The TSP Update will identify which projects are expected to require land acquisitions.

Transportation Infrastructure Expenditures and Funding

Table B: City of Wilsonville Transportation Infrastructure Expenditures and Funding

Transportation Expenditure	Fund	Primary Revenues[a]
SMART transit service and programs, including planning, operations, fleet, and facilities (includes capital outlay)	Transit Fund	Payroll tax, user fees, intergovernmental revenues, tax credits, grants, etc.
Compressed natural gas (CNG) charging station at SMART facility		
City pedestrian facilities (sidewalks and path connections)	N/A	Included with associated roadway improvement project or site development (along project frontage or through site)
City bicycle facilities (bike lanes and local trails)		
Regional multi-use trails	N/A	Park SDC revenues have been used on portions of trails through City parks
Transportation Electrification	General Fund	Grants and other General Fund sources
Roadway operations and minor repairs (including signal lights, striping, curbs, gutters, and potholes)	Road Operating Fund	Gasoline tax (State disbursement)
Major street repairs, and reconstruction (including slurry seals, overlays, and reconstruction of existing roads)	Road Maintenance Regulatory Fund	Road maintenance fee (residential, commercial, and industrial customers pay in monthly utility bill; fee based on formula that considers traffic impact, SQFT, and truck traffic)
Roadway improvement for safety, circulation, or other need identified by the City	Streets Capital Projects Fund	Intergovernmental sources, transfers from other funds to cover applicable projects (i.e., operating and maintenance related needs); some projects may include contributions from Street SDCs or Urban Renewal funds
Roadway improvement to reduce blight and attract development (within either of the City's two Urban Renewal Districts)	Corresponding Urban Renewal District (i.e., Year 2000 Plan or West Side Plan) depending on location	Tax increment-based financing and repayment of debts (i.e., the additional taxes collected within the district that are considered to be associated with the improvements); may be contributed to Streets Capital Projects Fund as shared project revenue source

Table B continued on next page.

(Continued) Table B: City of Wilsonville Transportation Infrastructure Expenditures and Funding

Transportation Expenditure	Fund	Primary Revenues[a]
Roadway Capacity improvement due to new development	Streets Development Charges Fund or developer contributions	Transportation SDC fees paid by developers; fee schedule developed from estimated trip levels; may be contributed to Streets Capital Projects Fund as shared project revenue source
Ongoing street light maintenance, operations, and infill	Street Lighting Fund	User fees (residential, commercial, and industrial customers pay in monthly utility bill; fee based on types of poles and light fixtures)
Planning, engineering, and other administration (e.g., City staff and supply costs)	Community Development Fund	Permits (building, engineering, and planning) and charges for Community Development Department staff time spent working on Urban Renewal projects, review of traffic engineering studies, and transfers from other City funds

[a] Investment interest is also earned by each of the City's funds by depositing or investing surplus revenues that are not needed for currently cash flow obligations. All interest earned is returned to the fund associated with the earned revenues.

Current City Funds

Current City Funds

Streets Capital Projects Fund

The Streets Capital Projects Fund does not have a dedicated revenue source, but consolidates funds targeted for capital improvement projects from other fund categories as listed above and described below.

Intergovernmental (Federal Funds)

Generally, transportation funds obtained through intergovernmental agreements are project specific and are often used for projects which provide benefit to more than one government agency or jurisdiction. Federal funds are being used for the reconstruction of the I-5/Wilsonville Road interchange, which jointly benefits City and State agencies.

Developer Contributions

Exactions are roadway and/or intersection improvements that are partially or fully funded by developers as conditions of development approval. Typically, all developers are required to improve the roadways along their frontage upon site redevelopment. In addition, when a site develops or redevelops, the developer may be required to provide off-site improvements depending upon the expected level of traffic generation and the resulting impacts to the transportation system.

Developer contributions vary depending on the projects being constructed each year. Over the past three years, developer contributions have ranged from zero to about $1.6 million per year.

Streets Development Charges Fund

System Development Charges (SDCs) are assessed on all new residential and commercial construction within the City. Charges are based on a formula related to increased demands on the City's infrastructure caused by new construction. The City of Wilsonville currently collects five different types of systems development charges: sewer, water, streets, stormwater, and parks. Collected revenues are earmarked for improvements needed within the City that are specifically attributable to the growing demands on these types of infrastructure. All systems development charges collected by the City are segregated into special funds and are only transferred to the Capital Projects Fund when specific improvement project costs have been incurred.

System development charges (SDC) are fees collected from new development, generally based on the proposed land use and size. The transportation component of the fee is typically based on the land use's potential to generate vehicle trips. These charges are used as a dedicated funding source for capacity adding projects for the transportation system including sidewalks, bike lanes, and transit capital projects.

The SDC fee is based on calculations of SDC-eligible project costs and total increases in trips. The cost per PM peak hour trip end is $6,596. Based on Metro's projected land use increase

between 2005 and 2035, the City could expect approximately $112 million in income for development within Wilsonville. SDC income potential over the next 24 years was estimated based on the forecasted land use changes and resulting trip generation growth for Wilsonville. Based on current land use projections, Wilsonville is expected to receive approximately $4.7 million in annual SDC revenues. However, Metro is currently revising the 2035 land use estimates downward, so this revenue projection is likely to decrease once those projections are available.

Transit Fund

The City's public transportation program is funded by a payroll tax paid by Wilsonville businesses and is based on total payroll or self-employment income. The tax rate increased from .33 percent (.0033) to .5 percent (.005) of gross wages in October 2008. The increase was made after completion of a transit master plan and was in response to increased costs associated with the new TriMet WES Commuter Rail which began servicing Wilsonville in February 2009. While WES is run by TriMet, the City contributes $300,000 towards its annual operating costs. In response to the commuter rail, the City added a new bus line and modified all existing routes to coordinate service with the arrival and departure of trains. The City receives no revenues from commuter rail customers.

The payroll tax is due quarterly and covers employment within City limits. Recent layoff s throughout the City have limited the expected growth from the rate increase. The forecast for FY 2010-11 assumed a wage base growth of 1%; however, actual receipts anticipated exceed this assumption. Adjusted accordingly, FY 2011-12 assumes an 8% increase in transit tax revenue.

Intergovernmental grants pay for special transportation programs, bus operations and bus purchases. The amount of grants received varies from year to year based upon grant awards.

In past years, the Transit program has applied for and received funding under the Oregon Business Energy Tax Credit (BETC) program. Receipt is not guaranteed and collections have varied from zero to $600,000. Transit qualifies under the natural energy savings by removing individual cars from the transportation system in favor of combined rides on buses. The City will continue to apply for this funding, however, will not include the funding in its operational budget. Should revenue be received from the program, Transit will request a supplemental budget adjustment to recognize the revenue and its related expenditures. BETC funds are used for promoting transportation alternatives that achieve energy savings.

Miscellaneous revenue includes the anticipated sell of the old SMART building. The proceeds from the sale will be used during FY2011-12 for the construction of the SMART/Fleet Operations Building.

Road Operating Fund

State Fuel Tax and Vehicle License Fee

The State of Oregon Highway Trust Fund collects various taxes and fees on fuel, vehicle licenses, and permits. A portion is paid to cities annually on a per capita basis. By statute, the money may be used for any road-related purpose. Wilsonville typically uses it for road operating needs, including maintenance of traffic signals, roadway striping, curbs, gutters, potholes and minor repairs.[1]

Oregon gas taxes are collected as a fixed amount per gallon of gasoline served. Gas tax in Oregon had not increased since 1992 until the 2009 Oregon Legislative Session approved HB 2001 which increases fees and gas taxes. The higher fees and taxes will be phased in over 2011 and 2012. A key component of the bill is a 6 cent increase to the gas tax (from 24 cents to 30 cents per gallon) that became effective January 1, 2011. However, due to the increasing cost of gasoline, an overall reduction in usage is expected and reflected in the 0% revenue projection for FY 2011-12. This tax does not vary with changes in gasoline prices.

Last year Wilsonville received about $882,600 in State gas tax. While a majority of these funds are spent for road operating needs, some portion may be allocated to the Streets Capital Project Fund or Transit Fund. Because there is no index for cost inflation, this revenue level will increase only proportionate with the city's population growth. Wilsonville is expected to receive approximately $39 million over the next 20 years based on population forecasts.

Road Maintenance Regulatory Fund

Street Utility Fee

A number of Oregon cities supplement their street funds with street utility fees. Establishing user fees to fund applicable transportation activities and/or capital construction ensures that those who create the demand for service pay for it proportionate to their use. The street utility fees are recurring monthly or bi-monthly charges that are paid by all residential, commercial, industrial, and institutional users. The fees are charged proportionate with the amount of traffic generated, so a retail commercial user pays a higher rate than a residential user. Typically, there are provisions for reduced fees for those that can demonstrate they use less than the average rate implies, for example, a resident that does not own an automobile or truck.

From a system health perspective, forming a utility fee also helps to support the ongoing viability of the program by establishing a source of reliable, dedicated funding for that specific function. Fee revenues can be used to secure revenue bond debt used to finance capital construction. A transportation utility can be formed by Council action and does not require a public vote.

[1] City of Wilsonville Proposed Budget FY 2011-12, p. 26.

The Road Maintenance Regulatory Fund was created in FY 1997-98 to account for revenues generated by a road maintenance fee. Since the first bills were mailed January 1998, all residential, commercial and industrial customers have been charged this fee on their monthly utility bill. Proceeds are used for slurry seals, overlays and reconstruction of existing roads.

Effective January 2002, the fees were reduced 10%. Residential customers are charged a monthly fee of $4.03 per household, while commercial and industrial customer's fees are based on a formula that considers traffic impact, square footage and the amount of truck traffic generated. Commercial and industrial rates range from $10.46 to $285.88 per month. Forecasted revenues are based on historic trends.

About $500,000 to $800,000 each year has been transferred from the Road Maintenance Fund to the Streets Capital Projects Fund each year.

Street Lighting Fund

The Street Lighting Fund records the revenues associated with operating and maintaining the streetlight system within the public rights-of-way. Revenues are generated through user fees assessed to all Wilsonville residents and businesses with monthly charges ranging from $.80 to $5.01. The fee is based on the cost of street lighting and takes into consideration the type of pole and light fixtures. The last rate increase occurred in July 1998. Revenue projections are based on historic trends.

Each year, some street lighting revenue has been transferred to the Streets Capital Projects Fund, likely as a contribution toward street lighting along roadway improvement projects. This amount has ranged from under $1,000 to almost $100,000 per year.

General Fund

The General Fund is used to account for all revenues and expenditures that are not required to be recorded in another fund. Principal revenues include property taxes, franchise fees, and intergovernmental shared revenues.

A relatively small amount of money (ranging from zero to less than $20,000) is transferred each year from the General Fund to the Streets Capital projects Fund.

Potential New Funding Sources

Potential New Funding Sources

Consideration of new funding sources to increase revenue for transportation improvements is recommended. Any potential funding source is constrained based on a variety of factors, including the willingness of local leadership and the electorate to burden citizens and businesses, the availability of local funds to be dedicated or diverted to transportation issues from other competing City programs, and the availability and competitiveness of state and federal funds. Nonetheless, it is important for the City to consider all of its options and understand where its power may exist to provide and enhance funding for its transportation programs.

This section describes several potential transportation funding sources, including State and County contributions, City sources (i.e., residents, businesses, and/or developers), grants, and debt financing. Many of these sources have been used in the past by other agencies in Oregon, and in most cases, when used collectively, are sufficient to fund transportation improvements for a local community.

State and County Contributions

Within Wilsonville there are multiple roadways that are not under City jurisdiction but instead are the responsibility of ODOT, Clackamas County, or Washington County. The City should seek contributions (i.e., funding partnerships) from ODOT, Clackamas County, and Washington County for projects located on their respective roadways. In addition, direct appropriations are another optional funding source.

ODOT Contributions

The Oregon Department of Transportation (ODOT) funds projects on state highways under three primary programs: modernization, preservation and maintenance, and grants (see Grant Programs below). Programmed projects are included in the four-year Statewide Transportation Improvement Program (STIP), which is updated every two years. ODOT maintenance districts (District 2A for Wilsonville) also have available funds that may be used for small-scale projects such as in-fill sidewalks or culvert repair on a state highway. In addition, ODOT grants should be pursued for electric vehicle charging stations.

When considering proposed land use actions such as subdivisions or site development, the City should not assume that TSP projects on record will be in place to support the proposed development unless the project is programmed in the current STIP or City CIP. For proposed comprehensive plan amendments, which must consider the long-term adequacy of the transportation system for TPR compliance (i.e., OAR 660-012-0060), ODOT must be consulted to determine whether a highway project is “reasonably likely to be funded” based on funding projections at that time.

Direct Appropriations

The City can also seek direct appropriations from the State Legislature and/or the United States Congress for transportation capital improvements. There may be projects identified in the plan for which the City may want to pursue these special, one-time appropriations. In particular, projects that support economic development may gain support for direct appropriations.

City Sources

The City can also look to local residents, business owners, and developers to raise additional funds that can be designated for transportation-related uses. Some optional sources include developer exactions, Urban Renewal District (URD) fund increases, SDC increases, local improvement district (LID) funds, General Fund revenue transfers, special assessments, and employment taxes. Wilsonville has used several of these in the past and is currently has two URDs.

Developer Exactions

Exactions are roadway and/or intersection improvements that are partially or fully funded by developers as conditions of development approval. Typically, all developers are required to improve the roadways along their frontage upon site redevelopment. In addition, when a site develops or redevelops, the developer may be required to provide off-site improvements depending upon the expected level of traffic generation and the resulting impacts to the transportation system.

Urban Renewal District (URD)

A URD is a tax-funded district within the City. The URD is funded with the incremental increases in property taxes that result from the construction of applicable improvements. As desired, the funds raised by a URD can be used for, but are not limited to, transportation projects located within the URD boundaries.

The City has created two URDs, one for the west side and one for the east side. Transportation projects within these areas could be considered for funding through the URD. However, because these funds may be used for other purposes than transportation improvements, no URD funds were assumed in the revenue projections. The City may desire to pay off the debt on the existing URDs before creating additional URDs.

Local Improvement District (LID)

The City may set up Local Improvement Districts (LIDs) with voter approval of the affected property owners to fund specific capital improvement projects within defined geographic areas, or zones of benefit. LIDs impose assessments on properties within its boundaries and may only be spent on capital projects within the geographic area. Because LIDs may not fund ongoing maintenance costs, they require separate accounting. Furthermore, because citizens representing 33 percent of the assessment can terminate a LID and overturn the planned projects, LID projects and costs must obtain broad approval of those within the LID boundaries.

The General Fund Revenues

At the discretion of the City Council, the City can allocate General Fund revenues to pay for its transportation program. General Fund revenues primarily include property taxes, use taxes, and any other miscellaneous taxes and fees imposed by the City. This allocation is completed as a part of the City's annual budget process, but the funding potential of this approach is constrained by competing community priorities set by the City Council. General Fund resources can fund any aspect of the program, from capital improvements to operations, maintenance, and administration. Additional revenues available from this source to fund new aspects of the transportation program are only available to the extent that either General Fund revenues are increased or City Council directs and diverts funding from other City programs.

Special Assessments

A variety of special assessments are available in Oregon to defray costs of sidewalks, curbs, gutters, street lighting, parking, and central business district (CBD) or commercial zone transportation improvements. These assessments would likely fall within the Measure 50 limitations. One example is the 50/50 program. This is a match program for sidewalk infill projects where property owners pay half the cost of a sidewalk improvement and the City matches the investment to complete the project.

Employment Taxes

Employment taxes may be levied to raise additional funds. For example, in the Portland region, payroll and self employment taxes are used to generate approximately $145 million annually. The City of Portland has chosen to earmark these funds for TriMet transit operations.

Grants

The City of Wilsonville should actively pursue State and Federal grants, in particular to complete desired pedestrian and bicycle projects. Grant opportunities include funding for pedestrian, bicycle, Intelligent Transportation System (ITS), and Safe Routes to School (SRTS) improvements. Current grant programs include:

Federal Funding Sources

- Highway Safety Improvement Program
- Transportation Enhancements
- Recreational Trails Program
- Safe Routes to School (SRTS)
- New Freedom Initiative
- Community Development Block Grants
- Land and Water Conservation Fund
- Transportation, Community and System Preservation Program

State Funding Sources

- Oregon Immediate Opportunity Fund
- Oregon Transportation Infrastructure Bank
- Oregon Special Transportation Fund

- Oregon Bicycle and Pedestrian Program Grants
- Oregon Pedestrian Safety Mini-Grant Program
- Oregon Business Energy Tax Credits (BETC)
- Oregon Safe Routes to School (OSRTS)

Other Funding Sources

- American Greenways Program
- Bikes Belong Grant Program

Debt Financing

While not a direct funding source, debt financing is another funding method. Through debt financing, available funds can be leveraged and project costs can be spread over the projects' useful lives. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but it is also viewed as an equitable funding source for larger projects because it spreads the burden of repayment over existing and future customers who will benefit from the projects. One caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations. Two methods of debt financing are voter-approved general obligation bonds and revenue bonds.

Voter-Approved General Obligation Bonds

Subject to voter approval, the City can issue General Obligation (GO) bonds to debt finance capital improvement projects. GO bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property throughout the City (i.e., a property tax increase). Depending on the critical nature of projects identified in the Transportation Plan and the willingness of the electorate to accept increased taxation for transportation improvements, voter-approved GO bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.

Limited Tax General Obligation (LTGO) Bonds

Limited Tax General Obligation (LTGO) Bonds are similar to General Obligation (GO) bonds, however, they do not have to be voted on by constituents. The City is currently using these as an option for their wastewater treatment plan and may consider them for transportation projects as well. The City pledges its general revenues to bondholders along with the utility revenues. The advantages to this option are that it does not require reserves or coverage (such as Revenue bonds) and do not require a vote and are not subject to referral.

Revenue Bonds

Revenue bonds are debt instruments secured by rate revenue. For the City to issue revenue bonds for transportation projects, it would need to identify a stable source of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds due to the perceived stability offered by the "full faith and credit" of a jurisdiction.

Appendix C

GOALS AND EVALUATION CRITERIA (DKS, 2012)

DKS Associates
TRANSPORTATION SOLUTIONS

Technical Memorandum

TO: Project Management Team

FROM: Scott Mansur, P.E.; Carl Springer, P.E.; Brad Coy, P.E.

DATE: June 15, 2012

SUBJECT: **Wilsonville Transportation System Plan Update – Goals and Evaluation Criteria (Task 2.3)** P10068-007

This memorandum presents a vision statement and revised transportation goals for the City of Wilsonville as part of their Transportation System Plan (TSP) update. The vision statement and goals were developed in conjunction with the City Council, Planning Commission, and City staff and are intended to guide the City's transportation planning and investment decisions both during and following the TSP update.

This memorandum also provides evaluation criteria that will be used for the motor vehicle project evaluation for the TSP update. These criteria will not be applied to the other travel modes as part of this TSP update because recent project prioritization was undertaken as part of prior modal plans. The updated motor vehicle evaluation will support the TSP's purpose of satisfying the City's unique transportation needs while maintaining consistency with local, regional, and state requirements.

Why and How Revised Goals Were Developed

A revision to the City's current goals is necessary to address the transportation system as one complete, integrated system rather than following the prior model of having a separate set of goals for each travel mode. This outcome-based approach to the TSP goals accomplishes two important objectives of this update: 1) it frames the local planning process in a manner that is consistent with the latest regional and state planning principles and regulations, and more importantly, 2) it helps decision makers consider the entire system when making investments rather than one specific travel mode. The City's current goals and policies from the City's 2003 TSP, 2006 Bicycle and Pedestrian Master Plan, 2008 Transit Master Plan, and Wilsonville Road Interchange Area Management Plan (IAMP) are reproduced in the appendix for your reference.

The revised goals have retained the purpose and intent of the current adopted goals but have been reorganized to provide a new outcomes-based, mode-neutral framework.[1] The four revised goals are intended to capture the essence of the transportation system and support the City's quality of life, economic strength, and long-term viability.

[1] Based on a prior version of the recommended revised goals (which had included five goals), concept maps were prepared to show how the current and revised goals relate to one another. These concept maps are included in the appendix and indicate where specific phrases and key words are related. These concept maps were not updated

117 Commercial Street NE, Suite 310, Salem, Oregon 97301
(503) 391-8773 | (503) 391-8701 fax
www.dksassociates.com

Vision Statement

> Wilsonville has strategically designed and collaboratively built a coordinated multi-modal transportation system. Our system provides mode and route choices delivering safe and convenient local accessibility. Our local accessibility is further enhanced through arterial connectivity with our neighboring communities, thereby providing excellent intercity and interstate mobility serving our residential and business needs.

Revised Transportation Goals

The City of Wilsonville is responsible to manage a transportation system that efficiently and effectively transports people and goods within the City to support the quality of life of residents and the economic vitality of businesses. The City can best fulfill its responsibilities by working collaboratively with local and regional partners in developing a transportation system that is:

1. **Safe:** Follow the most current safety practices for design, operations and maintenance of transportation facilities.
2. **Connected and Accessible:** Provide all users with access to integrated pedestrian, bicycle, transit, and motor vehicle facilities and services that connect Wilsonville's neighborhoods, schools, employment centers, and retail areas to each other and to the surrounding region.
3. **Functional and Reliable:** Provide, manage, and maintain sufficient transportation infrastructure and services throughout Wilsonville to ensure functional and reliable multi-modal and freight operations as development occurs that is consistent with the Wilsonville Comprehensive Plan.
4. **Cost Effective:** Pursue cost effective transportation solutions that provide the greatest benefit to Wilsonville residents and businesses, while mitigating impacts to the City's social, economic, and environmental resources.

Evaluation Criteria

Evaluation criteria and a point-based technical scoring methodology were developed for assessing how well the TSP's motor vehicle projects contribute to the achievement of the City's revised transportation goals. Based on their criteria scores, the projects can be compared and prioritized. In this way, a consistent method will be used to evaluate and rank the motor vehicle projects based on how well they meet the City's transportation goals and policies. The evaluation criteria will not be applied to the other travel modes (e.g., bicycle, pedestrian, transit) as part of this TSP update because of the recent prioritization efforts performed for prior modal plans (i.e., 2006 Bicycle and Pedestrian Master Plan and 2008 Transit Master Plan).

Table 1 lists the evaluation criteria, which are categorized using the framework of the revised transportation goals. These criteria were selected based on the City's current transportation policies. They were also refined to ensure consistency with Metro's Regional Transportation Functional Plan (RTFP). The Evaluation Criteria Comparison Table in the appendix provides a matrix

showing how the evaluation criteria correspond with the City's current policies and the Metro RTFP requirements.

The scoring will be performed using the -1 to +1 range identified in Table 1, with -0.5 and +0.5 also valid options for projects that partially meet the specified scoring criteria. The final evaluation score for each project will be developed using the following steps:

- Average the scores for the evaluation criteria within a goal to determine the average score for each goal (this step shows how well the project meets each of the four goals)
- Average the scores for all four goals (because there are different numbers of criteria for each of the four goals, this step ensures an equal weighting for each goal)
- Multiply the score (which is between -1 and +1) by 100 and round to the nearest 5 (this step converts the score from a decimal to a whole number on a 100-point scale)

Using this methodology, the range of scores can vary between +100 (fully meets all positive criteria) and -100 (received all negative scores). Therefore, a positive score means that the project would be beneficial to the City, with the highest scores estimated to provide the greatest benefit in helping the City achieve its vision and goals. However, community input will still be critical to determine which projects should be considered the highest priorities.

Table 1: Project Evaluation Criteria and Scoring

Criteria	Evaluation Score
Safe	
Area of Special Safety Concern Addresses the safety of an area of special concern in the City.	+1. Resolves an identified safety concern 0. Has little or no impact (or has offset impacts) to an area of special safety concern -1. Negatively impacts an area where safety concerns currently exist
Geometric Design/User Expectations Meets current design standards and is consistent with user expectations to improve overall safety of the transportation network.	+1. Improves the system's overall safety 0. Has little or no impact (or has offset impacts) to the system's overall safety -1. Negatively impacts safety or only postpones safety concerns without clear future solution
Connected and Accessible	
Access Improves access to areas of the City that previously were underserviced.	+1. Improves access to underserved areas of the City 0. No impact to underserved areas of the City -1. Negatively impacts underserved areas of the City

Table 1 continued on next page.

(Continued) Table 1: Project Evaluation Criteria and Scoring

Criteria	Evaluation Score
Connected and Accessible (Continued)	
Multi-Modal Facilities Accommodates the needs of multiple modes simultaneously.	+1. Benefits all transportation modes 0. Has little or no impact (or has offset impacts) -1. Adversely impacts other transportation modes
Multi-Modal Connections Improves connections to mode transfer locations to accommodate trips using more than one mode.	+1. Improves connections to mode transfer locations 0. Has little or no impact (or has offset impacts) -1. Creates a barrier to mode transfer
Regional Compatibility Compatible with other jurisdictions' transportation plans (adjacent cities, counties, Metro, and ODOT).	+1. Compatible with other jurisdictions' plans 0. Has little or no impact (or has offset impacts) -1. Not compatible with other jurisdictions' plans
Functional and Reliable	
Motor Vehicle Capacity Enables roadways and intersections to have sufficient capacity to meet applicable operating standards under the 2035 future traffic scenario.	+1. Mitigates an identified capacity deficiency and/or has significant capacity benefits for the entire system 0. Does not contribute to capacity deficiency mitigation -1. Reduces capacity or limits future capacity improvement potential
Efficient Operations Improves the ability to efficiently operate the current and planned transportation infrastructure.	+1. Improves operational efficiency of infrastructure 0. Has little or no impact (or has offset impacts) -1. Negative impact on infrastructure efficiency
Freight Mobility Improves freight mobility and reliability on the City's freight routes.	+1. Improves freight movement on freight routes 0. Has little or no impact (or has offset impacts) -1. Inhibits freight movement on freight routes
Alternative Routes Ensures all locations have multiple routes for providing routing options to users and emergency vehicles.	+1. Provides additional routes and/or connections for locations with limited access 0. Has minor or no impact (or has offset impacts) -1. Reduces alternative routes such that there are potential emergency response implications

Table 1 continued on next page.

(Continued) Table 1: Project Evaluation Criteria and Scoring

Criteria	Evaluation Score
Cost- Effective	
Economic Prosperity Supports economic prosperity by providing transportation facilities for existing and planned land uses and freight movements, consistent with Wilsonville's Comprehensive Plan.	+1. Provides infrastructure to support existing and planned land uses 0. Either no change or offset changes -1. Overall negative impact to infrastructure for existing and planned land uses
Environmental Sensitivity Takes into account the natural environment in the planning, design, construction, and maintenance.	+1. Avoids environmental impact or improves conditions 0. Low environmental impact -1. High environmental impact
Vehicle-Miles Traveled (VMT) Reduces the expected vehicle-miles traveled (VMT), as measured using the project's travel demand model.	+1. Reduces the City's total VMT 0. Has little or no change to City's VMT -1. Increases City's total VMT
Fundability Clear potential sources for funding both construction and maintenance.	+1. Clear potential sources for funding construction and maintenance 0. Feasible costs, but uncertain funding sources -1. High costs and funding difficulty expected
Project Readiness Takes into account the ease of implementation.	+1. High project readiness 0. Minimal project readiness -1. implementation roadblocks

Appendix

Existing Goals and Policies

New Goal Development Concept Maps

Evaluation Criteria Comparison Table

Existing Goals and Policies

Existing Goals and Policies

The following pages include the goals and policies that were adopted as part of Wilsonville's 2003 TSP, 2006 Bicycle and Pedestrian Master Plan, and 2008 Transit Master Plan. These goals and policies provide an excellent base for the current TSP update. However, this TSP update provides an opportunity to make sure the goals and policies still reflect the City's vision for transportation and to make sure the City's TSP is consistent with other local, regional and state requirements, primarily with the RTP. The existing goals and policies are spread throughout the current TSP in various chapters and are found under the following categories:

- Land Use
- Motor Vehicles
- Bicycle and Pedestrian
- Transit
- Other Modes, Coordination and Cooperation

LAND USE GOALS

Goal 3.1: To establish and maintain a multi-modal transportation system that supports the Wilsonville Comprehensive Plan.

3.9 POLICIES

The City of Wilsonville shall:

Policy 3.1
Consider revising the existing land use plan and implementing changes that respond to the capacity constraints of the future transportation system.

Policy 3.2
Design a transportation system that accounts for adjacent land uses, including accessibility and access management.

MOTOR VEHICLE GOALS

Goal 4.1: To provide an interconnected motor vehicle system that will safely and efficiently provide for vehicle circulation and enhanced mobility.

Goal 4.2: To establish transportation system standards for each of the motor vehicle, transit, marine, rail, and non-motorized systems that reflect the proposed transportation network and adopted land uses, and emphasize the movement of people over vehicles.

4.6 POLICIES

The City of Wilsonville shall:

Policy 4.1.1
Design the City street system per the street standards set forth in this TSP and to meet LOS D, which is the standard in the City. As may be approved by the City Council, possible exceptions to the LOS D standard are a change to LOS E on Boones Ferry Road and/or Elligsen Road, and on Wilsonville Road between and including the intersections with Boones Ferry Road and Town Center Loop West. Other capacity improvements intended to allow continued development without exceeding LOS E may also be approved by the City Council in permitted locations.

Policy 4.1.2
Require developers to provide transportation improvements as may be required or conditioned by a land use decision, expedited land use division, or limited land use decision, on a roughly proportional basis of the developer's impacts to the benefits received.

Policy 4.1.3
Require bicycle and pedestrian linkages for all cul-de-sacs and encourage similar linkages between neighborhoods that would otherwise be separated.

Policy 4.1.4
Connect the existing motor vehicle system within the City and across Interstate 5 (I-5) where appropriate. All connections shall be evaluated for their impacts to future operations of the City's road network.

Policy 4.1.5
Promote other existing routes and/or provide connections to other regional roadways that provide alternative routes into and out of the City to reduce the reliance on I-5 and its interchanges within the City.

Policy 4.1.6
Develop a system of signal coordination and tie in with the I-5 ITS system providing a system of integrated parallel arterials and collectors.

Policy 4.2.1
Continue to plan, schedule, and coordinate all public street improvements through a Capital Improvements Program.

Policy 4.2.2
Provide an adequate motor vehicle system that serves commercial vehicle/truck traffic to and from land uses requiring the use of commercial vehicles/trucks.

Policy 4.3.1
Evaluate and minimize the environmental impacts of all new public road projects.

Policy 4.4.1
Work with ODOT to improve the general community awareness of its access permitting authority.

Policy 4.4.2
Require that the TSP be reviewed no more than five years after the date of adoption.

BICYCLE & PEDESTRIAN MASTER PLAN GOALS

Goal: To promote non-motorized travel and provide a safe, interconnected system of pedestrian and bicycle facilities.

Policies

The City of Wilsonville shall:

1. Continue to improve and expand pedestrian and bicycle facilities, as needed throughout the community, with a focus on improved connectivity both within the City and with the Metro Regional Bicycle System.
2. Ensure that pedestrian and bicycle networks provide direct connections between major activity centers (e.g., civic, employment, and retail centers) and minimize conflicts with other modes of transportation.
3. Regard facilities for bicyclists and pedestrians as important parts of the overall transportation system and not just recreational facilities.
4. Increase the bicycle share mode throughout the City and improve bicycle access to the City's transportation system.

TRANSIT MASTER PLAN GOALS

This chapter presents policies and implementation measures to guide SMART and the City of Wilsonville in meeting the following goals:

Goal 1 To promote an effective transit system that is a viable alternative to the single occupant vehicle; responds to the mobility needs of residents, employers, and employees; permits easy shifts from one mode to another; offers choice and convenience; and connects to other regional transportation systems.

Goal 2 To develop and implement Transportation Demand Management strategies in order to create greater choice and mobility; reduce automobile trips; make more efficient use of the roadway system; and minimize air pollution.

Policies

The City of Wilsonville shall:

Policy 1
Increase public awareness of transit and other transportation options, so that customers can make informed decisions.

Policy 2
Provide service which is coordinated, convenient, comfortable, and safe.

Policy 3
Promote land use patterns and development standards that improve accessibility of transit to pedestrians, bicyclists, motorists, and special needs groups.

Policy 4
Expand service to meet the demands of a growing population and employment base in Wilsonville.

Policy 5
Strive to improve air quality and traffic congestion by increasing transit efficiency, promoting transportation options, and implementing transportation systems management.

Policy 6
Create a sense of community ownership of the transit system by encouraging citizen involvement.

OTHER MODES, COORDINATION & COOPERATION GOALS

Goal 7.1: To coordinate with, regional, State, and neighboring local jurisdictions in the development and operation of the multi-modal transportation system.

Goal 7.2: To provide multi-modal facilities properly integrated with the citywide transportation system.

POLICIES
The City of Wilsonville shall:

Policy 7.1.1
Actively encourage the Federal Highway Administration, Federal Transit Administration, Oregon Department of Transportation, and Metro to provide improvements to regional transportation facilities.

Policy 7.1.2
Continue to work in concert with the State, Metro, Clackamas and Washington Counties, and adjacent jurisdictions to develop and implement a regional transportation plan that is complementary to and supportive of the City's Plan while addressing regional concerns. The City expects a reciprocal commitment from other agencies.

Policy 7.2.1
Maintain access to the Willamette River so that the river may be used for transportation purposes in the future. Acquire or improve access to Willamette River for public docking purposes.

Policy 7.2.2
Assist in efforts to improve the viability of the railroad, not only for freight, but for passenger service as well.

Policy 7.3.1
Minimize conflicts and facilitate connections between modes of transportation.

Wilsonville Interchange Area Management Plan Goals

The Wilsonville Road Interchange Area Management Plan (IAMP) also included multiple goals that can help inform the City's transportation goals. However, these goals were focused exclusively on the interchange area.

Goal 1: Protect the function and operation of the interchange and the state highway as follows:

I-5 is classified as an Interstate Highway. It is part of the National Highway System and is a designated freight route between Portland and points south. The operational objective for Interstate Highways is to provide safe and efficient high-speed travel in urban and rural areas.

Objective 1a: The preferred interchange project alternative will meet FHWA Interchange requirements and will accommodate design-year (2030) traffic demands as a threshold.

Objective 1b: The project alternatives developed for consideration as part of the IAMP planning process are consistent with the OHP requirement that the maximum volume-to-capacity (V/C) ratio for the ramp terminals of interchange ramps be either 0.85 or 0.90 (as defined in the OHP). For "build" scenarios, the 2003 Highway Design Manual standard of 0.75 is desired or a design exception would be needed.

Objective 1c: The preferred alternative will meet or move in the direction of ODOT access management spacing standards for access along interchange crossroads.

Goal 2: Provide for an adequate system of local roads and streets for access and circulation within the interchange area that minimizes local traffic through the interchange and on the interchange cross road.

Objective 2a: The preferred alternative will include necessary supporting improvements to the surface street system in the vicinity of the interchange. Improvements to the local street network will be adopted into the local comprehensive plan, including identified funding sources, as part of the City of Wilsonville's actions to implement the IAMP.

Objective 2b: The project alternatives will propose surface street improvements that either meet the ODOT established access management standards or improve on the current conditions.

Objective 2c: The project alternatives will propose surface street improvements that will operate in conformance with applicable standards over the 20-year planning horizon.

Goal 3: Provide safe and efficient multi-modal travel between the connecting roadways (and the surface street network, if applicable).

Objective 3a: While recognizing existing capacity constraints, the project alternatives will improve safety by adding capacity to reduce congestion and/or correcting geometric conditions that do not meet current applicable standards.

Objective 3b: The project alternatives will improve bicycle and pedestrian safety by providing upgraded bikeways and walkways that meet current applicable standards and include facility infill and extensions where needed to provide a continuous network.

Goal 4: Ensure future changes to the planned land use system are consistent with protecting the long-term function of the interchange and the surface street system and the integration of future transportation projects and land use changes.

Objective 4a: The project alternatives will be developed in partnership with affected property owners in the interchange area, the City of Wilsonville, Clackamas County, and the Oregon Department of Transportation (ODOT), as well as other stakeholders, including interchange users.

Objective 4b: The City and County Comprehensive Plans and/or Transportation System Plans will be found consistent, or amendments will be proposed to ensure consistency, with the preferred project interchange alternative.

Objective 4c: The City and County will adopt land use policies that ensure future land use actions in the IAMP Management Area, including requests for comprehensive plan amendments and/or zoning amendments, and promote land development that is compatible with the planned interchange capacity for the IAMP planning horizon.

Goal 5: Recognize the importance of the interchange function to support local and regional economic development goals and plans.

Objective 5a: The project alternatives are expected to reduce delay for vehicles, including commercial vehicles, accessing the freeway and to increase safety.

Objective 5b: The project alternatives will facilitate access to, through, and from businesses in Wilsonville.

Goal 6: Ensure that the needs of regional through trips and the timeliness of freight

movements are considered when developing and implementing the IAMP, in particular when planning for improvements that directly impact freight routes.

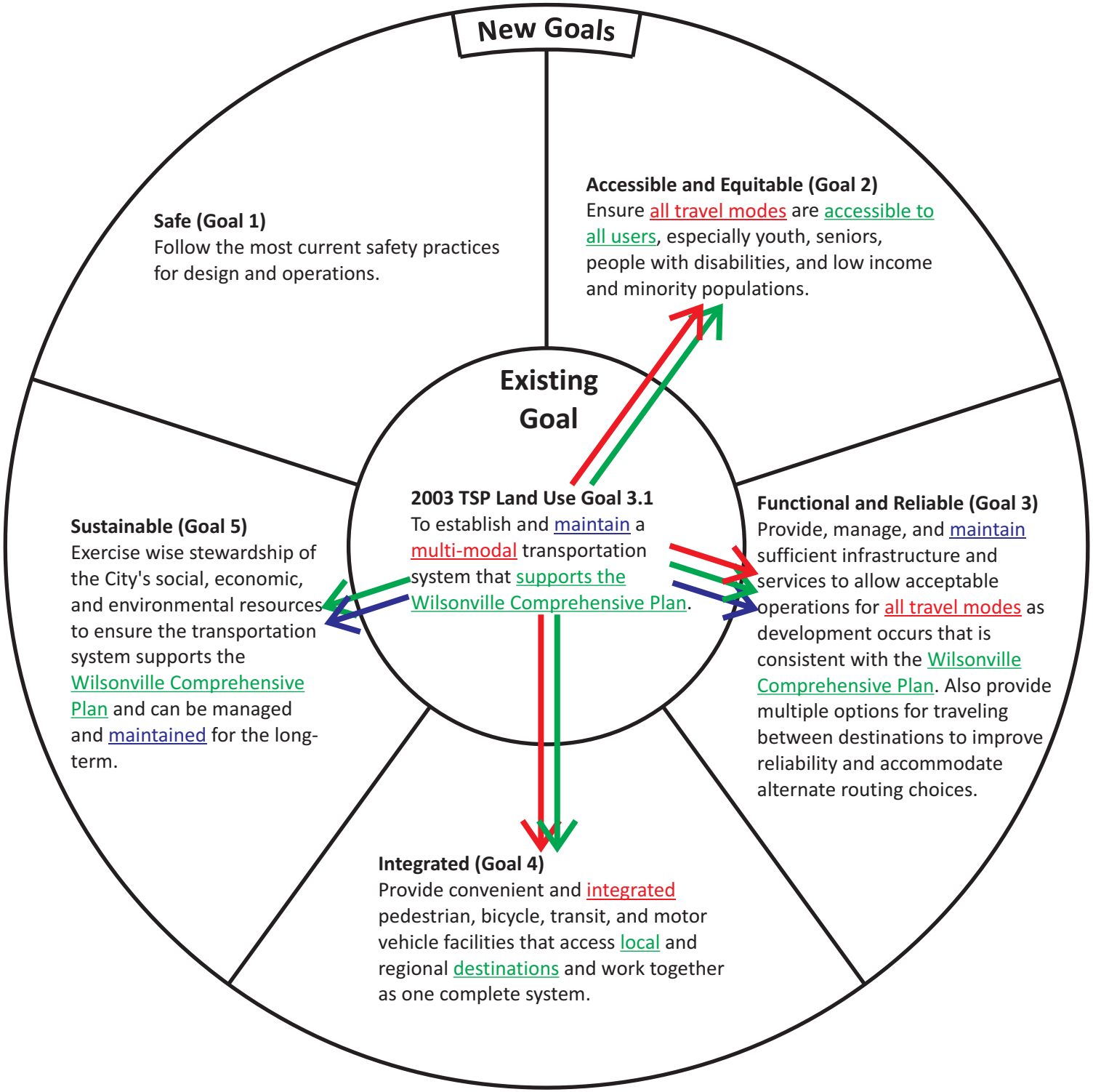
Objective 6a: The project alternatives will facilitate freight access to and from the many industrial freight destinations in the interchange study area.

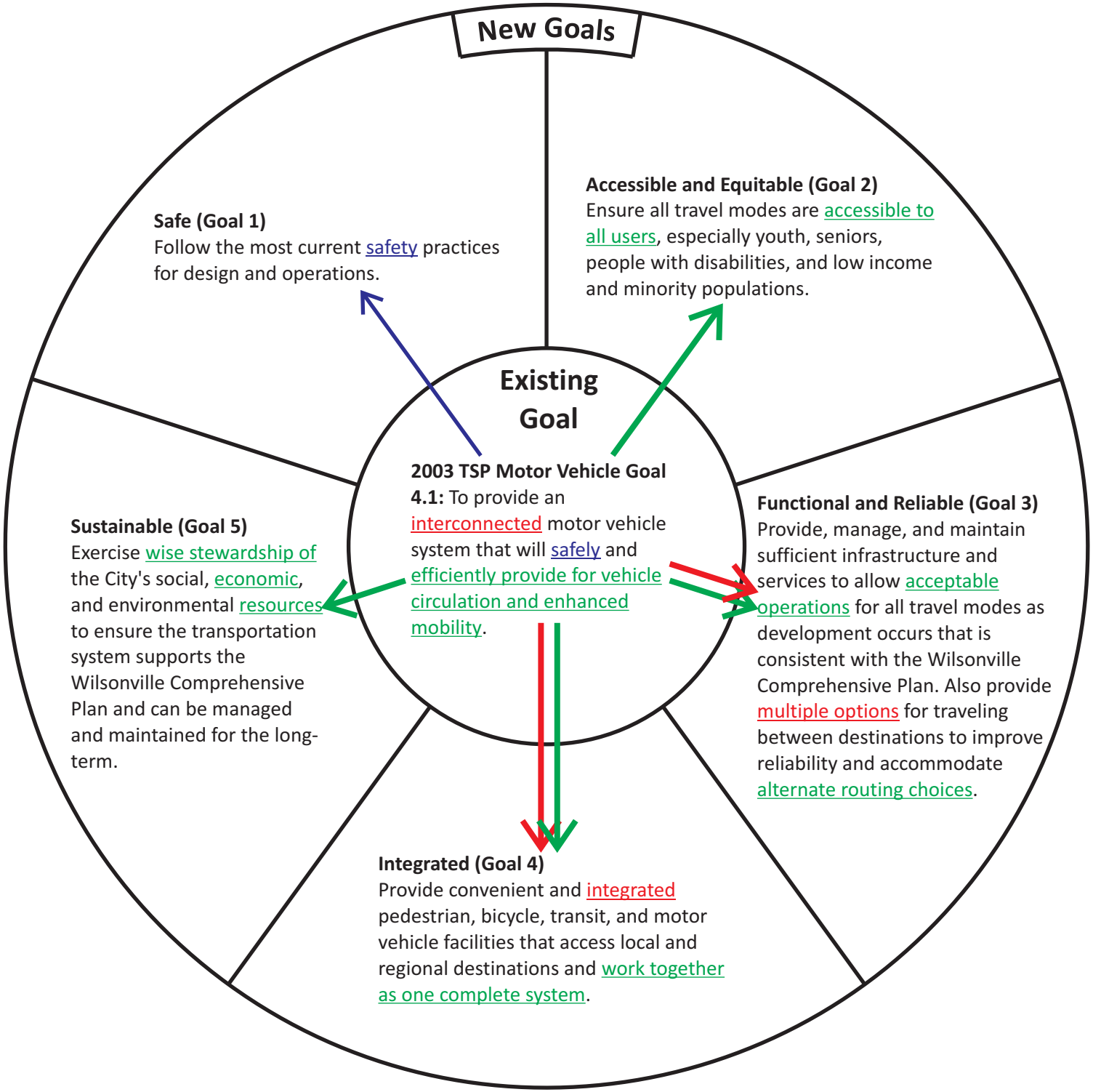
Areas to Consider for Additional Goals and Policies

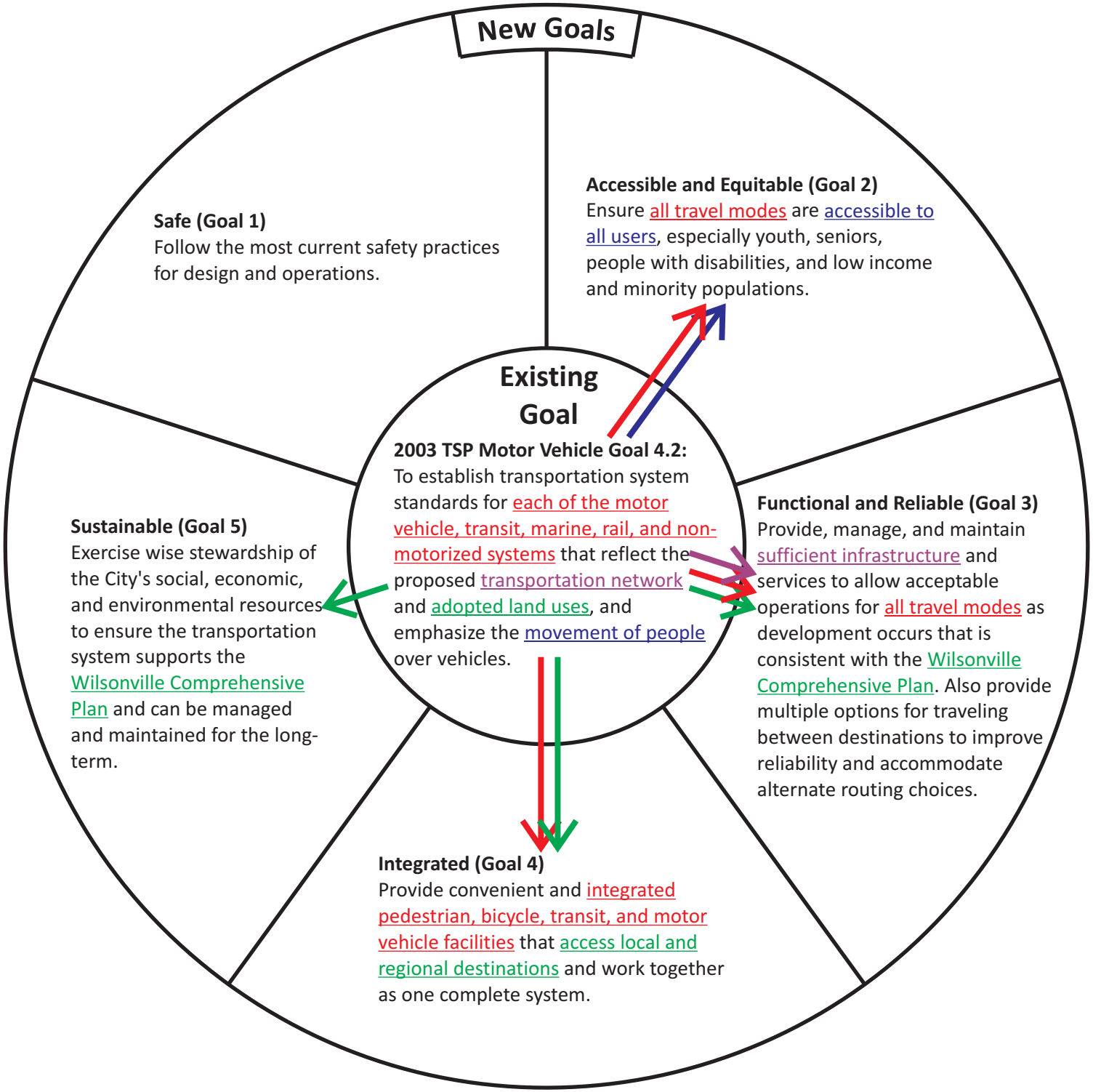
The Regional Transportation Plan (RTP) also includes ten goals that can help inform the City's transportation goals.

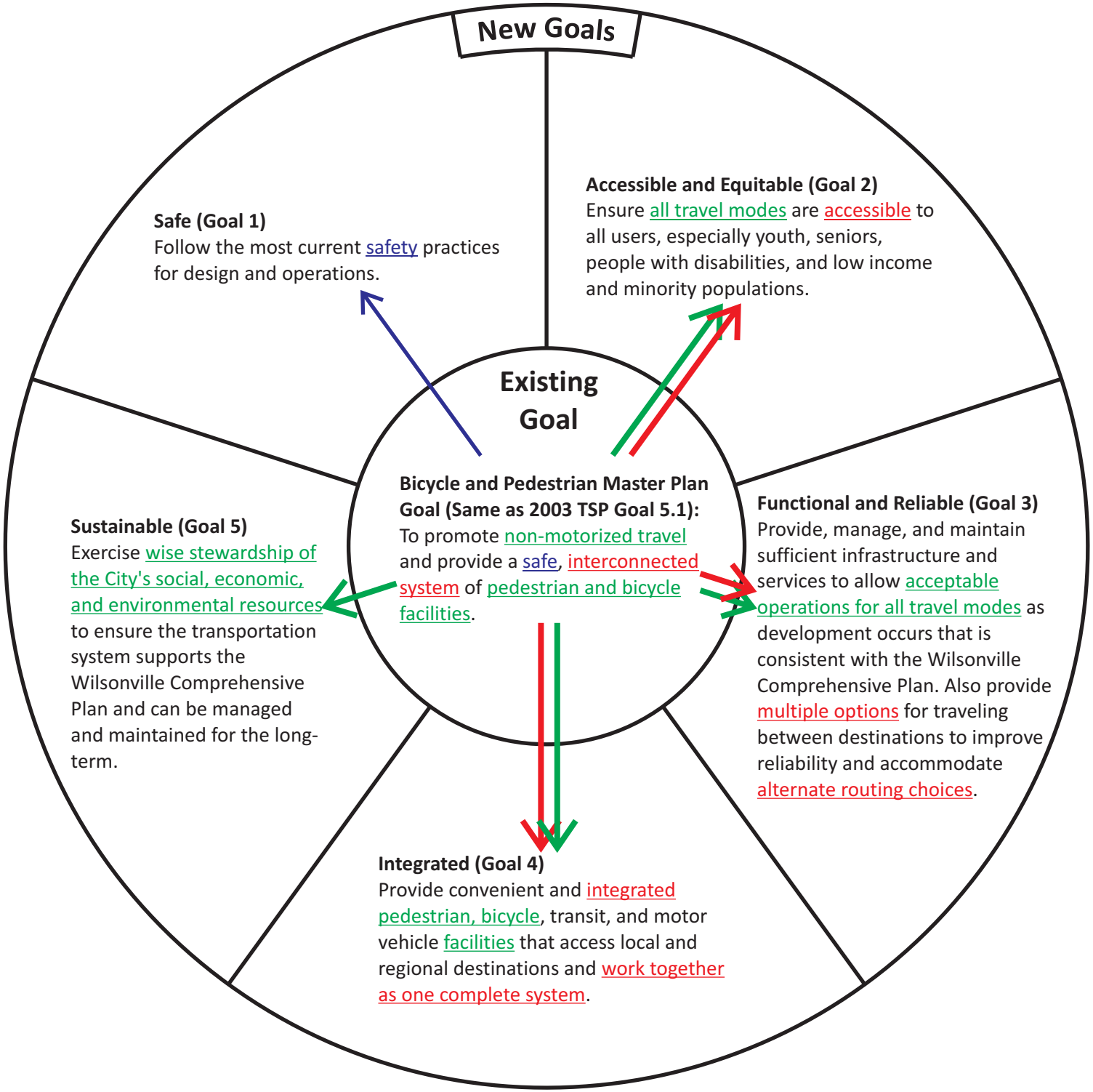
- **RTP Goal 1: Foster vibrant communities and efficient urban form** by linking land use and transportation decisions.
- **RTP Goal 2: Sustain economic competitiveness and prosperity** by developing multi-modal transportation infrastructure and services to support the region's well-being and to promote a diverse innovative, sustainable and growing regional and state economy.
- **RTP Goal 3: Expand transportation choices** for all residents.
- **RTP Goal 4: Emphasize effective and efficient management of the transportation system** by applying technology and using travel demand management (TDM) and pricing strategies.
- **RTP Goal 5: Enhance safety and security.**
- **RTP Goal 6: Promote environmental stewardship** of the city's natural, community and cultural resources by practicing stewardship of air, water, land, wildlife, and botanical resources. Take into account the natural environments in the planning, design, construction and maintenance of the transportation system.
- **RTP Goal 7: Enhance human health** by developing a multi-modal transportation infrastructure that supports active living, physical activity and minimizes transportation-related pollution.
- **RTP Goal 8: Ensure equity** by equitably distributing the benefits and adverse impacts of transportation planning, programs and investment decisions among population demographics and geography.
- **RTP Goal 9: Ensure fiscal stewardship** by making transportation investment decisions that adequately maintain transportation facilities and use public resources effectively and efficiently. Work to stabilize existing transportation revenue while securing new and innovative long-term sources of funding to build, operate and maintain the transportation system.
- **RTP Goal 10: Deliver accountability** by operating in an open and transparent manner and providing meaningful opportunities for public input. Improve coordination and cooperation among the public and private owners and operators of the city's transportation system.

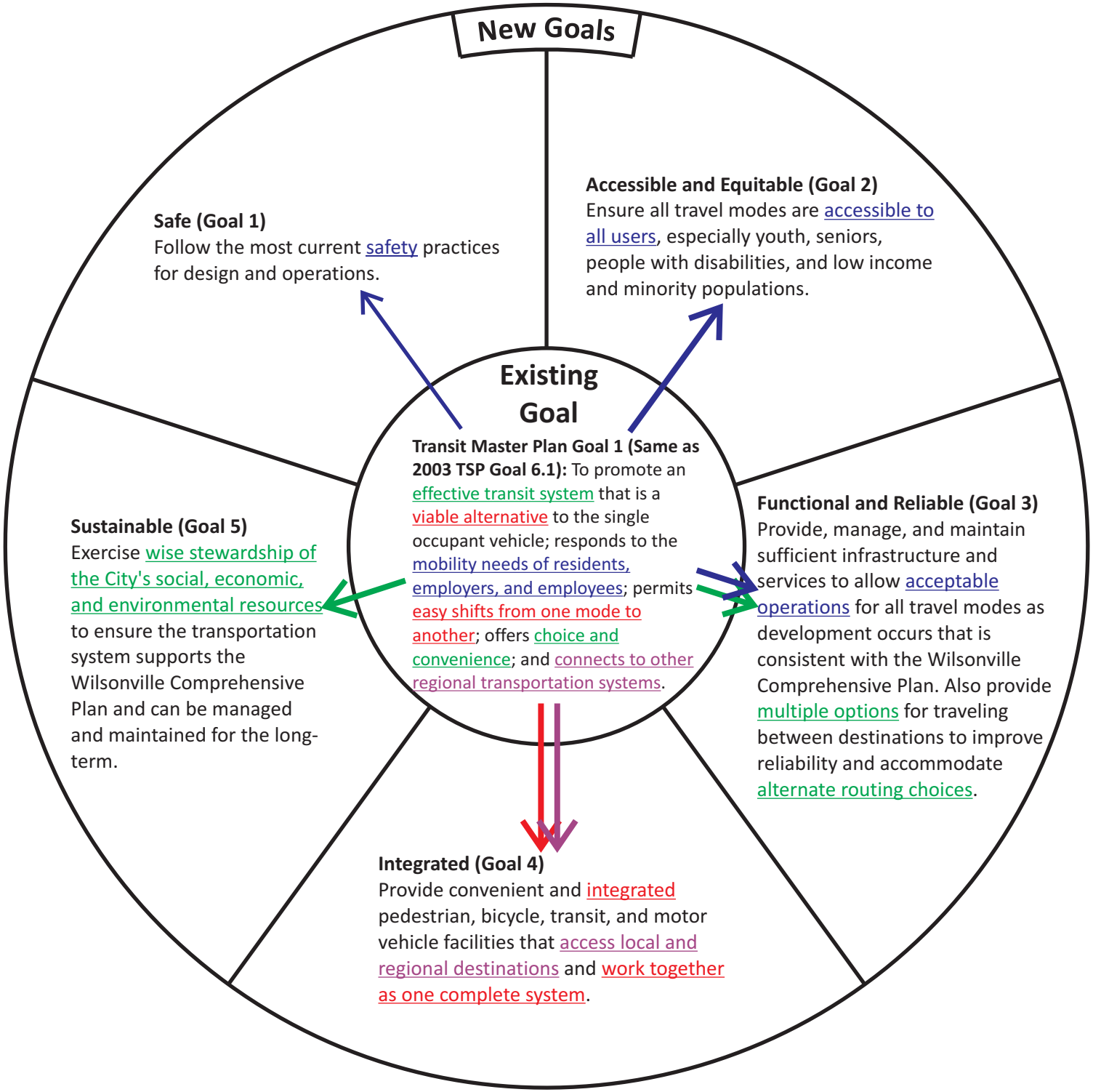
New Goal Development Concept Maps

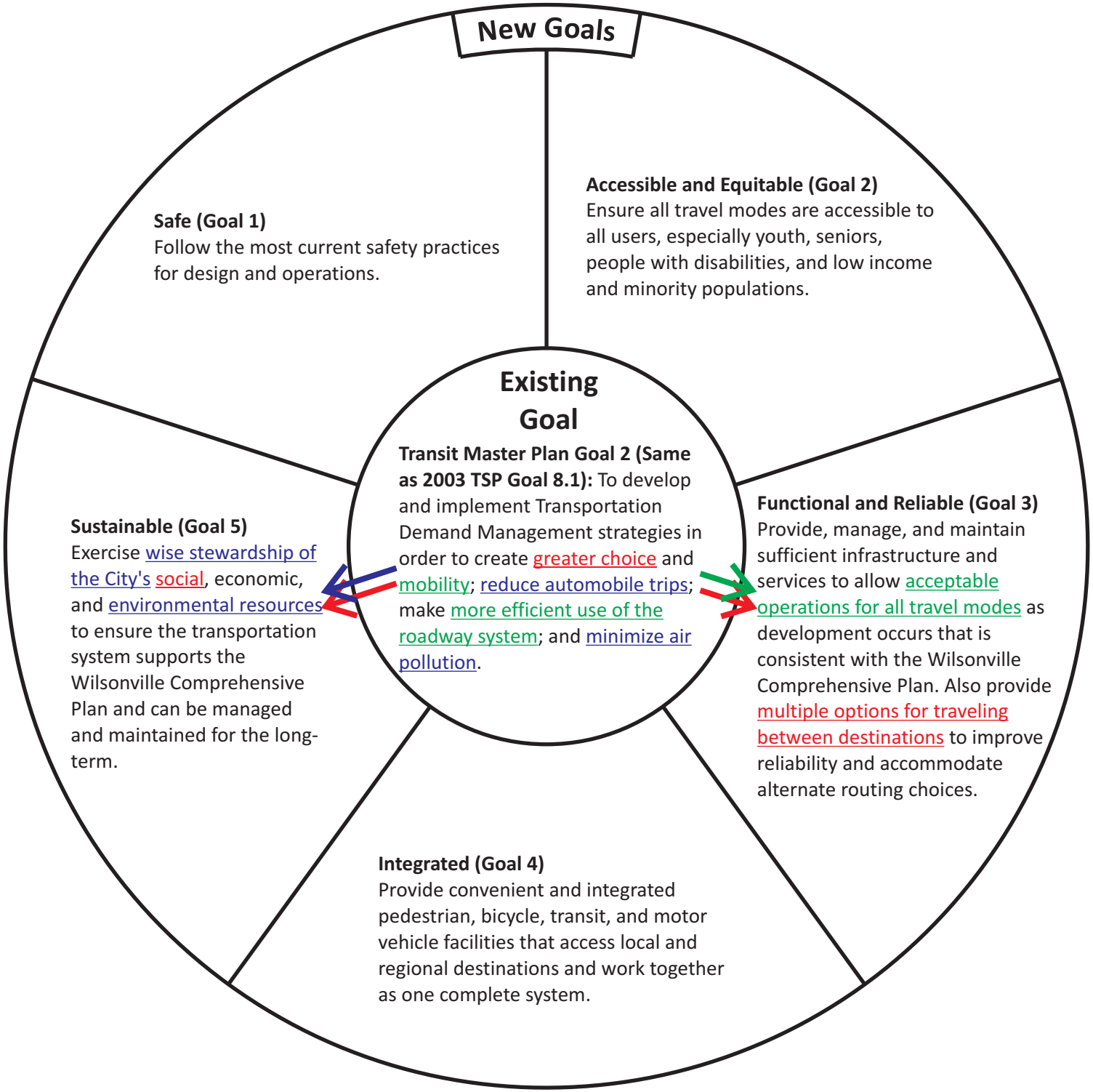

New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
2003 TSP Land Use Goal 3.1
To establish and maintain a multi-modal transportation system that supports the Wilsonville Comprehensive Plan.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.

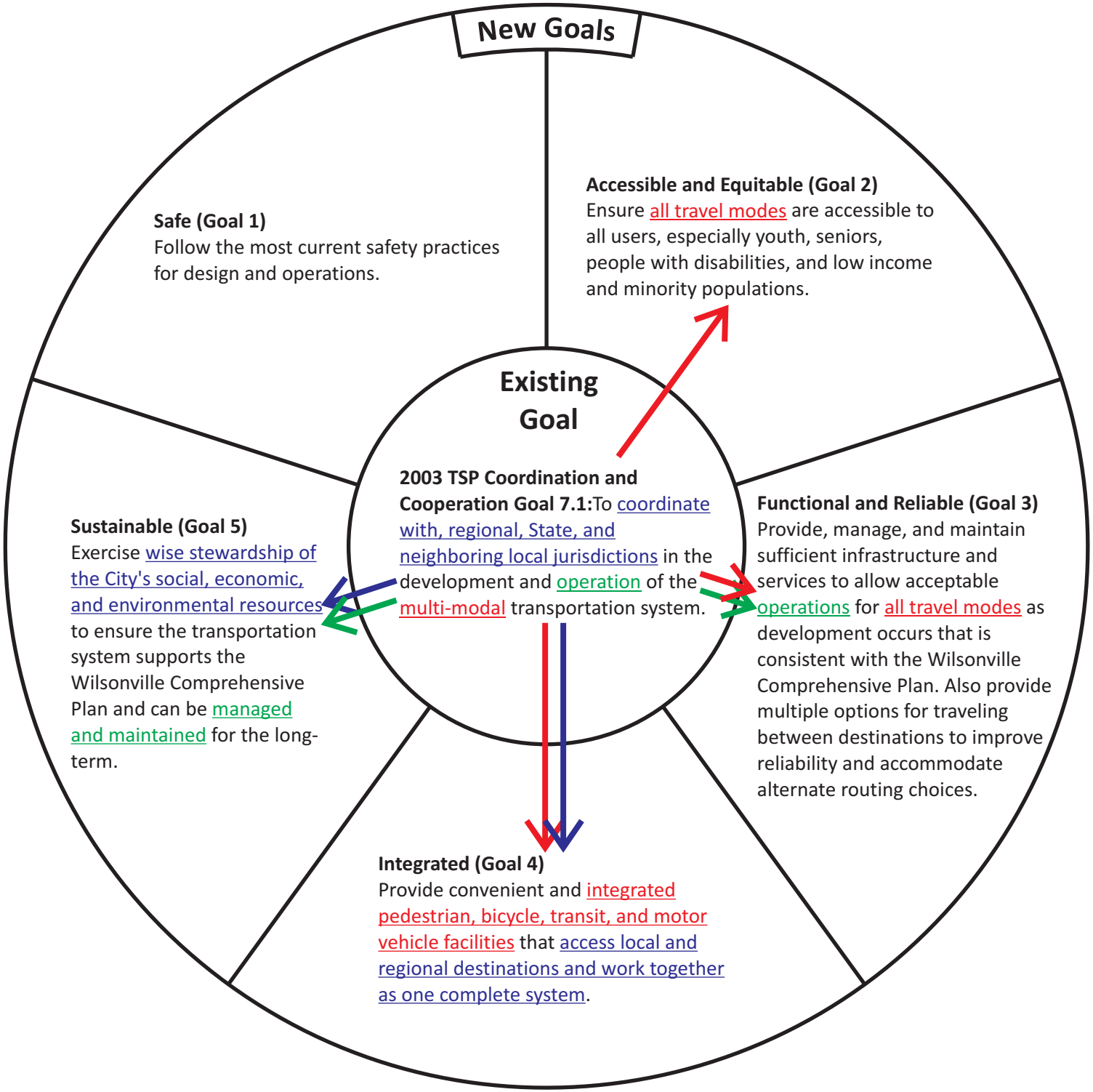

New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
2003 TSP Motor Vehicle Goal 4.1: To provide an interconnected motor vehicle system that will safely and efficiently provide for vehicle circulation and enhanced mobility.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.

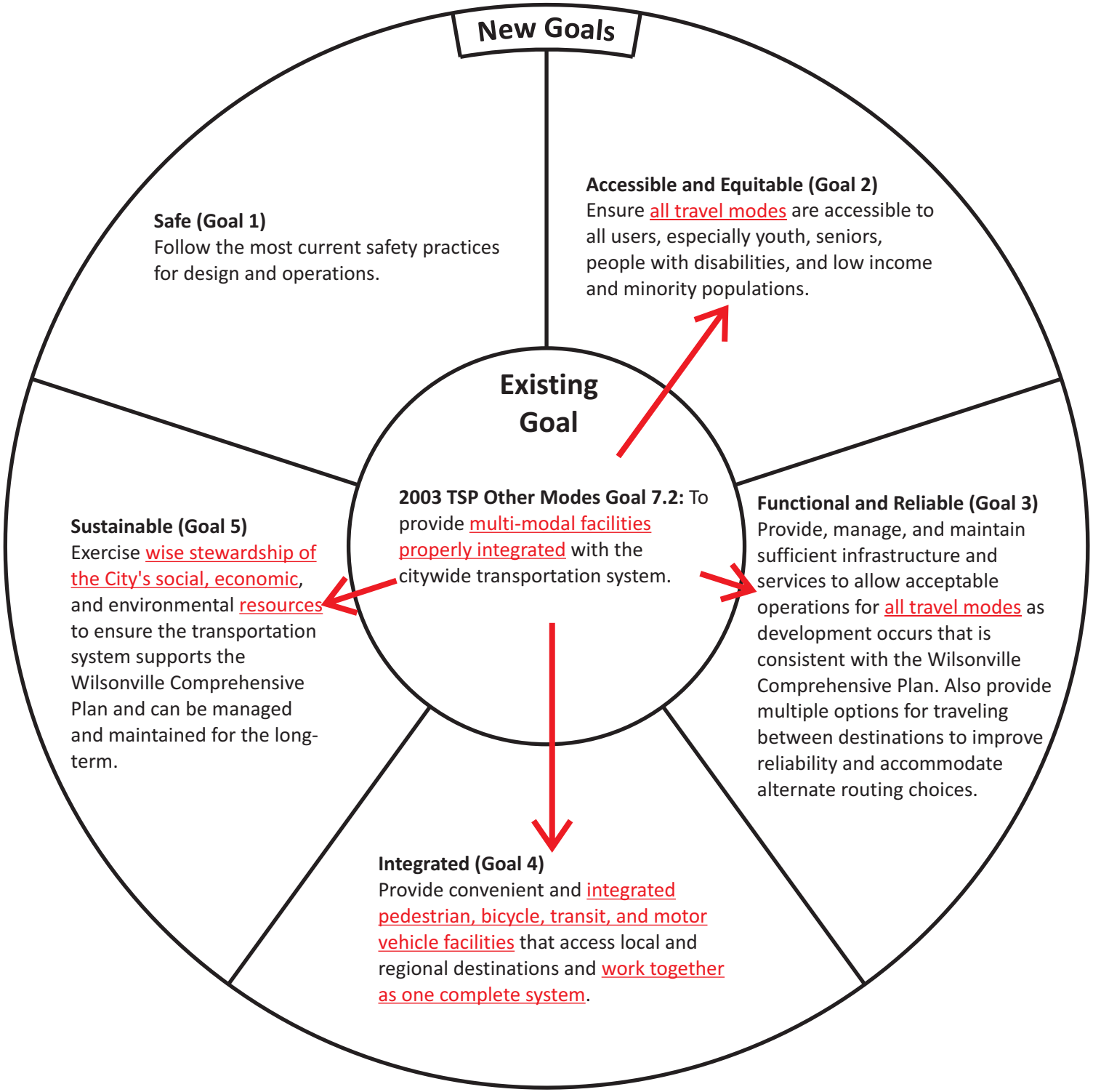

New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
2003 TSP Motor Vehicle Goal 4.2:
To establish transportation system standards for each of the motor vehicle, transit, marine, rail, and non-motorized systems that reflect the proposed transportation network and adopted land uses, and emphasize the movement of people over vehicles.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.


New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
Bicycle and Pedestrian Master Plan Goal (Same as 2003 TSP Goal 5.1):
To promote non-motorized travel and provide a safe, interconnected system of pedestrian and bicycle facilities.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.


New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
Transit Master Plan Goal 1 (Same as 2003 TSP Goal 6.1): To promote an effective transit system that is a viable alternative to the single occupant vehicle; responds to the mobility needs of residents, employers, and employees; permits easy shifts from one mode to another; offers choice and convenience; and connects to other regional transportation systems.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.


New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
Transit Master Plan Goal 2 (Same as 2003 TSP Goal 8.1): To develop and implement Transportation Demand Management strategies in order to create greater choice and mobility; reduce automobile trips; make more efficient use of the roadway system; and minimize air pollution.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.


New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
2003 TSP Coordination and Cooperation Goal 7.1:To coordinate with, regional, State, and neighboring local jurisdictions in the development and operation of the multi-modal transportation system.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.


New Goals
Safe (Goal 1)
Follow the most current safety practices for design and operations.
Accessible and Equitable (Goal 2)
Ensure all travel modes are accessible to all users, especially youth, seniors, people with disabilities, and low income and minority populations.
Existing Goal
2003 TSP Other Modes Goal 7.2: To provide multi-modal facilities properly integrated with the citywide transportation system.
Sustainable (Goal 5)
Exercise wise stewardship of the City's social, economic, and environmental resources to ensure the transportation system supports the Wilsonville Comprehensive Plan and can be managed and maintained for the long-term.
Functional and Reliable (Goal 3)
Provide, manage, and maintain sufficient infrastructure and services to allow acceptable operations for all travel modes as development occurs that is consistent with the Wilsonville Comprehensive Plan. Also provide multiple options for traveling between destinations to improve reliability and accommodate alternate routing choices.
Integrated (Goal 4)
Provide convenient and integrated pedestrian, bicycle, transit, and motor vehicle facilities that access local and regional destinations and work together as one complete system.

Evaluation Criteria Comparison Table

Evaluation Criteria Comparison Table: Cross-reference review of the evaluation criteria that will be used for the TSP update versus the original adopted policies and Metro RTFP requirements.

Adopted Transportation Policies	Safe		Accessible & Equitable		Functional & Reliable					Integrated			Sustainable				
	Geometric Design/User Expectations: Meets current design standards and is consistent with user expectations to improve overall safety of the transportation network.	Area of Special Safety Concern: Addresses the safety of an area of special concern in the City.	Equity: Contributes in closing the transportation accessibility gap between the general user and the low-income and minority populations.	Alternative Access Routes: Ensures all locations have multiple routes for providing access options to users and emergency vehicles.	Motor Vehicle Capacity: Enables roadways and intersections to have sufficient capacity to meet applicable operating standards under the 2035 future traffic scenario.	Freight Mobility: Improves freight mobility and reliability on the City's freight routes.	Efficient Operations: Improves the ability to efficiently operate the current and planned transportation infrastructure.	Bike/Pedestrian Network Connectivity: Improves overall connectivity of bicycle or pedestrian facilities, with emphasis on key system gaps.	Transit Service: Improves transit service to the City's neighborhoods, retail areas, and businesses.	Multi-Modal Connections: Improves connections to mode transfer locations to accommodate trips using more than one mode.	Multi-Modal Facilities: Accommodates the needs of multiple modes simultaneously.	Regional Compatibility: Compatible with other jurisdictions' transportation plans (adjacent cities, counties, Metro, and ODOT).	Economic Prosperity: Supports economic prosperity by providing transportation facilities for existing and planned land uses and freight movements, consistent with Wilsonville's Comprehensive Plan.	Environmental Sensitivity: Takes into account the natural environment in the planning, design, construction, and maintenance.	Vehicle-Miles Traveled (VMT): Reduces the expected vehicle-miles traveled (VMT), as measured using the project's travel demand model.	Fundability: Clear potential sources for funding both construction and maintenance.	Project Readiness: Takes into account the ease of implementation.
Land Use (2003 TSP)																	
Policy 3.1 - Consider revising the existing land use plan and implementing changes that respond to the capacity constraints of the future transportation system.																	
Policy 3.2 - Design a transportation system that accounts for adjacent land uses, including accessibility and access management.																	
Motor Vehicle (2003 TSP)																	
Policy 4.1.1 - Design the City street system per the street standards set forth in this TSP and to meet LOS D, which is the standard in the City. Council may approve exceptions to this standard.																	
Policy 4.1.2 - Require developers to provide transportation improvements as may be required or conditioned by a land use decision, expedited land use division, or limited land use decision, on a roughly proportional basis of the developer's impacts to the benefits received.																	
Policy 4.1.3 - Require bicycle and pedestrian linkages for all cul-de-sacs and encourage similar linkages between neighborhoods that would otherwise be separated.																	
Policy 4.1.4 - Connect the existing motor vehicle system within the City and across Interstate 5 (I-5) where appropriate. All connections shall be evaluated for their impacts to future operations of the City's road network.																	
Policy 4.1.5 - Promote other existing routes and/or provide connections to other regional roadways that provide alternative routes into and out of the City to reduce the reliance on I-5 and its interchanges within the City.																	
Policy 4.1.6 - Develop a system of signal coordination and tie in with the I-5 ITS system providing a system of integrated parallel arterials and collectors.																	
Policy 4.2.2 - Provide an adequate motor vehicle system that serves commercial vehicle/truck traffic to and from land uses requiring the use of commercial vehicles/trucks.																	
Policy 4.3.1 - Evaluate and minimize the environmental impacts of all new public road projects.																	
Bike and Pedestrian (2006 Bicycle and Pedestrian Master Plan)																	
1. Continue to improve and expand pedestrian and bicycle facilities, as needed throughout the community, with a focus on improved connectivity both within the City and with the Metro Regional Bicycle System.																	
2. Ensure that pedestrian and bicycle networks provide direct connections between major activity centers (e.g., civic, employment, and retail centers) and minimize conflicts with other modes of transportation.																	
3. Regard facilities for bicyclists and pedestrians as important parts of the overall transportation system and not just recreational facilities.																	
4. Increase the bicycle share mode throughout the City and improve bicycle access to the City's transportation system.																	

Evaluation Criteria Comparison Table: Cross-reference review of the evaluation criteria that will be used for the TSP update versus the original adopted policies and Metro RTFP requirements.

	Safe		Accessible & Equitable		Functional & Reliable					Integrated			Sustainable				
Adopted Transportation Policies	Geometric Design/User Expectations: Meets current design standards and is consistent with user expectations to improve overall safety of the transportation network.	Area of Special Safety Concern: Addresses the safety of an area of special concern in the City.	Equity: Contributes in closing the transportation accessibility gap between the general user and the low-income and minority populations.	Alternative Access Routes: Ensures all locations have multiple routes for providing access options to users and emergency vehicles.	Motor Vehicle Capacity: Enables roadways and intersections to have sufficient capacity to meet applicable operating standards under the 2035 future traffic scenario.	Freight Mobility: Improves freight mobility and reliability on the City's freight routes.	Efficient Operations: Improves the ability to efficiently operate the current and planned transportation infrastructure.	Bike/Pedestrian Network Connectivity: Improves overall connectivity of bicycle or pedestrian facilities, with emphasis on key system gaps.	Transit Service: Improves transit service to the City's neighborhoods, retail areas, and businesses.	Multi-Modal Connections: Improves connections to mode transfer locations to accommodate trips using more than one mode.	Multi-Modal Facilities: Accommodates the needs of multiple modes simultaneously.	Regional Compatibility: Compatible with other jurisdictions' transportation plans (adjacent cities, counties, Metro, and ODOT).	Economic Prosperity: Supports economic prosperity by providing transportation facilities for existing and planned land uses and freight movements, consistent with Wilsonville's Comprehensive Plan.	Environmental Sensitivity: Takes into account the natural environment in the planning, design, construction, and maintenance.	Vehicle-Miles Traveled (VMT): Reduces the expected vehicle-miles traveled (VMT), as measured using the project's travel demand model.	Fundability: Clear potential sources for funding both construction and maintenance.	Project Readiness: Takes into account the ease of implementation.
Transit (2008 Transit Master Plan)																	
Policy 1 - Increase public awareness of transit and other transportation options, so that customers can make informed decisions.																	
Policy 2 - Provide service which is coordinated, convenient, comfortable, and safe.																	
Policy 3 - Promote land use patterns and development standards that improve accessibility of transit to pedestrians, bicyclists, motorists, and special needs groups.																	
Policy 4 - Expand service to meet the demands of a growing population and employment base in Wilsonville.																	
Policy 5 - Strive to improve air quality and traffic congestion by increasing transit efficiency, promoting transportation options, and implementing transportation systems management.																	
Other Modes (2003 TSP)																	
Policy 7.1.2 - Continue to work in concert with the State, Metro, Clackamas and Washington Counties, and adjacent jurisdictions to develop and implement a regional transportation plan that is complementary to and supportive of the City's Plan while addressing regional concerns.																	
Policy 7.2.1 - Maintain access to the Willamette River so that the river may be used for transportation purposes in the future. Acquire or improve access to Willamette River for public docking purposes.																	
Policy 7.2.2 - Assist in efforts to improve the viability of the railroad, not only for freight, but for passenger service as well.																	
Policy 7.3.1 - Minimize conflicts and facilitate connections between modes of transportation.																	
Regional Transportation Functional Plan (RTFP)																	
Title 1, Transit System Design Sec 3.08.120A,B - Pedestrian and Bicycle connections to transit stops and destinations																	
Title 1, Pedestrian System Design Sec 3.08.130A - Pedestrian network connectivity																	
Title 1, Bicycle System Design Sec 3.08.140 - Bicycle network connectivity																	
Title 1, Freight System Design Sec 3.08.150 - Freight plan																	
Title 1, Transportation System Management and Operations Sec 3.08.160 - Operations of existing infrastructure																	
Title 2, Transportation Needs Sec 3.08.210 - Regional and state needs																	
Title 2, Sec 3.08.220 Transportation Solutions - Strategy list																	
Title 2, Performance Targets and Standards Sec 3.08.230 - Evaluate safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit mode shares																	

Appendix D

TRANSPORTATION SYSTEM INVENTORY (DKS, 2011)

DKS Associates
TRANSPORTATION SOLUTIONS

Technical Memorandum #4

TO: Project Management Team

FROM: Scott Mansur, P.E., Carl Springer, P.E., Brad Coy, E.I.T.

DATE: November 16, 2011

SUBJECT: **Wilsonville Transportation System Plan Update – Transportation System Inventory (Task 3.1)** P10068-007

This memorandum documents the transportation system inventory for the Wilsonville Transportation System Plan (TSP) update. It identifies transportation facilities for all travel modes and related operational and safety deficiencies.

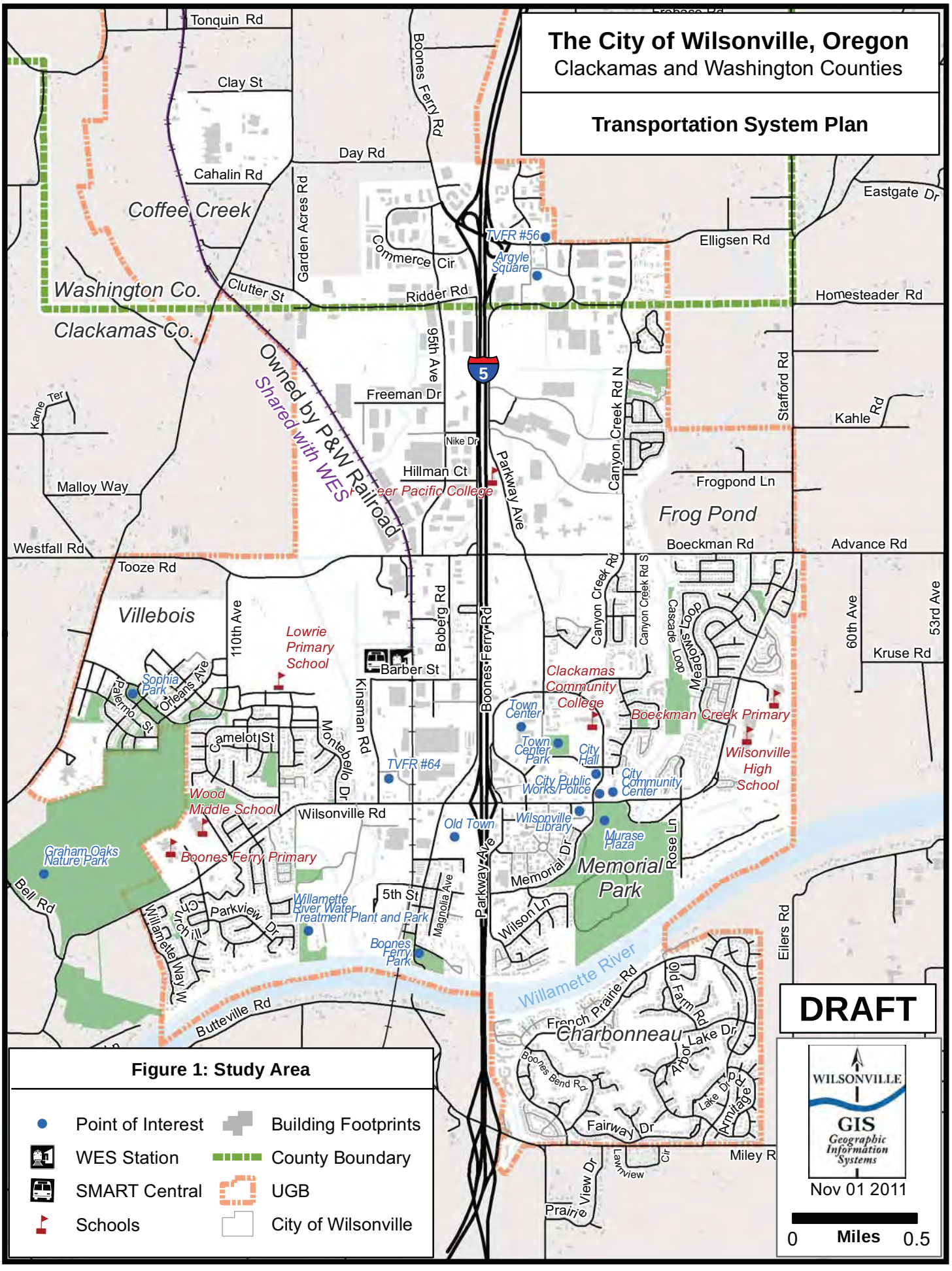
Study Area

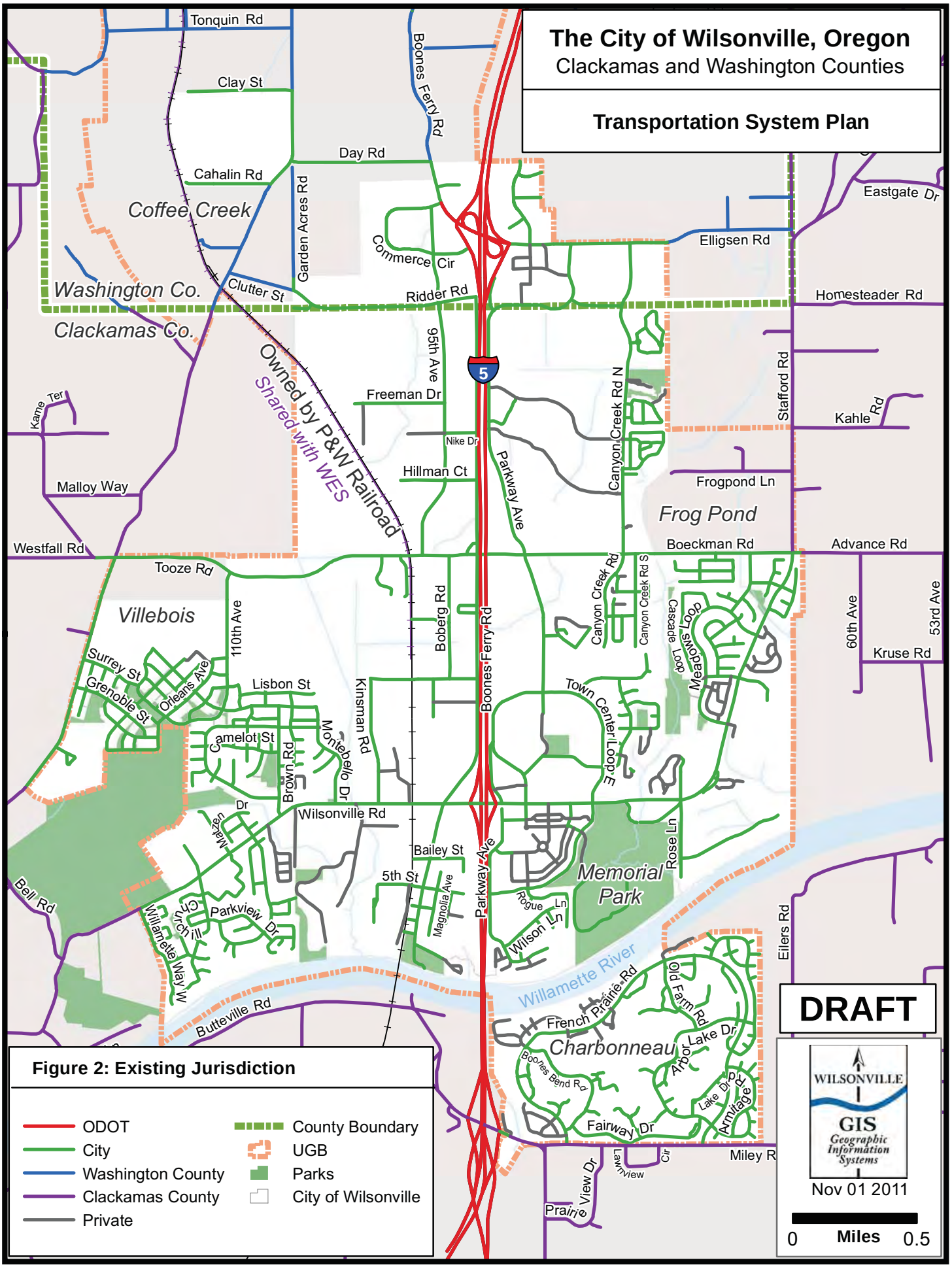
The City of Wilsonville is located on the southern edge of the Portland Metro jurisdictional boundary and is approximately 18 miles south of downtown Portland and 29 miles north of Salem. The majority of the City is located within Clackamas County, but the northern section is within Washington County. The Wilsonville TSP study area encompasses lands within the City's Urban Growth Boundary (UGB). Figure 1 shows the Wilsonville TSP study area and the associated roadway network, parks, other City landmarks, and political boundaries. The Willamette River also runs east-west through the southern section of the City and is a significant geographic constraint for system planning.

Street Inventory

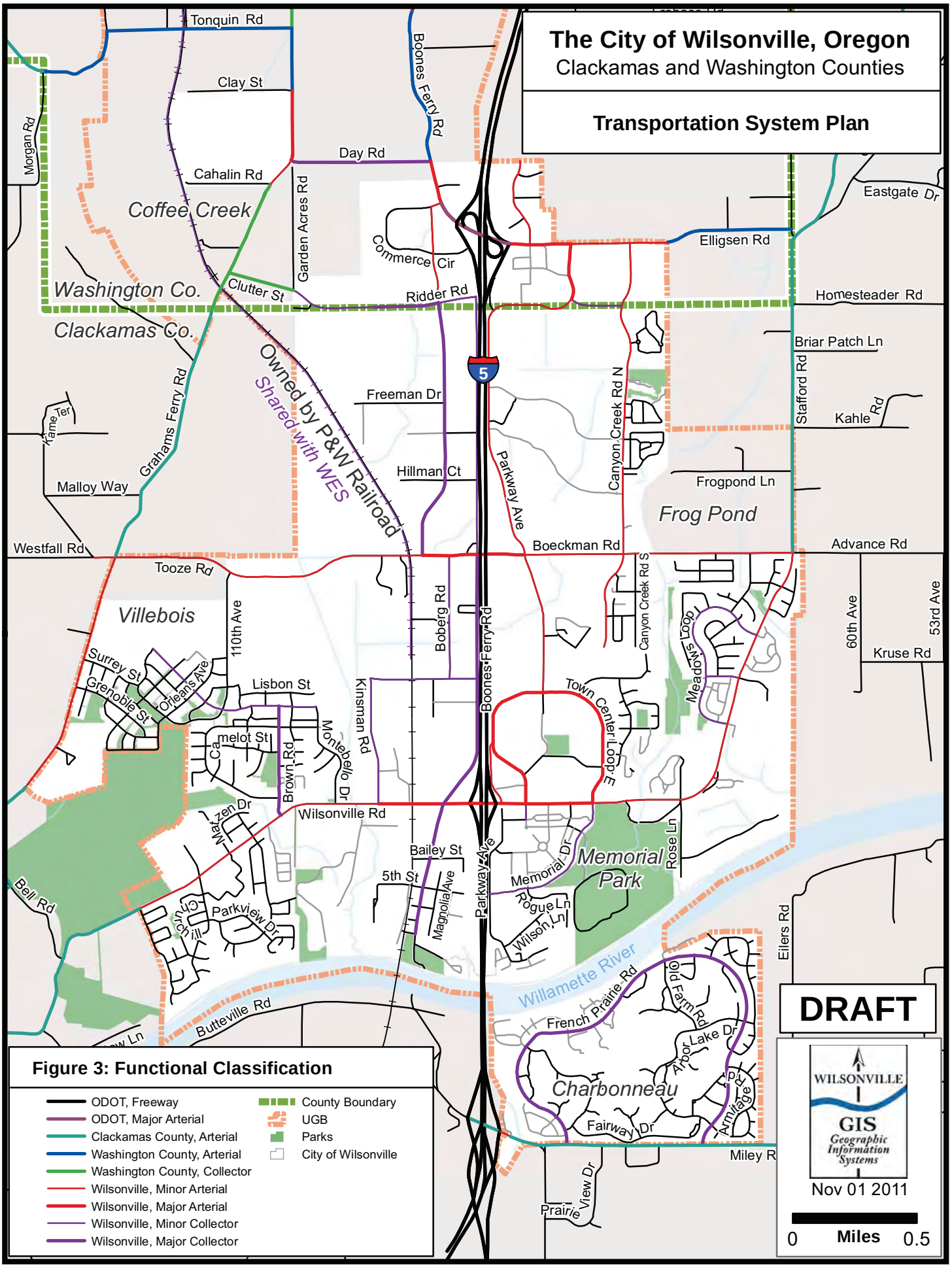
The primary regional roadway for the City of Wilsonville is Interstate-5 (I-5), which runs north-south through the center of the City. I-5 has interchanges with Wilsonville Road and Elligsen Road and provides access to the Portland and Salem metropolitan areas and beyond. The roadways in the study area are managed by four different agencies or jurisdictions: the City of Wilsonville, Clackamas County, Washington County, and the Oregon Department of Transportation (ODOT). The maintenance, access, and required roadway standards depend on the jurisdiction responsible for the subject facility. Each jurisdiction also has different roadway functional classification systems. Roads and streets are classified based on their function, which in turn determines standards for connectivity, mobility, and access. Figure 2 shows the street jurisdiction, and Figure 3 shows the functional classifications.

117 Commercial Street NE, Suite 310, Salem, Oregon 97301
(503) 391-8773 | (503) 391-8701 fax
www.dksassociates.com


The City of Wilsonville, Oregon
Clackamas and Washington Counties
Transportation System Plan
Tonquin Rd
Clay St
Day Rd
Cahalin Rd
Coffee Creek
Garden Acres Rd
Boones Ferry Rd
Commerce Cir
TVFR #56
Argyle Square
Eastgate Dr
Elligsen Rd
Homesteader Rd
Washington Co.
Clackamas Co.
Clutter St
Ridder Rd
95th Ave
Owned by P&W Railroad
Shared with WES
Freeman Dr
5
Nike Dr
Hillman Ct
Parkway Ave
Canyon Creek Rd N
Stafford Rd
Kahle Rd
Kame Ter
Malloy Way
Frogpond Ln
Frog Pond
Westfall Rd
Tooze Rd
Boeckman Rd
Advance Rd
Villebois
110th Ave
Lowrie Primary School
Boberg Rd
Barber St
Canyon Creek Rd
Canyon Creek Rd S
Cascade Loop
Meadows Loop
60th Ave
53rd Ave
Kruse Rd
Sophia Park
Orleans Ave
Palermo St
Kinsman Rd
Clackamas Community College
Town Center
Town Center Park
City Hall
Boeckman Creek Primary
Wilsonville High School
Camelot St
Montebello Dr
TVFR #64
City Public Works/Police
City Community Center
Wood Middle School
Wilsonville Rd
Old Town
Wilsonville Library
Murase Plaza
Memorial Dr
Rose Ln
Graham Oaks Nature Park
Boones Ferry Primary
Memorial Park
Bell Rd
Willamette Way W
Parkview Dr
Willamette River Water Treatment Plant and Park
5th St
Magnolia Ave
Parkway Ave
Wilson Ln
Boones Ferry Park
Willamette River
Eilers Rd
Butteville Rd
French Prairie Rd
Old Farm Rd
Charbonneau
Arbor Lake Dr
Boones Bend Rd
Lake Dr
Armitage Pl
Fairway Dr
Miley R
Lawnview Cir
Prairie View Dr
DRAFT
WILSONVILLE GIS Geographic Information Systems
Nov 01 2011
0 Miles 0.5
Figure 1: Study Area
Point of Interest
WES Station
SMART Central
Schools
Building Footprints
County Boundary
UGB
City of Wilsonville
M:\Intern2011\TSP_project\TSP_maps\Figure1_Study_Area.mxd



M:\Intern2011\TSP_project\TSP_maps\Figure2_Existing_Jurisdiction.mxd



M:\Intern2011\TSP_project\TSP_maps\Figure3_Functional_Classification.mxd

As shown in Figure 2, the segment of SW Boones Ferry Road from the I-5/Elligsen Road interchange is an ODOT highway (i.e., OR 141) and is designated as a District Highway. There are also multiple roadways under Washington County or Clackamas County jurisdiction; these are primarily the higher classification roadways on the edges of town. The remaining roadways (which include the majority of roadways in the TSP study area) are under City of Wilsonville jurisdiction.

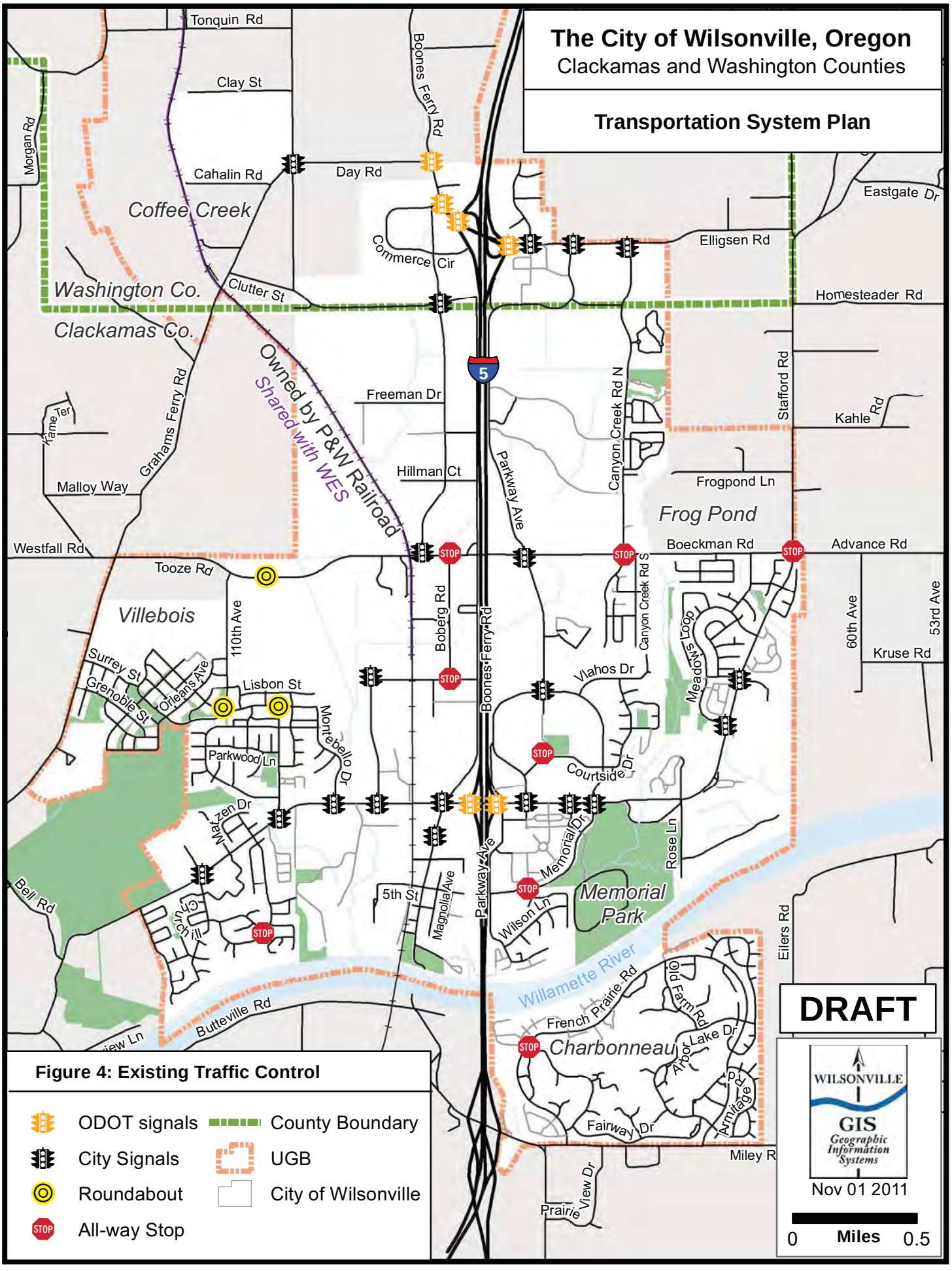
Within Wilsonville, there are a handful of arterial streets that are intended to provide mobility throughout the City (see Figure 3). These arterials are typically wider and have higher posted speed limits. A distinction is made between major and minor arterials to identify where wider cross-sections are needed to service higher traffic volumes that are accessing key destinations within the City (specifically near the I-5 interchanges).

The City also classifies some of its roadways as major and minor collectors. Figure 3 shows the collector streets within the City. The main purpose of the collector streets is to distribute traffic from the arterials to the City's neighborhoods and industrial areas. While these streets provide some mobility, they have a greater emphasis on providing access to adjacent land uses. The City's major collectors generally are wider and serve industrial areas, while the minor collectors generally are slightly narrower and serve residential areas.

Figure 4 identifies traffic control throughout the City. The construction of the wider cross-sections and the installation of the traffic signals, roundabouts, and all-way stops were originally performed to ensure adequate motor vehicle capacity of the roadway system. In addition, they also correspond closely with the higher roadway functional classifications of the intersecting roadways due to the importance of providing system mobility and the attractiveness of these routes to roadway users.

Due to current construction at the I-5/Wilsonville Road interchange, new roadway and intersection configurations will result once the project is completed (expected in December of 2011). The improvements are on Wilsonville Road between the Boones Ferry Road intersection on the west and the Town Center Loop West intersection on the east. In addition, the Parkway Avenue approach is being closed to reduce the number of accesses to Wilsonville Road in the interchange area. Figure 5, which is provided later in this memorandum when p.m. peak hour traffic volumes are provided, shows the improved lane geometries at the affected study intersections.

Other notable transportation improvement projects that have been completed since the City's prior 2003 TSP include the new transit center (i.e., SMART Central at Wilsonville Station), TriMet's Westside Express Service (WES) commuter rail station, collector (Barber Street) and local street improvements within the Villebois development including two new roundabouts, the Boeckman Road extension between 95th Avenue and 110th Avenue, and Barber Street improvements between Boones Ferry Road and Kinsman Road.


The City of Wilsonville, Oregon
Clackamas and Washington Counties
Transportation System Plan
Tonquin Rd
Clay St
Morgan Rd
Boones Ferry Rd
Cahalin Rd
Day Rd
Coffee Creek
Commerce Cir
Eastgate Dr
Elligsen Rd
Washington Co.
Clackamas Co.
Clutter St
Homesteader Rd
Owned by P&W Railroad
Shared with WES
5
Freeman Dr
Stafford Rd
Kahle Rd
Grahams Ferry Rd
Kame Ter
Hillman Ct
Parkway Ave
Canyon Creek Rd N
Malloy Way
Frogpond Ln
Frog Pond
Westfall Rd
Tooze Rd
Boeckman Rd
Advance Rd
Villebois
110th Ave
Boberg Rd
Canyon Creek Rd S
Meadows Loop
60th Ave
53rd Ave
Kruse Rd
Surrey St
Grenoble St
Orleans Ave
Lisbon St
Vlahos Dr
Montebello Dr
Parkwood Ln
Courtside Dr
Matzen Dr
Memorial Dr
Rose Ln
Bell Rd
5th St
Magnolia Ave
Wilson Ln
Memorial Park
Willamette River
Eilers Rd
Butteville Rd
French Prairie Rd
Old Farm Rd
Charbonneau
Arbor Lake Dr
Fairway Dr
Armitage Rd
Miley R
Prairie View Dr
DRAFT
WILSONVILLE
GIS
Geographic Information Systems
Nov 01 2011
0
Miles
0.5
Figure 4: Existing Traffic Control
ODOT signals
City Signals
Roundabout
All-way Stop
County Boundary
UGB
City of Wilsonville
M:\Intern2011\TSP_project\TSP_maps\Figure4_Existing_Traffic_Control.mxd

Traffic Operations

Traffic operations during the p.m. peak hour were analyzed at 35 key study intersections within Wilsonville to determine existing congestion and ease of circulation throughout the City. Figure 5 shows the locations, traffic control, lane geometries, and p.m. peak hour traffic volumes of the study intersections that were used for the operations analysis.[1]

Performance Standards

Depending on roadway jurisdiction, the study intersections are required to meet specified mobility standards. The standards are for the p.m. peak hour and are based on either the intersection level of service (LOS) or volume to capacity (v/c) ratio.[2] Table 1 lists the applicable mobility standards for each jurisdiction and intersection type.

Table 1: Applicable Intersection Mobility Standards

Jurisdiction	Intersection Type	Mobility Standard
City of Wilsonville	All Public Intersections	LOS D[a]
ODOT	Interchange Ramp Terminals	≤ 0.85[b]
	All Other ODOT Intersections (i.e., on OR 141)	≤ 0.99[c]
Washington County	All Intersections	≤ 0.99 (highest hour) ≤ 0.90 (2nd highest hour)[d]
Clackamas County	All Intersections	LOS D[e]

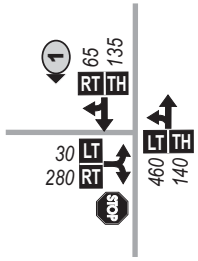
[a] *City of Wilsonville Code*, City of Wilsonville Section 4.140, p.163.
[b] *1999 Oregon Highway Plan*, ODOT, 1999; Policy Element, page 78-79; which also provides allowance for increasing the standard at interchange ramps to 0.90 v/c if certain requirements are met.
[c] *1999 Oregon Highway Plan*, ODOT, 1999; Policy Element; Table 7, page 84.
[d] *Washington County 2020 Transportation Plan*, Adopted Oct. 29, 2002; Table 5; the "acceptable" standard is provided for "other urban areas."
[e] *Clackamas County Comprehensive Plan*, Latest text revision on Jan. 17, 2009; Chapter 5.

The operating performance at each study intersection was evaluated using Synchro™ software, which employs methodology from the *2000 Highway Capacity Manual*.[3] Table A in the appendix lists the study intersection performance and applicable mobility standards. The following three unsignalized study intersections do not meet applicable adopted mobility standards due to high delays on the stopped approaches:

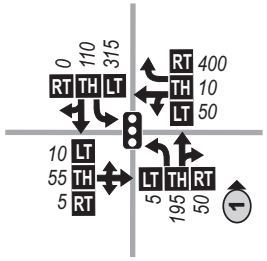
- Stafford Road/65th Avenue (Clackamas County)
- Miley Road/I-5 Southbound Ramp (ODOT)
- Miley Road/NE Airport Road (Clackamas County)

[1] Original p.m. peak hour turn movement counts collected on various dates from 2008 to 2011, and detailed count data is provided in the appendix. Balancing and rounding were performed to adjust for differences between adjacent intersections.
[2] The level of service (LOS) is a "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. More detailed descriptions are provided in the appendix. The v/c ratio is a decimal representation (typically between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection.
[3] *2000 Highway Capacity Manual*, Transportation Research Board, Washington, D.C. 2000.

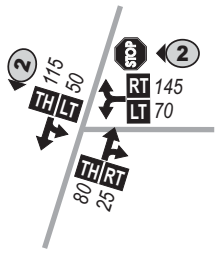
1 Grahams Ferry Rd/Tonquin Rd



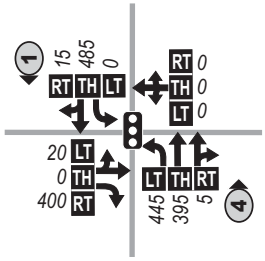
2 Grahams Ferry Rd/Day Rd



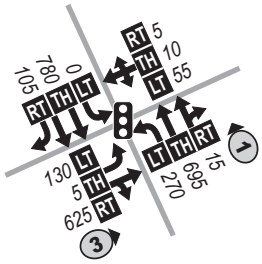
3 Grahams Ferry Rd/Clutter Rd



4 Boones Ferry Rd/Day Rd



5 Boones Ferry Rd/95th Av



LEGEND

- 00 - Study Intersection
- Lane Configuration
- 000 - PM Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left•Thru•Right)
- 0 - PM Peak Hour Bike Approach Volume
- Traffic Signal
- STOP - Stop Sign

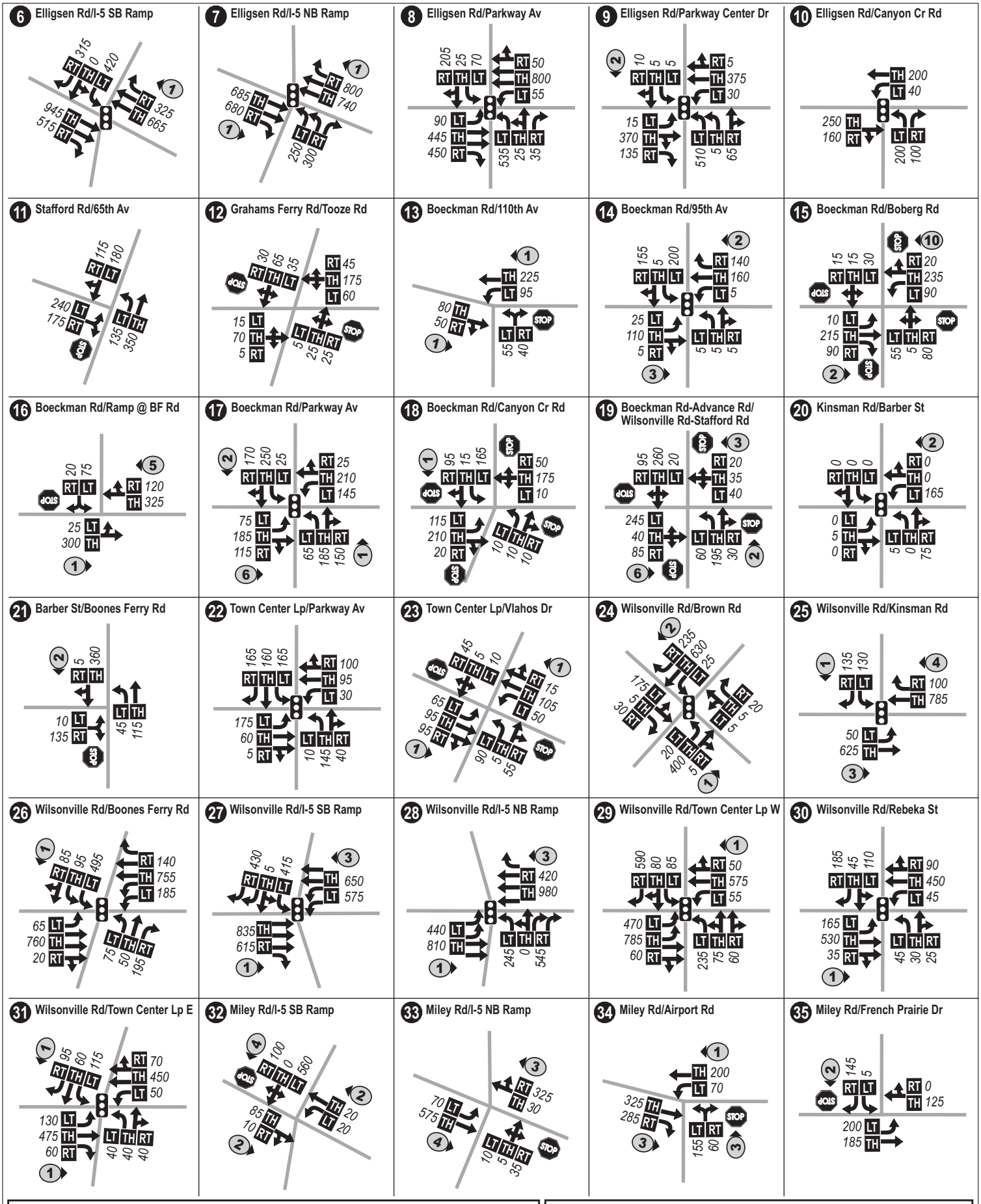
NO SCALE

DKS Associates TRANSPORTATION SOLUTIONS

CITY OF WILSONVILLE
Transportation System Plan

2011 PM Peak Hour Traffic Volumes (Page 1 of 2)

FIGURE 5a


6 Elligsen Rd/I-5 SB Ramp
7 Elligsen Rd/I-5 NB Ramp
8 Elligsen Rd/Parkway Av
9 Elligsen Rd/Parkway Center Dr
10 Elligsen Rd/Canyon Cr Rd
11 Stafford Rd/65th Av
12 Grahams Ferry Rd/Tooze Rd
13 Boeckman Rd/110th Av
14 Boeckman Rd/95th Av
15 Boeckman Rd/Boberg Rd
16 Boeckman Rd/Ramp @ BF Rd
17 Boeckman Rd/Parkway Av
18 Boeckman Rd/Canyon Cr Rd
19 Boeckman Rd-Advance Rd/ Wilsonville Rd-Stafford Rd
20 Kinsman Rd/Barber St
21 Barber St/Boones Ferry Rd
22 Town Center Lp/Parkway Av
23 Town Center Lp/Vlahos Dr
24 Wilsonville Rd/Brown Rd
25 Wilsonville Rd/Kinsman Rd
26 Wilsonville Rd/Boones Ferry Rd
27 Wilsonville Rd/I-5 SB Ramp
28 Wilsonville Rd/I-5 NB Ramp
29 Wilsonville Rd/Town Center Lp W
30 Wilsonville Rd/Rebeka St
31 Wilsonville Rd/Town Center Lp E
32 Miley Rd/I-5 SB Ramp
33 Miley Rd/I-5 NB Ramp
34 Miley Rd/Airport Rd
35 Miley Rd/French Prairie Dr
LEGEND
00 - Study Intersection
- Lane Configuration
000 - PM Peak Hour Traffic Volume
LT TH RT - Volume Turn Movement
Left•Thru•Right
0 - PM Peak Hour Bike Approach Volume
- Traffic Signal
STOP - Stop Sign
NO SCALE
DKS Associates
TRANSPORTATION SOLUTIONS
CITY OF WILSONVILLE
Transportation System Plan
2011 PM Peak Hour Traffic Volumes (Page 2 of 2)
FIGURE 5b

Collision Analysis

Collision records for the entire City of Wilsonville were obtained from ODOT for the years 2006 through 2010. During these five years, there were no fatal collisions reported on Wilsonville jurisdiction roadways.[4] In addition, the Oregon Traffic Safety Performance Plan[5] indicates that the Wilsonville average (4.00) was well below state averages (5.10) for fatal and injury collisions per 1,000 population in the year 2009. A review of collisions at the study intersections in Wilsonville did not identify any intersection-related safety concerns. Table B in the appendix lists the breakdown of collisions by severity and the estimated collision rate for each study intersection. None of the study intersections had collision rates greater than 1.0 collision per million entering vehicles (MEV), which is the standard engineering threshold used to indicate the need for additional investigation.

Corridor collision analysis was performed for OR 141 (Boones Ferry Road), which is currently an ODOT facility; however Washington County has recently requested a jurisdictional transfer that is likely to be approved by December 2011.[6] Table 2 lists the average collision rate for OR 141, which is slightly higher than other similar highways throughout Oregon. One of the primary factors contributing to the higher collision rate is the number of high volume intersections (where the majority of collisions occur) in close proximity to each other (i.e., at Day Road, 95th Avenue, and the two Elligsen Road interchange ramps). Because the intersection analysis discussed previously (and shown in Table B in the appendix) does not indicate high collision rates at these intersections, no particular safety concern is expected. A review of the ODOT Safety Priority Index System (SPIS) also indicates there are no top five or ten percent locations on OR 141.

Table 2: Collision Rates Compared with Statewide Averages

Facility	Total Collision Rate[a,b]
OR 141 (Boones Ferry Rd)	2.58 per million VMT
Oregon Principal Arterials in Urban Cities (Statewide Average)	2.37 per million VMT[c]

[a] Collision Rate = (collisions*1,000,000)/(years*365*segment length*AADT)
[b] VMT = Vehicle Miles Traveled
[c] Source: 2009 Oregon Traffic Crash Summary (Sep. 2010), Table II (average of rates for 2005 to 2009)

Public Transportation

South Metro Area Regional Transit (SMART) operates several fixed routes that serve Wilsonville and make connections to TriMet in Portland, Cherriots in Salem, and Canby Area Transit.[7] Figure 6 shows the transit routes and facilities. The new "SMART Central at Wilsonville Station" transit center opened in 2009 and provides connections to all SMART routes, the WES commuter rail, and other regional transit systems. Besides the new transit center, the other main transfer locations are the Tualatin Park and Ride (Route 2X), Barbur Boulevard Transit Center (Route 2X), Salem Transit Center (Route 1X), and Canby Transit Center (Route 3). SMART also operates a shuttle service

[4] While no fatal collisions occurred on City of Wilsonville jurisdiction roadways, there were three fatalities along I-5 inside the Wilsonville City limits. Two involved pedestrians on interchange ramps and all three occurred at night.
[5] Oregon Traffic Safety Plan, Oregon Department of Transportation, Transportation Safety Division, 2011.
[6] Email from Clark Berry, Washington County, September 15, 2011.
[7] This information was obtained on March 20, 2009 from the SMART Web Page: http://www.ridesmart.com.

between Villebois and SMART Central as well as a dial-a-ride system that operates on a demand-responsive basis. Table 3 lists the SMART transit routes, frequency, and annual ridership data.

Table 3: Existing SMART Transit Routes, Frequency, and Ridership Data

Route	Frequency	Annual Ridership[a]
1X – Salem	30 minute service during peak hours	38,846
2X – Barber	30 minute service	85,347
3 – Charbonneau/Canby	30 minute service during peak hours	13,115
4 – Wilsonville Road	30 minute service	112,754
5 – 95th Avenue	30 minute service during peak hours	14,289
6 – Canyon Creek	30 minute service during peak hours	N/A
V – Villebois	30 minute service during peak hours	N/A

[a] 2007 Ridership information provided in the Wilsonville Transit Master Plan, August 2008.

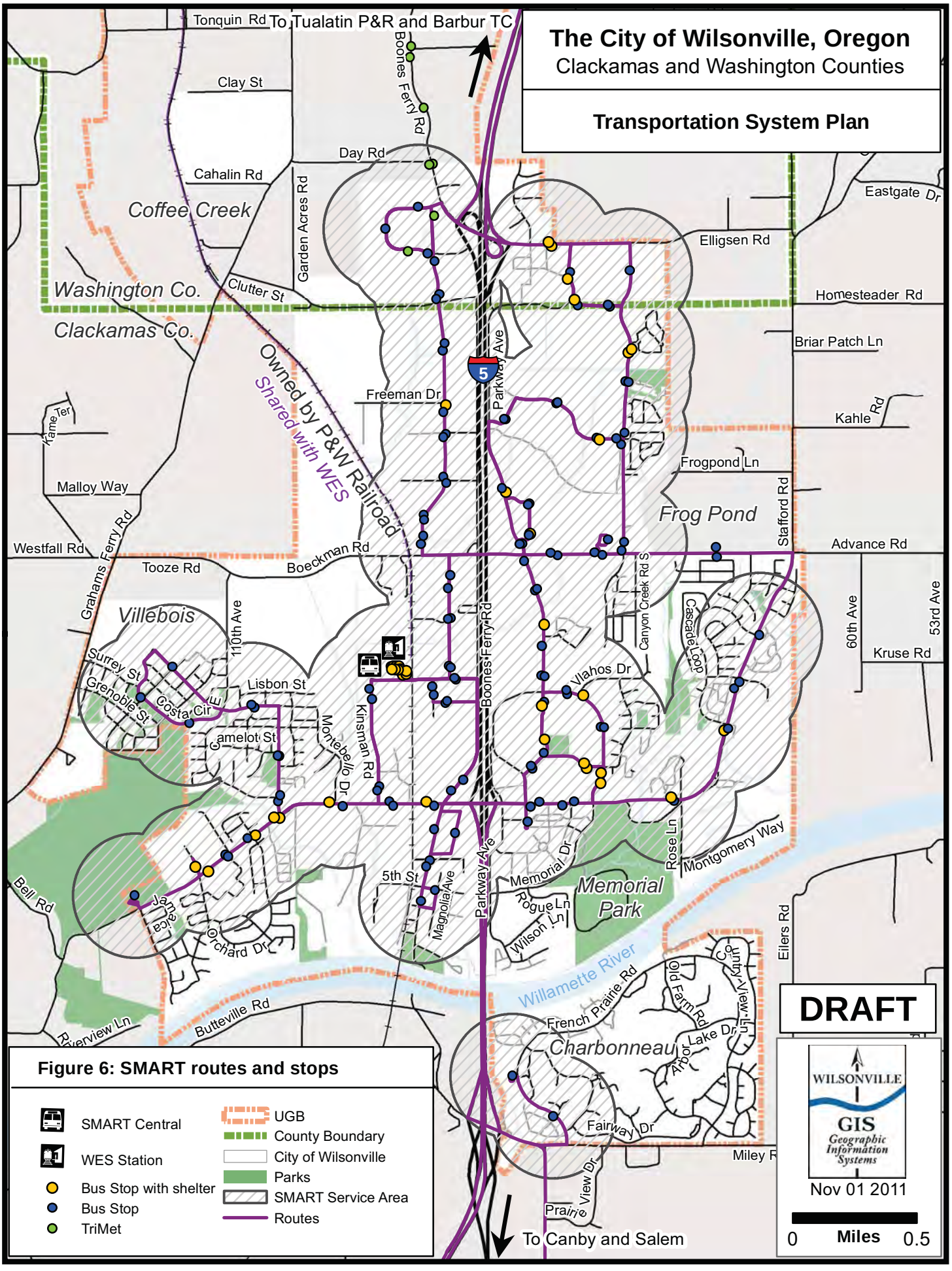
Another recent addition to transit service in Wilsonville is TriMet's Westside Express Service (WES), which is a commuter rail line that began operating in 2009. WES runs between Beaverton and Wilsonville, with stops in Tualatin and Tigard. Because the WES Commuter Rail station in Wilsonville is adjacent to the SMART Central transit center, it provides convenient connections to other SMART bus routes. WES can also be used for travel around the Portland Metro area because at the Beaverton Transit Center, it connects to multiple bus routes as well as both the red and blue MAX lines, which provide connections to Portland. During rush hour, WES Commuter Rail runs every 30 minutes.

Bicycle Inventory

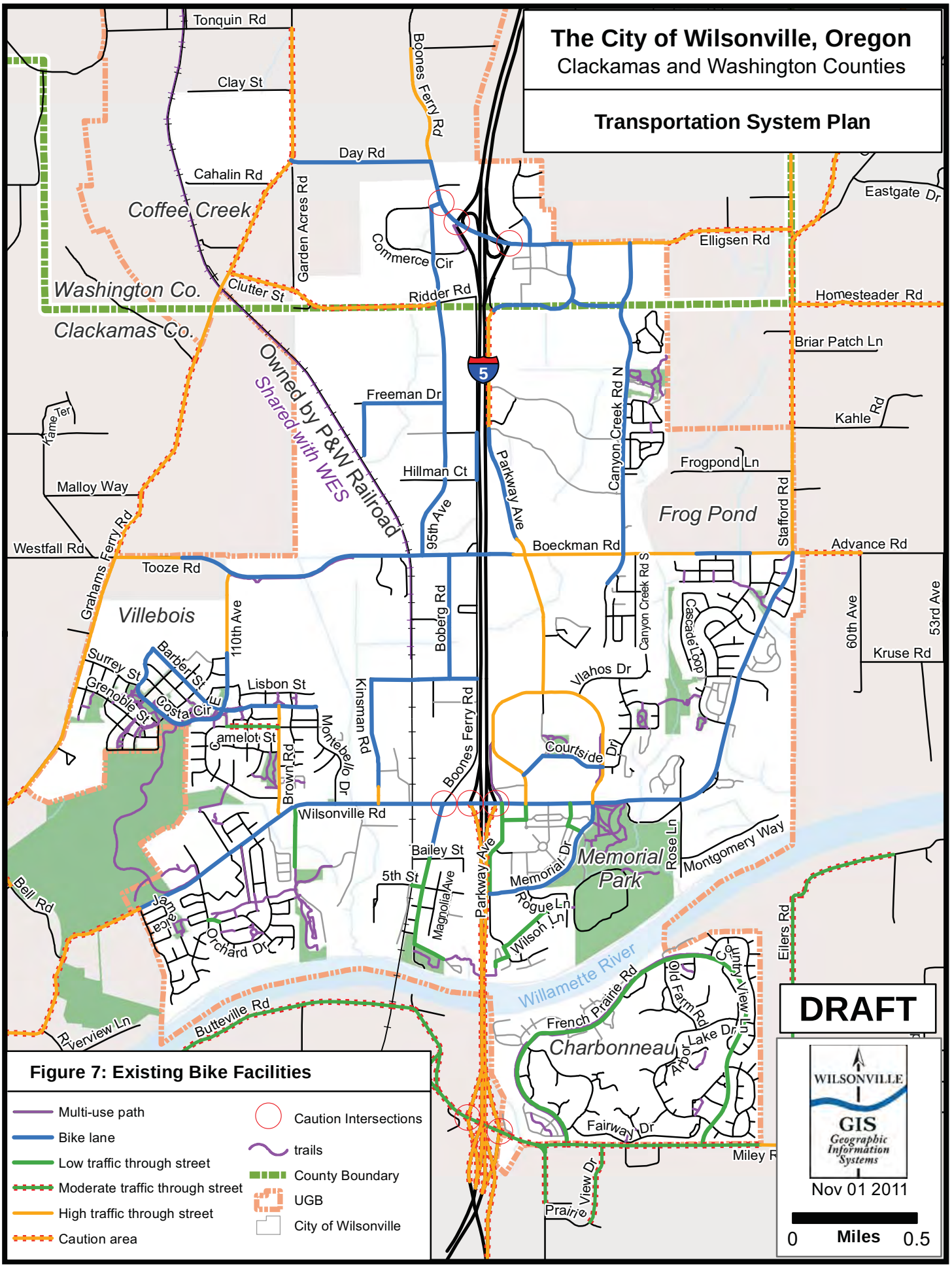
Wilsonville's bicycle system includes bike lanes and multi-use paths. Figure 7 shows the City's current bicycle infrastructure. The City's bike lanes are primarily located on newer or improved roadway facilities, but there are multiple system gaps. There are also multiple areas that lack bike lanes, including the Town Center retail area and Parkway Avenue just to the north of this area. However, there are three primary arterial and collector corridors that have connected bike lanes:

- Wilsonville Road (east-west corridor on south end of town)
- Elligsen Road (east-west corridor on north end of town)
- Kinsman Road/Boberg Road/95th Avenue (north-south corridor on the west side of I-5) with east-west connectivity on Barber Street and Boeckman Road

These three corridors provide important bicycle connectivity to the SMART Central transit center, which is located at the corner of Kinsman Road and Barber Street. SMART Central accommodates bicycle travel at the start and end of transit trips and also has bike lockers available free of charge. SMART also manages a free program called Bike Smart, which helps potential bicycle commuters to plan the best bike route to work.



M:\Intern2011\TSP_project\TSP_maps\Figure6_Smart_Routes_Stops.mxd



M:\Intern2011\TSP_project\TSP_maps\Figure7_Existing_Bike_Facilities.mxd

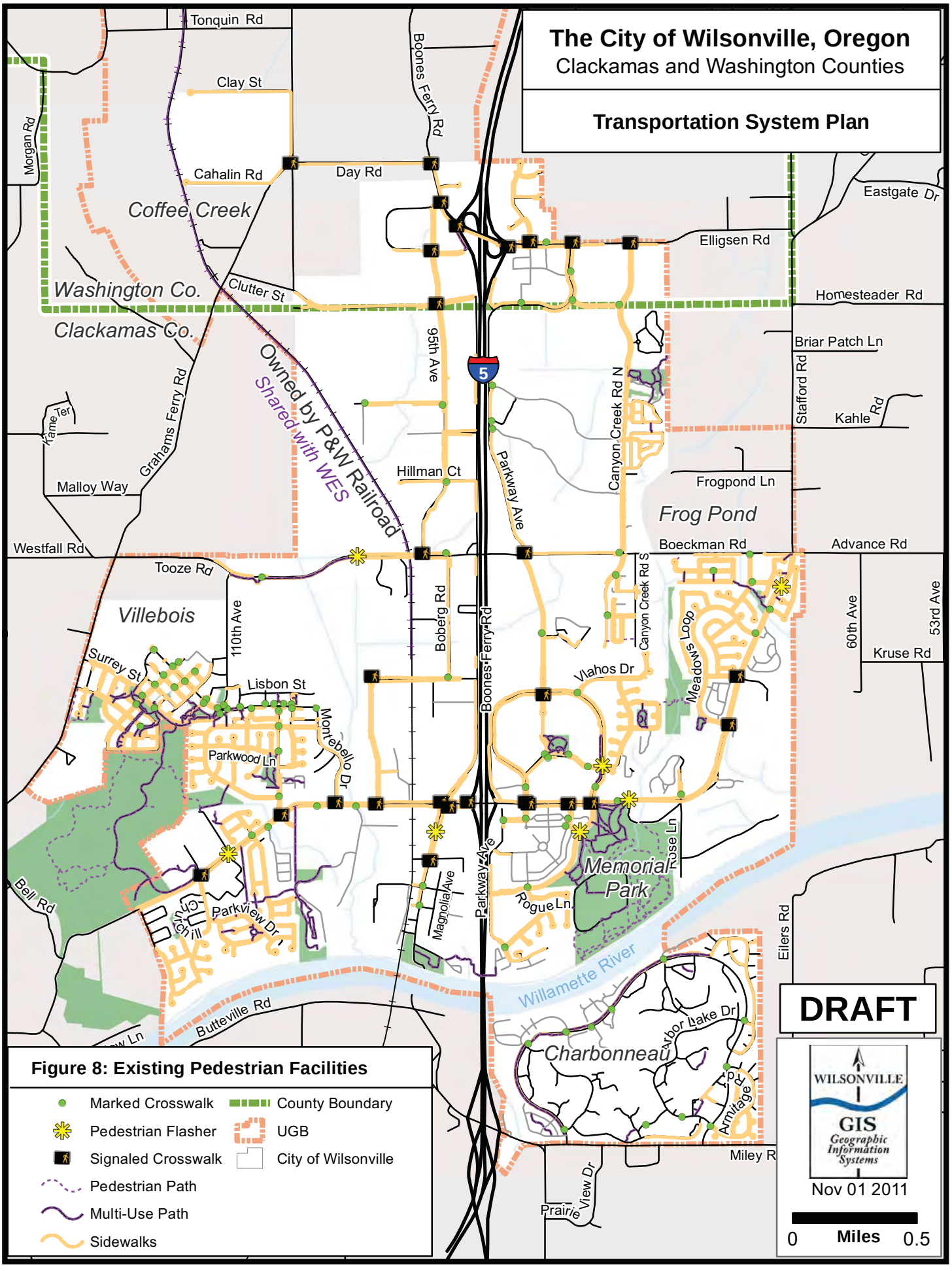
Pedestrian Inventory

Pedestrian travel is accommodated and enhanced in the City of Wilsonville by pedestrian facilities and their connectivity. Figure 8 shows the City's current pedestrian facilities, including sidewalks, multi-use paths, crossing treatments, and other related infrastructure. Within the City, there is good sidewalk connectivity in the developed areas, though there are some system gaps. The City also has multi-use paths that provide improved access and circulation for non-motorized modes of travel. These paths support recreation and improve the livability of the City. In addition to infrastructure that supports pedestrian travel, SMART manages a free program called Walk Smart, which encourages participants to walk more by providing tools and inspiration.

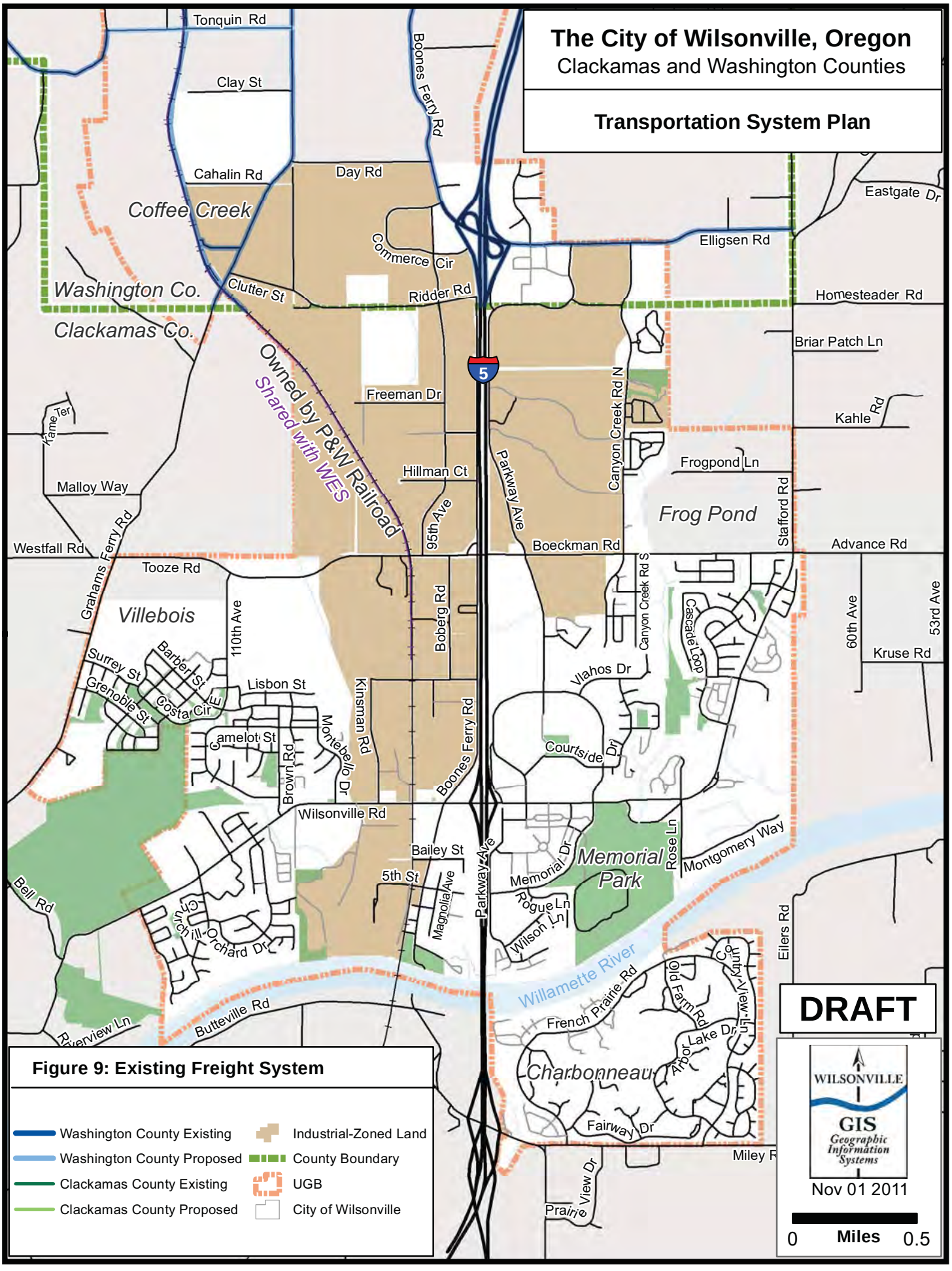
Freight System Inventory

The City of Wilsonville is an important destination for regional freight traffic due to the multiple industrial areas and distribution centers located within the City. Figure 9 shows the industrial areas and the associated freight routes that connect them to I-5. It also shows the freight connector roadways in Wilsonville that are identified in Metro's Regional Freight Plan[8] and the Washington County 2020 Transportation Plan.[9]

[8] *Regional Freight Plan 2035*, Metro, June 2010
[9] *Washington County 2020 Transportation* Plan, Adopted October 29, 2002; Figure 14



M:\Intern2011\TSP_project\TSP_maps\Figure8_Existing_Pedestrian_Facilities.mxd



M:\Intern2011\TSP_project\TSP_maps\Figure9_Existing_Freight_System.mxd

Transportation System Management and Operations (TSMO)

Transportation System Management and Operations (TSMO) refers to integrated transportation solutions that aim to make the most of the transportation system and minimize the need for capacity improvements. Existing TSMO strategies in the City of Wilsonville include the Wilsonville SMART Options program (run by SMART Transit) that encourages citizens to take alternate modes of transportation, including transit, bicycle, and walking. SMART Transit also has a Bike/Pedestrian Coordinator whose job description includes improving and expanding the City's walking and biking programs. In addition, the segment of I-5 through this corridor is generally equipped with cameras, ramp meters, detection, and communication equipment, all of which facilitate traffic flow.

Table 4 lists various additional TSMO improvements identified by the Portland Regional TSMO Plan[10] to improve the City's TSMO infrastructure. These improvements apply to the Tualatin-Wilsonville corridor (referred to in the Plan as Mobility Corridor 3). Specific project details are provided on pages 53 through 56 of the Portland Regional TSMO Plan.

Table 4: Recommended TSMO Improvements to the Tualatin-Wilsonville Corridor

Project Name	Goal/Objective	Facility	Implementation Time-Frame
Freeway Management	Reliability, Traveler Information, and Safety	I-5	1 to 5 years
Arterial Corridor Management	Reliability and Traveler Information	Elligsen Road-Boones Ferry Road (OR 141)	6 to 10 years
		Wilsonville Road	11+ years
		Stafford Road	11+ years
		SW 65th Ave	11+ years
Various Transportation Demand Management (TDM) Strategies	Quality of Life	Citywide (specific facilities dependent on given strategy)	Ranges from 1 to 10 years

Other Modes

Other transportation modes in the City of Wilsonville include rail, water, air, and pipeline. These systems are described below.

Rail

The Western Pacific Railroad line runs through the western portion of the City of Wilsonville. It is a single-track rail line operated by the Portland and Western Railroad. It carries both freight and passenger rail traffic. Figure 10 shows the locations of the four at-grade crossings and the one grade-separated crossing.

[10] *Portland Regional TSMO Plan*, Metro, June 2010

The Wilsonville Westside Express Service (WES) commuter rail station was also recently built adjacent to the SMART Central transit station and is currently the southern extent of the WES passenger rail service. The WES Commuter Rail runs between Wilsonville and Beaverton every 30 minutes during the weekday peak hours and connects to the TriMet MAX lines at the Beaverton Transit Center. Additional discussion is provided previously in the "Public Transportation" section of this memorandum.

Water

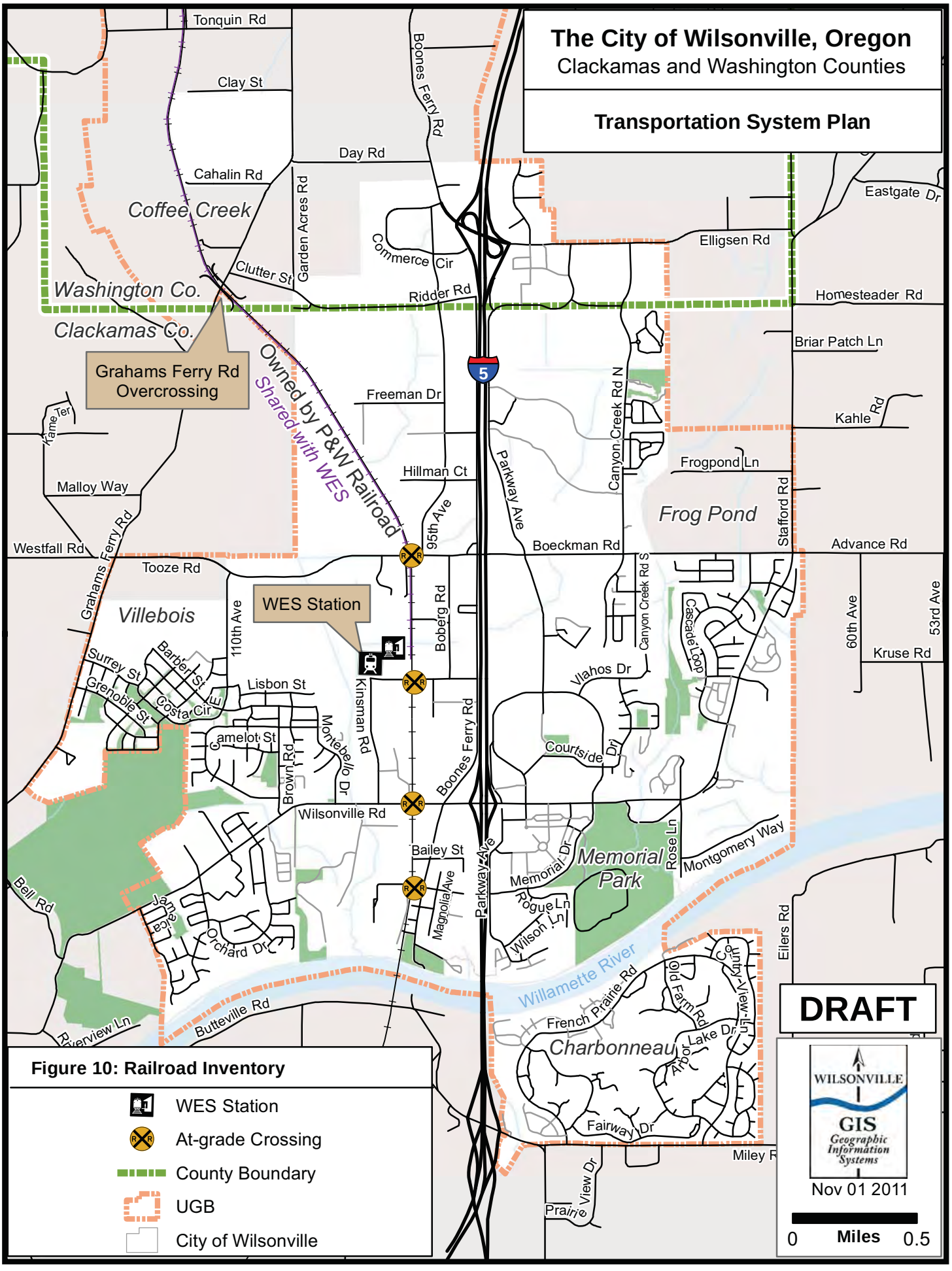
Historically, the Willamette River has been used for the shipment of raw timber and other bulk goods. Current use of the river as a through transportation route is limited to barge shipments of sand and gravel as well as some floats of timber. There are currently no origin or destination shipments within the City of Wilsonville. Recreational boating on the Willamette River is popular year-round.

Air

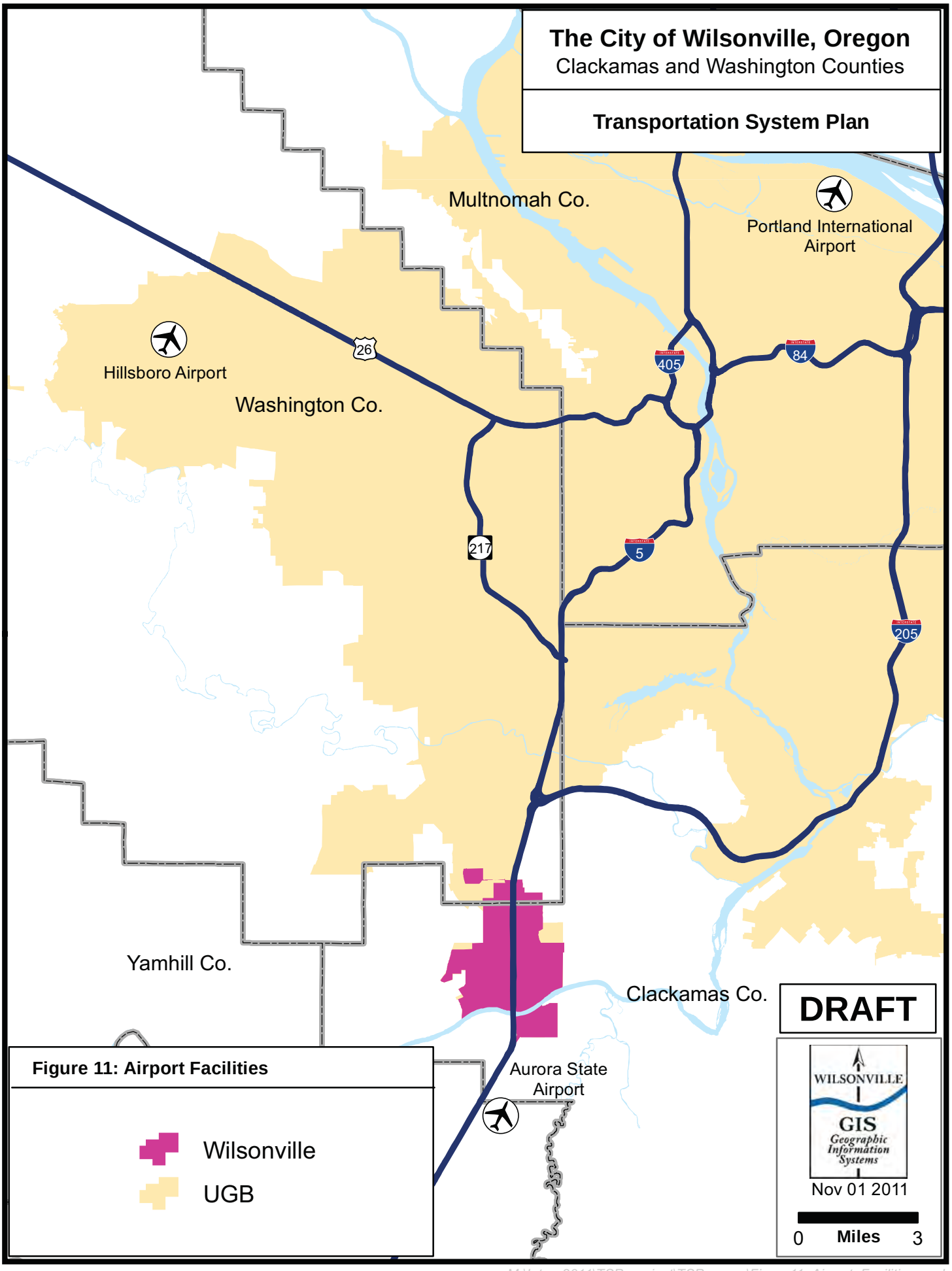
Regional and international air service for passengers and freight is provided at the Portland International Airport (PDX), which is located approximately 30 miles north of Wilsonville and is accessible via I-5 and I-205. The Aurora State Airport is located approximately 2 miles from Wilsonville and provide local commercial service and private aircraft use. Figure 11 shows the locations of the Portland and Aurora Airports and their vicinity to the City of Wilsonville.

Pipeline

Pipeline transportation in and through the City of Wilsonville includes transmission lines for electricity, cable television, and telephone services, and pipeline transport of water, sewer, and natural gas.



M:\Intern2011\TSP_project\TSP_maps\Figure10_Railroad Inventory.mxd


The City of Wilsonville, Oregon
Clackamas and Washington Counties
Transportation System Plan
Multnomah Co.
Portland International Airport
Hillsboro Airport
Washington Co.
26
405
84
217
5
205
Yamhill Co.
Clackamas Co.
Aurora State Airport
DRAFT
WILSONVILLE
GIS
Geographic Information Systems
Nov 01 2011
0 Miles 3
Figure 11: Airport Facilities
Wilsonville
UGB
M:\Intern2011\TSP_project\TSP_maps\Figure11_Airport_Facilities.mxd

Appendix

Turn Movement Counts

Level of Service Descriptions

HCM Intersection Operations

ODOT Collision Data

Additional Inventory Figures

Turn Movement Counts

LOCATION: GRAHAMS FERRY RD SW @ SW TONQUIN RD 1600-1800 Site: 0016
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11QZ 10-032 N 1 Thursday

Peak Hour Detail

Interval		Southbound GRAHAMS FERRY				Westbound				Northbound GRAHAMS FERRY				Eastbound TONQUIN			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	9	31	0	0	0	0	0	0	0	22	102	0	63	0	8	235
4:15 PM	0	13	34	0	0	0	0	0	0	0	19	107	0	89	0	6	268
4:30 PM	0	13	37	0	0	0	0	0	0	0	38	111	0	70	0	3	272
4:45 PM	0	21	30	0	1	0	0	0	0	0	31	86	0	69	0	9	247
5:00 PM	0	17	35	0	0	0	0	0	0	0	40	130	0	75	0	12	309
5:15 PM	0	14	31	0	0	0	0	0	0	0	32	132	0	64	0	7	280
5:30 PM	0	12	33	0	0	0	0	0	0	0	29	102	0	45	0	9	230
5:45 PM	0	7	25	0	0	0	0	0	0	0	21	71	0	42	0	10	176
Totals	0	106	256	0	1	0	0	0	0	0	232	841	0	517	0	64	2017
Entering			362				0				1073				581		
Exiting			296				0				773				947		
Vehicle Totals																	
Cars	0	104	246	0	0	0	0	0	0	0	228	783	0	477	0	64	1902
		98.1%	96.1%		0.0%						98.3%	93.1%		92.3%		100%	94.3%
Light	0	1	6	0	0	0	0	0	0	0	4	16	0	13	0	0	40
		0.9%	2.3%		0.0%						1.7%	1.9%		2.5%		0.0%	2.0%
Bike	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
		0.0%	0.0%		100%						0.0%	0.0%		0.0%		0.0%	0.0%
Medium	0	0	4	0	0	0	0	0	0	0	0	32	0	19	0	0	55
		0.0%	1.6%		0.0%						0.0%	3.8%		3.7%		0.0%	2.7%
Heavy	0	1	0	0	0	0	0	0	0	0	0	10	0	8	0	0	19
		0.9%	0.0%		0.0%						0.0%	1.2%		1.5%		0.0%	0.9%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: GRAHAMS FERRY RD SW @ SW TONQUIN RD 1600-1800 Site: 0016
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11QZ 10-032 N 1 Thursday

Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound GRAHAMS FERRY				Westbound				Northbound GRAHAMS FERRY				Eastbound TONQUIN			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	65	133	0	1	0	0	0	0	0	141	459	0	278	0	31	1108
Factor		0.77	0.90		0.25						0.88	0.87		0.93		0.65	0.90
Entering			198				0				600				309		
Factor			0.95								0.88				0.89		
Exiting			172				0				411				524		
Factor			0.25				0.93				0.77				0.88		
Peak Vehicles																	
Cars	0	64	130	0	0	0	0	0	0	0	139	433	0	254	0	31	1051
		98.5%	97.7%		0.0%						98.6%	94.3%		91.4%		100%	94.9%
Light	0	0	3	0	0	0	0	0	0	0	2	12	0	9	0	0	26
		0.0%	2.3%		0.0%						1.4%	2.6%		3.2%		0.0%	2.3%
Bike	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
		0.0%	0.0%		100%						0.0%	0.0%		0.0%		0.0%	0.1%
Medium	0	0	0	0	0	0	0	0	0	0	0	10	0	11	0	0	21
		0.0%	0.0%		0.0%						0.0%	2.2%		4.0%		0.0%	1.9%
Heavy	0	1	0	0	0	0	0	0	0	0	0	4	0	4	0	0	9
		1.5%	0.0%		0.0%						0.0%	0.9%		1.4%		0.0%	0.8%

LOCATION: GRAHAMS FERRY RD SW @ SW DAY ST 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RB 10-032 N Thursday

Peak Hour Detail

Interval		Southbound GRAHAMS FERRY				Westbound DAY ST				Northbound GRAHAMS FERRY				Eastbound DAY ST			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	0	27	69	0	83	2	9	0	12	40	0	0	3	21	3	269
4:15 PM	0	0	32	102	0	84	1	17	2	9	41	1	0	0	15	2	306
4:30 PM	0	0	27	85	0	91	1	10	2	15	51	1	0	1	23	5	312
4:45 PM	0	0	30	74	0	78	3	8	2	9	38	0	0	1	8	1	252
5:00 PM	0	0	21	95	0	109	6	13	0	15	65	1	0	0	11	2	338
5:15 PM	0	2	27	78	0	109	5	6	0	11	47	2	0	2	11	0	300
5:30 PM	0	1	17	65	0	88	2	10	0	17	38	1	0	1	8	1	249
5:45 PM	0	1	20	46	0	64	4	5	0	5	27	0	0	0	10	1	183
Totals	0	4	201	614	0	706	24	78	6	93	347	6	0	8	107	15	2209
Entering			819				808				446				130		
Exiting			1068				814				287				34		
Vehicle Totals																	
Cars	0	4	181	587	0	658	24	69	6	88	324	6	0	8	107	15	2077
		100%	90.0%	95.6%		93.2%	100%	88.5%	100%	94.6%	93.4%	100%		100%	100%	100%	94.0%
Light	0	0	11	7	0	16	0	8	0	4	11	0	0	0	0	0	57
		0.0%	5.5%	1.1%		2.3%	0.0%	10.3%	0.0%	4.3%	3.2%	0.0%		0.0%	0.0%	0.0%	2.6%
Bike	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%		0.0%	0.0%	0.0%	0.0%
Medium	0	0	9	12	0	24	0	0	0	0	7	0	0	0	0	0	52
		0.0%	4.5%	2.0%		3.4%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%		0.0%	0.0%	0.0%	2.4%
Heavy	0	0	0	8	0	8	0	1	0	1	4	0	0	0	0	0	22
		0.0%	0.0%	1.3%		1.1%	0.0%	1.3%	0.0%	1.1%	1.2%	0.0%		0.0%	0.0%	0.0%	1.0%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: GRAHAMS FERRY RD SW @ SW DAY ST 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RB 10-032 N Thursday

Peak Hour Detail

Peak Hour: 4:15 PM - 5:15 PM

Interval		Southbound GRAHAMS FERRY				Westbound DAY ST				Northbound GRAHAMS FERRY				Eastbound DAY ST			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	0	110	356	0	362	11	48	6	48	195	3	0	2	57	10	1208
Factor			0.86	0.87		0.83	0.46	0.71	0.75	0.80	0.75	0.75		0.50	0.62	0.50	0.89
Entering			466				421				246				69		
Factor			0.87				0.82				0.76				0.59		
Exiting			567				461				160				14		
Factor			0.69				0.87				0.46				0.80		
Peak Vehicles																	
Cars	0	0	97	337	0	338	11	42	6	45	183	3	0	2	57	10	1131
			88.2%	94.7%		93.4%	100%	87.5%	100%	93.8%	93.8%	100%		100%	100%	100%	93.6%
Light	0	0	7	6	0	11	0	6	0	3	6	0	0	0	0	0	39
			6.4%	1.7%		3.0%	0.0%	12.5%	0.0%	6.3%	3.1%	0.0%		0.0%	0.0%	0.0%	3.2%
Bike	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
			0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%		0.0%	0.0%	0.0%	0.1%
Medium	0	0	6	9	0	9	0	0	0	0	3	0	0	0	0	0	27
			5.5%	2.5%		2.5%	0.0%	0.0%	0.0%	0.0%	1.5%	0.0%		0.0%	0.0%	0.0%	2.2%
Heavy	0	0	0	4	0	4	0	0	0	0	2	0	0	0	0	0	10
			0.0%	1.1%		1.1%	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%		0.0%	0.0%	0.0%	0.8%

Type of peak hour being reported: Intersection Peak

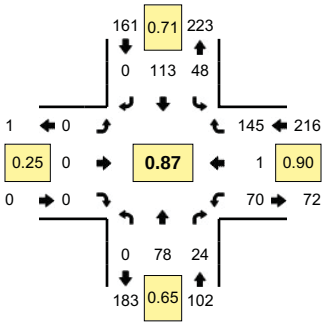
Method for determining peak hour: Total Entering Volume

LOCATION: Grahams Ferry Rd -- Clutter Rd

QC JOB #: 10622807

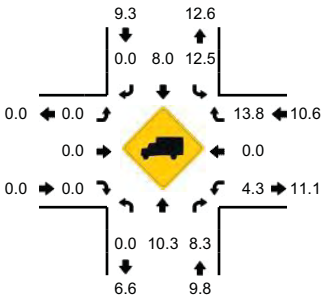
CITY/STATE: Wilsonville, OR

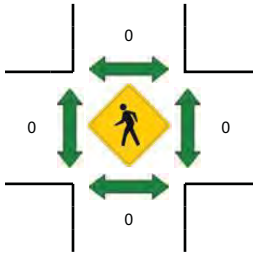
DATE: 5/24/2011

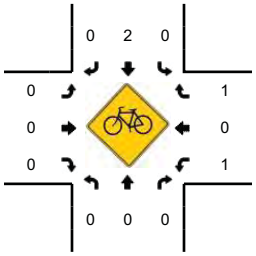


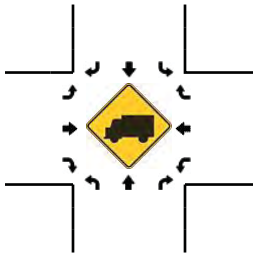
Peak-Hour: 4:20 PM -- 5:20 PM

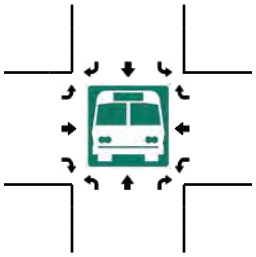
Peak 15-Min: 4:30 PM -- 4:45 PM











5-Min Count Period Beginning At	Grahams Ferry Rd (Northbound)				Grahams Ferry Rd (Southbound)				Clutter Rd (Eastbound)				Clutter Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	8	3	0	4	10	0	0	0	1	0	0	2	1	4	0	33	
4:05 PM	0	7	1	0	3	5	0	0	0	0	0	0	9	0	9	0	34	
4:10 PM	0	12	1	0	6	6	0	0	0	0	0	0	11	0	8	0	44	
4:15 PM	0	5	1	1	4	6	0	0	0	0	0	0	4	0	9	0	30	
4:20 PM	0	6	5	0	0	7	0	0	0	0	0	0	6	0	11	0	35	
4:25 PM	0	5	1	0	5	6	0	0	0	0	0	0	8	0	11	0	36	
4:30 PM	0	6	2	0	7	11	0	0	0	0	0	0	4	0	12	0	42	
4:35 PM	0	8	5	0	7	8	0	0	0	0	0	0	5	0	18	0	51	
4:40 PM	0	5	2	0	8	16	0	0	0	0	0	0	2	0	12	0	45	
4:45 PM	0	6	0	0	3	9	0	0	0	0	0	0	7	0	9	0	34	
4:50 PM	0	5	1	0	3	6	0	0	0	0	0	0	6	0	13	0	34	
4:55 PM	0	7	1	0	5	7	0	0	0	0	0	0	4	0	14	0	38	456
5:00 PM	0	8	3	0	3	10	0	0	0	0	0	0	6	0	7	0	37	460
5:05 PM	0	4	2	0	1	15	0	0	0	0	0	0	10	1	13	0	46	472
5:10 PM	0	6	1	0	3	8	0	0	0	0	0	0	8	0	16	0	42	470
5:15 PM	0	12	1	0	3	10	0	0	0	0	0	0	4	0	9	0	39	479
5:20 PM	0	7	0	0	2	7	0	0	0	0	0	0	5	0	10	0	31	475
5:25 PM	0	7	2	0	3	7	0	0	0	0	0	0	7	0	12	0	38	477
5:30 PM	0	4	0	0	9	8	0	0	0	0	0	0	12	0	10	0	43	478
5:35 PM	0	13	11	0	2	7	0	0	0	0	0	0	7	0	8	0	48	475
5:40 PM	0	8	5	0	3	11	0	0	0	0	0	0	5	0	7	0	39	469
5:45 PM	0	8	3	0	3	8	0	0	0	0	0	0	3	0	6	0	31	466
5:50 PM	0	9	2	0	1	9	0	0	0	0	0	0	4	0	6	0	31	463
5:55 PM	0	3	0	0	3	5	0	0	0	0	0	0	7	0	1	0	19	444

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	76	36	0	88	140	0	0	0	0	0	0	44	0	168	0	552
Heavy Trucks	0	12	0		4	20	0		0	0	0		4	0	24		64
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: BOONES FERRY RD SW @ SW DAY ST 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RD 10-032 E Thursday

Peak Hour Detail

Interval		Southbound BOONES FERRY				Westbound				Northbound BOONES FERRY				Eastbound DAY ST			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	5	127	0	0	0	0	1	0	0	85	94	0	97	0	5	414
4:15 PM	0	5	100	0	0	0	0	0	0	0	89	103	0	127	0	2	426
4:30 PM	0	3	100	0	0	0	0	0	0	0	102	95	0	107	0	7	414
4:45 PM	0	4	110	0	0	0	0	0	0	0	108	114	0	85	0	5	426
5:00 PM	0	3	106	0	0	0	0	0	0	0	137	122	0	109	0	9	486
5:15 PM	0	6	94	0	0	0	0	0	0	1	121	112	0	101	0	1	436
5:30 PM	0	5	109	0	0	0	0	0	0	0	109	87	0	80	0	4	394
5:45 PM	0	5	101	0	0	0	0	0	0	0	95	75	0	60	0	0	336
Totals	0	36	847	0	0	0	0	1	0	1	846	802	0	766	0	33	3332
Entering			883				1				1649				799		
Exiting			879				1				1614				838		
Vehicle Totals																	
Cars	0	35	833	0	0	0	0	1	0	1	822	749	0	733	0	31	3205
		97.2%	98.3%					100%		100%	97.2%	93.4%		95.7%		93.9%	96.2%
Light	0	0	11	0	0	0	0	0	0	0	13	27	0	13	0	1	65
		0.0%	1.3%					0.0%		0.0%	1.5%	3.4%		1.7%		3.0%	2.0%
Bike	0	0	1	0	0	0	0	0	0	0	7	0	0	0	0	0	8
		0.0%	0.1%					0.0%		0.0%	0.8%	0.0%		0.0%		0.0%	0.2%
Medium	0	1	0	0	0	0	0	0	0	0	2	17	0	12	0	0	32
		2.8%	0.0%					0.0%		0.0%	0.2%	2.1%		1.6%		0.0%	1.0%
Heavy	0	0	2	0	0	0	0	0	0	0	2	9	0	8	0	1	22
		0.0%	0.2%					0.0%		0.0%	0.2%	1.1%		1.0%		3.0%	0.7%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: BOONES FERRY RD SW @ SW DAY ST 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RD 10-032 E Thursday

Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound BOONES FERRY				Westbound				Northbound BOONES FERRY				Eastbound DAY ST			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	16	410	0	0	0	0	0	0	1	468	443	0	402	0	22	1762
Factor		0.67	0.93							0.25	0.85	0.91		0.92		0.61	0.91
Entering			426				0				912				424		
Factor			0.93								0.88				0.90		
Exiting			490				1				812				459		
Factor			0.25				0.94				0.67				0.85		
Peak Vehicles																	
Cars	0	15	401	0	0	0	0	0	0	1	455	413	0	388	0	20	1693
		93.8%	97.8%							100%	97.2%	93.2%		96.5%		90.9%	96.1%
Light	0	0	7	0	0	0	0	0	0	0	8	18	0	8	0	1	42
		0.0%	1.7%							0.0%	1.7%	4.1%		2.0%		4.5%	2.4%
Bike	0	0	1	0	0	0	0	0	0	0	4	0	0	0	0	0	5
		0.0%	0.2%							0.0%	0.9%	0.0%		0.0%		0.0%	0.3%
Medium	0	1	0	0	0	0	0	0	0	0	1	6	0	4	0	0	12
		6.3%	0.0%							0.0%	0.2%	1.4%		1.0%		0.0%	0.7%
Heavy	0	0	1	0	0	0	0	0	0	0	0	6	0	2	0	1	10
		0.0%	0.2%							0.0%	0.0%	1.4%		0.5%		4.5%	0.6%

LOCATION: BOONES FERRY RD SW @ SW 95TH AVE 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RF 10-032 W Thursday

Peak Hour Detail

Interval		Southbound BOONES FERRY				Westbound 95TH AVE				Northbound BOONES FERRY				Eastbound 95TH AVE			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	27	188	0	0	0	4	13	0	3	152	78	0	162	0	26	653
4:15 PM	0	29	225	0	0	0	2	12	0	3	163	77	0	167	0	27	705
4:30 PM	0	23	177	0	0	0	4	17	0	2	167	79	1	142	1	26	639
4:45 PM	0	24	185	0	0	0	0	13	0	5	188	55	0	148	0	35	653
5:00 PM	2	29	181	0	0	1	4	14	0	4	189	61	0	166	0	42	693
5:15 PM	0	33	182	0	0	0	2	16	0	4	201	72	0	126	0	45	681
5:30 PM	0	15	172	0	0	1	2	7	0	2	146	61	0	100	0	32	538
5:45 PM	0	30	138	0	0	0	0	5	0	1	140	59	0	86	0	30	489
Totals	2	210	1448	0	0	2	18	97	0	24	1346	542	1	1097	1	263	5051
Entering			1658				117				1912				1361		
Exiting			1611				25				2642				770		
Vehicle Totals																	
Cars	2	203	1411	0	0	2	17	96	0	24	1285	486	1	1037	1	248	4813
	100%	96.7%	97.4%			100%	94.4%	99.0%		100%	95.5%	89.7%	100%	94.5%	100%	94.3%	95.3%
Light	0	5	18	0	0	0	1	1	0	0	33	27	0	22	0	7	114
	0.0%	2.4%	1.2%			0.0%	5.6%	1.0%		0.0%	2.5%	5.0%	0.0%	2.0%	0.0%	2.7%	2.3%
Bike	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	5	7
	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.9%	0.1%
Medium	0	0	11	0	0	0	0	0	0	0	17	11	0	10	0	1	50
	0.0%	0.0%	0.8%			0.0%	0.0%	0.0%		0.0%	1.3%	2.0%	0.0%	0.9%	0.0%	0.4%	1.0%
Heavy	0	2	8	0	0	0	0	0	0	0	9	18	0	28	0	2	67
	0.0%	1.0%	0.6%			0.0%	0.0%	0.0%		0.0%	0.7%	3.3%	0.0%	2.6%	0.0%	0.8%	1.3%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: BOONES FERRY RD SW @ SW 95TH AVE 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RF 10-032 W Thursday

Peak Hour Detail

Peak Hour: 4:15 PM - 5:15 PM

Interval		Southbound BOONES FERRY				Westbound 95TH AVE				Northbound BOONES FERRY				Eastbound 95TH AVE			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	2	105	768	0	0	1	10	56	0	14	707	272	1	623	1	130	2690
Factor	0.25	0.91	0.85			0.25	0.63	0.82		0.70	0.94	0.86	0.25	0.93	0.25	0.77	0.95
Entering			873				67				993				754		
Factor			0.86				0.80				0.98				0.91		
Exiting			838				15				1447				387		
Factor			0.75				0.89				0.88				0.92		
Peak Vehicles																	
Cars	2	100	745	0	0	1	10	55	0	14	669	242	1	588	1	124	2552
	100%	95.2%	97.0%			100%	100%	98.2%		100%	94.6%	89.0%	100%	94.4%	100%	95.4%	94.9%
Light	0	4	11	0	0	0	0	1	0	0	22	15	0	16	0	3	72
	0.0%	3.8%	1.4%			0.0%	0.0%	1.8%		0.0%	3.1%	5.5%	0.0%	2.6%	0.0%	2.3%	2.7%
Bike	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	4
	0.0%	0.0%	0.0%			0.0%	0.0%	0.0%		0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	2.3%	0.1%
Medium	0	0	9	0	0	0	0	0	0	0	11	6	0	4	0	0	30
	0.0%	0.0%	1.2%			0.0%	0.0%	0.0%		0.0%	1.6%	2.2%	0.0%	0.6%	0.0%	0.0%	1.1%
Heavy	0	1	3	0	0	0	0	0	0	0	4	9	0	15	0	0	32
	0.0%	1.0%	0.4%			0.0%	0.0%	0.0%		0.0%	0.6%	3.3%	0.0%	2.4%	0.0%	0.0%	1.2%

LOCATION: I-5 SB RAMPS @ SW BOONES FERRY RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RH 10-032 W Thursday

Peak Hour Detail

Interval		Southbound I-5 SB RAMPS				Westbound BOONES FERRY				Northbound I-5 SB RAMPS				Eastbound BOONES FERRY			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	60	0	124	0	105	136	0	0	0	0	0	0	134	240	0	799
4:15 PM	0	93	0	95	0	72	139	0	0	0	0	0	0	140	259	0	798
4:30 PM	0	85	0	130	0	84	141	0	0	0	0	0	0	143	239	0	822
4:45 PM	0	79	0	98	0	71	154	0	0	0	0	0	0	132	219	0	753
5:00 PM	0	58	0	95	0	99	171	0	0	0	0	0	0	139	250	0	812
5:15 PM	0	105	0	94	0	76	162	0	0	0	0	0	0	122	202	0	761
5:30 PM	0	79	0	119	0	64	127	0	0	0	0	0	0	137	173	0	699
5:45 PM	0	81	0	94	0	48	112	0	0	0	0	0	0	90	147	0	572
Totals	0	640	0	849	0	619	1142	0	0	0	0	0	0	1037	1729	0	6016
Entering			1489				1761				0				2766		
Exiting			619				2578				1037				1782		
Vehicle Totals																	
Cars	0	578	0	823	0	604	1090	0	0	0	0	0	0	1004	1668	0	5767
		90.3%		96.9%		97.6%	95.4%							96.8%	96.5%		95.9%
Light	0	30	0	11	0	13	32	0	0	0	0	0	0	10	25	0	121
		4.7%		1.3%		2.1%	2.8%							1.0%	1.4%		2.0%
Bike	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
		0.0%		0.0%		0.0%	0.2%							0.0%	0.0%		0.0%
Medium	0	16	0	0	0	1	8	0	0	0	0	0	0	10	12	0	47
		2.5%		0.0%		0.2%	0.7%							1.0%	0.7%		0.8%
Heavy	0	16	0	15	0	1	10	0	0	0	0	0	0	13	24	0	79
		2.5%		1.8%		0.2%	0.9%							1.3%	1.4%		1.3%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: I-5 SB RAMPS @ SW BOONES FERRY RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RH 10-032 W Thursday

Peak Hour Detail

Peak Hour: 4:15 PM - 5:15 PM

Interval		Southbound I-5 SB RAMPS				Westbound BOONES FERRY				Northbound I-5 SB RAMPS				Eastbound BOONES FERRY			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	315	0	418	0	326	605	0	0	0	0	0	0	554	967	0	3185
Factor		0.85		0.80		0.82	0.88							0.97	0.93		0.97
Entering			733				931				0				1521		
Factor			0.85				0.86								0.95		
Exiting			326				1385				554				920		
Factor			0.93				0.97				0.99				0.82		
Peak Vehicles																	
Cars	0	277	0	404	0	318	575	0	0	0	0	0	0	535	930	0	3039
		87.9%		96.7%		97.5%	95.0%							96.6%	96.2%		95.4%
Light	0	18	0	4	0	7	19	0	0	0	0	0	0	5	19	0	72
		5.7%		1.0%		2.1%	3.1%							0.9%	2.0%		2.3%
Bike	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
		0.0%		0.0%		0.0%	0.2%							0.0%	0.0%		0.0%
Medium	0	11	0	0	0	0	6	0	0	0	0	0	0	6	8	0	31
		3.5%		0.0%		0.0%	1.0%							1.1%	0.8%		1.0%
Heavy	0	9	0	10	0	1	4	0	0	0	0	0	0	8	10	0	42
		2.9%		2.4%		0.3%	0.7%							1.4%	1.0%		1.3%

LOCATION: I-5 NB RAMPS @ SW ELLIGSEN RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RJ 10-032 W 1 Thursday

Peak Hour Detail

Interval		Southbound I-5 NB RAMPS				Westbound ELLIGSEN RD				Northbound I-5 NB RAMPS				Eastbound ELLIGSEN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	0	0	0	0	183	196	0	0	52	0	50	0	168	183	0	832
4:15 PM	0	0	0	0	0	183	165	0	0	57	0	49	0	181	165	0	800
4:30 PM	0	0	0	0	0	177	168	0	0	59	0	61	0	190	181	0	836
4:45 PM	0	0	0	0	0	196	159	0	0	73	0	74	0	127	186	0	815
5:00 PM	0	0	0	0	0	243	211	0	0	72	0	65	0	184	155	0	930
5:15 PM	0	0	0	0	0	193	180	0	0	53	0	57	0	143	171	0	797
5:30 PM	0	0	0	0	0	209	129	0	0	56	0	57	0	113	184	0	748
5:45 PM	0	0	0	0	0	164	102	0	0	58	0	58	0	84	148	0	614
Totals	0	0	0	0	0	1548	1310	0	0	480	0	471	0	1190	1373	0	6372
Entering			0				2858				951				2563		
Exiting			1548				1853				1190				1781		
Vehicle Totals																	
Cars	0	0	0	0	0	1526	1281	0	0	469	0	441	0	1135	1336	0	6188
						98.6%	97.8%			97.7%		93.6%		95.4%	97.3%		97.1%
Light	0	0	0	0	0	12	21	0	0	7	0	16	0	21	19	0	96
						0.8%	1.6%			1.5%		3.4%		1.8%	1.4%		1.5%
Bike	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3
						0.0%	0.2%			0.0%		0.0%		0.0%	0.1%		0.0%
Medium	0	0	0	0	0	2	4	0	0	0	0	5	0	10	1	0	22
						0.1%	0.3%			0.0%		1.1%		0.8%	0.1%		0.3%
Heavy	0	0	0	0	0	8	2	0	0	4	0	9	0	24	16	0	63
						0.5%	0.2%			0.8%		1.9%		2.0%	1.2%		1.0%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: I-5 NB RAMPS @ SW ELLIGSEN RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RJ 10-032 W 1 Thursday

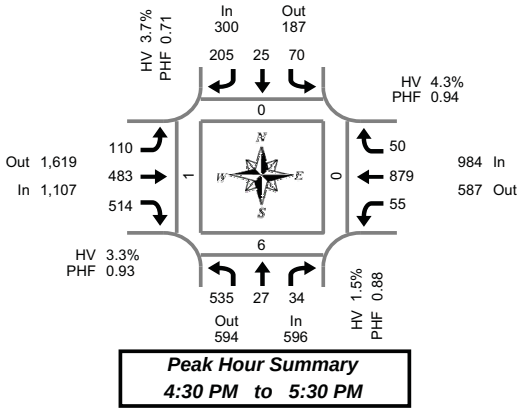
Peak Hour Detail

Peak Hour: 4:15 PM - 5:15 PM

Interval		Southbound I-5 NB RAMPS				Westbound ELLIGSEN RD				Northbound I-5 NB RAMPS				Eastbound ELLIGSEN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	0	0	0	0	799	703	0	0	261	0	249	0	682	687	0	3381
Factor						0.82	0.83			0.89		0.84		0.90	0.92		0.91
Entering			0				1502				510				1369		
Factor							0.83				0.87				0.92		
Exiting			799				948				682				952		
Factor			0.92				0.90				0.83				0.82		
Peak Vehicles																	
Cars	0	0	0	0	0	788	688	0	0	252	0	229	0	651	664	0	3272
						98.6%	97.9%			96.6%		92.0%		95.5%	96.7%		96.8%
Light	0	0	0	0	0	8	11	0	0	5	0	12	0	15	10	0	61
						1.0%	1.6%			1.9%		4.8%		2.2%	1.5%		1.8%
Bike	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
						0.0%	0.1%			0.0%		0.0%		0.0%	0.1%		0.1%
Medium	0	0	0	0	0	2	2	0	0	0	0	4	0	7	0	0	15
						0.3%	0.3%			0.0%		1.6%		1.0%	0.0%		0.4%
Heavy	0	0	0	0	0	1	1	0	0	4	0	4	0	9	12	0	31
						0.1%	0.1%			1.5%		1.6%		1.3%	1.7%		0.9%

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:30 PM to 5:30 PM

SW Parkway Ave & SW Elligsen Rd

Wednesday, May 09, 2007
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	31	12	2	0	4	5	22	0	4	23	32	0	4	55	3	0	197	0	0	0	0
4:05 PM	38	1	0	0	6	3	15	0	5	41	29	0	3	63	6	0	210	0	0	0	0
4:10 PM	33	2	5	0	3	1	10	0	4	36	32	0	3	64	4	0	197	0	0	0	0
4:15 PM	35	3	3	0	4	3	12	0	10	34	34	0	1	41	3	0	183	0	0	0	0
4:20 PM	51	0	3	0	4	1	9	0	5	24	32	0	1	52	4	0	186	0	0	0	0
4:25 PM	35	4	6	0	5	1	8	0	4	51	26	0	5	64	3	0	212	0	0	0	0
4:30 PM	33	5	4	0	5	2	11	0	9	42	34	0	2	79	4	0	230	0	0	0	0
4:35 PM	40	7	2	0	2	4	13	0	11	49	42	0	5	73	3	0	251	0	0	0	1
4:40 PM	27	2	2	0	8	0	10	0	9	43	41	0	3	60	2	0	207	0	0	0	0
4:45 PM	51	2	4	0	4	0	15	0	10	28	41	0	10	70	5	0	240	0	0	0	0
4:50 PM	38	1	7	0	5	4	10	0	5	32	47	0	3	74	9	0	235	0	0	0	0
4:55 PM	45	1	0	0	4	2	24	0	10	41	47	0	4	65	3	0	246	0	0	0	0
5:00 PM	39	1	1	0	11	3	24	0	5	34	42	0	5	67	4	0	236	0	0	0	0
5:05 PM	61	3	2	0	13	1	21	0	0	49	41	0	0	90	9	0	290	0	0	0	0
5:10 PM	47	3	3	0	3	2	27	0	22	40	44	0	7	70	3	0	271	0	0	0	0
5:15 PM	44	1	4	0	4	3	12	0	12	43	45	0	7	73	3	0	251	0	0	0	0
5:20 PM	63	1	3	0	6	3	12	0	5	39	43	0	3	70	3	0	251	0	0	0	0
5:25 PM	47	0	2	0	5	1	26	0	12	43	47	0	6	88	2	0	279	0	6	0	0
5:30 PM	51	1	3	0	4	0	7	0	3	35	39	0	6	59	2	0	210	0	0	5	0
5:35 PM	37	0	2	0	8	2	15	0	7	54	39	0	6	81	4	0	255	0	0	1	0
5:40 PM	40	1	5	0	7	1	7	0	6	47	41	0	5	61	2	0	223	0	0	0	0
5:45 PM	42	4	8	0	3	1	12	0	2	36	36	0	3	55	3	0	205	0	0	0	0
5:50 PM	47	4	3	0	2	3	12	0	8	40	28	0	8	40	5	0	200	0	1	0	0
5:55 PM	33	1	7	0	2	3	13	0	4	39	39	0	9	38	4	0	192	0	0	0	0
Total Survey	1,008	60	81	0	122	49	347	0	172	943	921	0	109	1,552	93	0	5,457	0	7	6	1

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	102	15	7	0	13	9	47	0	13	100	93	0	10	182	13	0	604	0	0	0	0
4:15 PM	121	7	12	0	13	5	29	0	19	109	92	0	7	157	10	0	581	0	0	0	0
4:30 PM	100	14	8	0	15	6	34	0	29	134	117	0	10	212	9	0	688	0	0	0	1
4:45 PM	134	4	11	0	13	6	49	0	25	101	135	0	17	209	17	0	721	0	0	0	0
5:00 PM	147	7	6	0	27	6	72	0	27	123	127	0	12	227	16	0	797	0	0	0	0
5:15 PM	154	2	9	0	15	7	50	0	29	125	135	0	16	231	8	0	781	0	6	0	0
5:30 PM	128	2	10	0	19	3	29	0	16	136	119	0	17	201	8	0	688	0	0	6	0
5:45 PM	122	9	18	0	7	7	37	0	14	115	103	0	20	133	12	0	597	0	1	0	0
Total Survey	1,008	60	81	0	122	49	347	0	172	943	921	0	109	1,552	93	0	5,457	0	7	6	1

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	596	594	1,190	0	300	187	487	0	1,107	1,619	2,726	0	984	587	1,571	0	2,987	0	6	0	1
%HV	1.5%				3.7%				3.3%				4.3%				3.3%				
PHF	0.88				0.71				0.93				0.94				0.92				

By Movement	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	535	27	34	596	70	25	205	300	110	483	514	1,107	55	879	50	984	2,987
%HV	1.1%	3.7%	5.9%	1.5%	1.4%	0.0%	4.9%	3.7%	2.7%	5.8%	1.0%	3.3%	1.8%	4.3%	6.0%	4.3%	3.3%
PHF	0.87	0.48	0.65	0.88	0.63	0.69	0.71	0.71	0.71	0.90	0.94	0.93	0.76	0.94	0.74	0.94	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	457	40	38	0	54	26	159	0	86	444	437	0	44	760	49	0	2,594	0	0	0	1
4:15 PM	502	32	37	0	68	23	184	0	100	467	471	0	46	805	52	0	2,787	0	0	0	1
4:30 PM	535	27	34	0	70	25	205	0	110	483	514	0	55	879	50	0	2,987	0	6	0	1
4:45 PM	563	15	36	0	74	22	200	0	97	485	516	0	62	868	49	0	2,987	0	6	6	0
5:00 PM	551	20	43	0	68	23	188	0	86	499	484	0	65	792	44	0	2,863	0	7	6	0

LOCATION: PARKWAY CENTER DR SW @ SW ELLIGSEN RD 1600-1800 Site: 0016
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RN 10-032 W 1 Thursday

Peak Hour Detail

Interval		Southbound RV PARK				Westbound ELLIGSEN RD				Northbound PARKWAY CENTER				Eastbound ELLIGSEN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	0	0	0	0	1	95	4	0	18	4	102	0	36	83	1	344
4:15 PM	0	2	0	1	0	1	80	14	0	11	0	98	0	36	86	4	333
4:30 PM	0	5	1	0	1	0	62	6	0	16	2	140	0	39	77	5	354
4:45 PM	0	3	0	0	0	0	85	9	0	18	1	96	0	41	86	3	342
5:00 PM	0	2	0	1	1	0	104	9	0	19	1	180	0	30	81	4	432
5:15 PM	0	4	0	0	1	2	99	3	0	18	1	126	0	33	98	5	390
5:30 PM	2	2	1	0	3	0	87	8	2	11	4	108	0	29	104	4	365
5:45 PM	0	3	1	0	0	0	73	6	0	13	1	70	0	24	71	5	267
Totals	2	21	3	2	6	4	685	59	2	124	14	920	0	268	686	31	2827
Entering			26				748				1058				985		
Exiting			49				812				330				1626		
Vehicle Totals																	
Cars	2	20	3	2	4	4	670	57	2	123	14	897	0	239	675	29	2741
	100%	95.2%	100%	100%	66.7%	100%	97.8%	96.6%	100%	99.2%	100%	97.5%		89.2%	98.4%	93.5%	97.0%
Light	0	1	0	0	0	0	10	1	0	1	0	15	0	11	10	2	51
	0.0%	4.8%	0.0%	0.0%	0.0%	0.0%	1.5%	1.7%	0.0%	0.8%	0.0%	1.6%		4.1%	1.5%	6.5%	1.8%
Bike	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.1%
Medium	0	0	0	0	0	0	3	0	0	0	0	2	0	0	0	0	5
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.2%		0.0%	0.0%	0.0%	0.2%
Heavy	0	0	0	0	0	0	2	1	0	0	0	6	0	18	1	0	28
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.7%	0.0%	0.0%	0.0%	0.7%		6.7%	0.1%	0.0%	1.0%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: PARKWAY CENTER DR SW @ SW ELLIGSEN RD 1600-1800 Site: 0016
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RN 10-032 W 1 Thursday

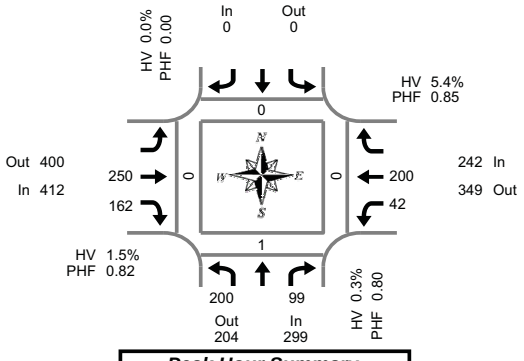
Peak Hour Detail

Peak Hour: 4:45 PM - 5:45 PM

Interval		Southbound RV PARK				Westbound ELLIGSEN RD				Northbound PARKWAY CENTER				Eastbound ELLIGSEN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	2	11	1	1	5	2	375	29	2	66	7	510	0	133	369	16	1529
Factor	0.25	0.69	0.25	0.25	0.42	0.25	0.90	0.81	0.25	0.87	0.44	0.71		0.81	0.89	0.80	0.88
Entering			13				406				583				518		
Factor			0.81				0.90				0.73				0.95		
Exiting			25				436				163				896		
Factor			0.93				0.83				0.91				0.46		
Peak Vehicles																	
Cars	2	11	1	1	3	2	369	29	2	66	7	500	0	122	363	15	1493
	100%	100%	100%	100%	60.0%	100%	98.4%	100%	100%	100%	100%	98.0%		91.7%	98.4%	93.8%	97.6%
Light	0	0	0	0	0	0	4	0	0	0	0	6	0	3	6	1	20
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	1.2%		2.3%	1.6%	6.3%	1.3%
Bike	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
	0.0%	0.0%	0.0%	0.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.1%
Medium	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.1%
Heavy	0	0	0	0	0	0	1	0	0	0	0	4	0	8	0	0	13
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.8%		6.0%	0.0%	0.0%	0.9%

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:25 PM to 5:25 PM

SW Canyon Creek Rd & SW Elligsen Rd

Wednesday, April 02, 2008
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	13		8	0				0	16	8	0	2	10		0	57		0	0	0	0
4:05 PM	18		8	0				0	19	9	0	5	7		0	66		0	0	0	0
4:10 PM	15		4	0				0	19	9	0	6	16		0	69		0	0	0	0
4:15 PM	13		3	0				0	13	10	0	3	15		0	57		0	0	0	0
4:20 PM	11		10	0				0	17	9	0	5	18		0	70		0	0	0	0
4:25 PM	15		5	0				0	17	11	0	1	21		0	70		0	0	0	0
4:30 PM	16		8	0				0	25	17	0	1	17		0	84		0	0	0	0
4:35 PM	13		12	0				0	24	13	0	3	21		0	86		0	0	0	0
4:40 PM	14		4	0				0	21	12	0	8	13		0	72		0	0	0	0
4:45 PM	25		4	0				0	21	11	0	0	19		0	80		0	0	0	0
4:50 PM	13		9	0				0	23	8	0	1	11		0	65		0	0	0	0
4:55 PM	14		11	0				0	13	15	0	5	18		0	76		0	0	0	0
5:00 PM	13		17	0				0	15	12	0	10	17		0	84		0	0	0	0
5:05 PM	26		13	0				0	17	12	0	2	18		0	88		0	1	0	0
5:10 PM	18		5	0				0	29	19	0	2	22		0	95		0	0	0	0
5:15 PM	15		7	0				0	28	14	0	4	13		0	81		0	0	0	0
5:20 PM	18		4	0				0	17	18	0	5	10		0	72		0	0	0	0
5:25 PM	20		4	0				0	16	8	0	6	11		0	65		0	0	0	1
5:30 PM	20		3	0				0	15	10	0	2	16		0	66		0	0	0	0
5:35 PM	20		8	0				0	21	10	0	6	13		0	78		0	0	0	0
5:40 PM	13		8	0				0	26	15	0	3	9		0	74		0	0	0	0
5:45 PM	20		6	0				0	13	15	0	2	11		0	67		0	0	0	0
5:50 PM	21		17	0				0	8	16	0	4	20		0	86		0	0	0	0
5:55 PM	14		7	0				0	22	12	0	8	15		0	78		0	0	0	0
Total Survey	398		185	0				0	455	293	0	94	361		0	1,786		0	1	0	1

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	46		20	0				0	54	26	0	13	33		0	192		0	0	0	0
4:15 PM	39		18	0				0	47	30	0	9	54		0	197		0	0	0	0
4:30 PM	43		24	0				0	70	42	0	12	51		0	242		0	0	0	0
4:45 PM	52		24	0				0	57	34	0	6	48		0	221		0	0	0	0
5:00 PM	57		35	0				0	61	43	0	14	57		0	267		0	1	0	0
5:15 PM	53		15	0				0	61	40	0	15	34		0	218		0	0	0	1
5:30 PM	53		19	0				0	62	35	0	11	38		0	218		0	0	0	0
5:45 PM	55		30	0				0	43	43	0	14	46		0	231		0	0	0	0
Total Survey	398		185	0				0	455	293	0	94	361		0	1,786		0	1	0	1

Peak Hour Summary
4:25 PM to 5:25 PM

By Approach	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	299	204	503	0	0	0	0	0	412	400	812	0	242	349	591	0	953	0	1	0	0
%HV	0.3%				0.0%				1.5%				5.4%				2.1%				
PHF	0.80				0.00				0.82				0.85				0.89				

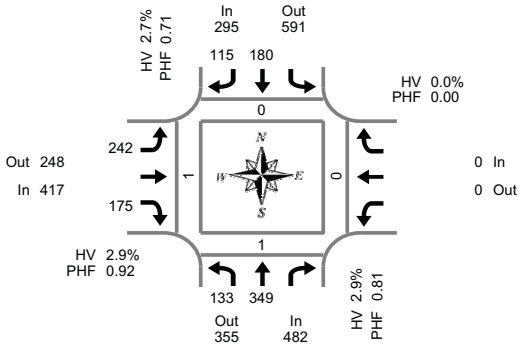
By Movement	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	200		99	299				0		250	162	412	42	200		242	953
%HV	0.5%	NA	0.0%	0.3%	NA	NA	NA	0.0%	NA	2.0%	0.6%	1.5%	4.8%	5.5%	NA	5.4%	2.1%
PHF	0.85		0.60	0.80				0.00		0.84	0.79	0.82	0.62	0.85		0.85	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Elligsen Rd				Westbound SW Elligsen Rd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes	T	R	Bikes	L	T		Bikes			North	South	East	West
4:00 PM	180		86	0				0	228	132	0	40	186		0	852		0	0	0	0
4:15 PM	191		101	0				0	235	149	0	41	210		0	927		0	1	0	0
4:30 PM	205		98	0				0	249	159	0	47	190		0	948		0	1	0	1
4:45 PM	215		93	0				0	241	152	0	46	177		0	924		0	1	0	1
5:00 PM	218		99	0				0	227	161	0	54	175		0	934		0	1	0	1

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:25 PM to 5:25 PM

SW Stafford Rd & SW 65th Ave

Wednesday, April 02, 2008
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW 65th Ave				Westbound SW 65th Ave				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L		R	Bikes				Bikes		North	South	East	West
4:00 PM	7	19		0	23	3	0		16		15	0				0	83	0	0	0	0
4:05 PM	8	22		0	10	5	0		22		11	0				0	78	0	0	0	0
4:10 PM	9	22		0	10	11	0		16		17	0				0	85	0	0	0	0
4:15 PM	6	21		0	22	11	0		12		10	0				0	82	0	0	0	0
4:20 PM	10	21		0	15	13	0		14		12	0				0	85	0	0	0	0
4:25 PM	15	27		0	10	12	0		13		21	0				0	98	0	0	0	0
4:30 PM	7	26		0	24	9	0		21		14	0				0	101	0	0	0	0
4:35 PM	16	29		0	23	18	0		20		10	0				0	116	0	0	0	0
4:40 PM	9	28		0	23	7	0		23		19	0				0	109	0	0	0	0
4:45 PM	8	22		0	15	11	0		19		14	0				0	89	0	0	0	0
4:50 PM	9	22		0	15	10	0		15		18	0				0	89	0	0	0	0
4:55 PM	10	26		0	17	9	0		20		20	0				0	102	0	0	0	1
5:00 PM	8	23		0	15	7	0		24		12	0				0	89	0	0	0	0
5:05 PM	13	36		0	6	13	0		25		12	0				0	105	0	0	0	0
5:10 PM	15	39		0	10	7	0		19		15	0				0	105	0	0	0	0
5:15 PM	7	36		0	13	7	0		21		10	0				0	94	0	1	0	0
5:20 PM	16	35		0	9	5	0		22		10	0				0	97	0	0	0	0
5:25 PM	8	30		0	18	9	0		15		12	0				0	92	0	0	0	0
5:30 PM	9	25		0	18	12	0		18		10	0				0	92	1	0	0	0
5:35 PM	11	15		0	19	6	0		19		6	0				0	76	0	0	0	0
5:40 PM	8	30		0	18	6	0		18		9	0				0	89	0	0	0	0
5:45 PM	6	23		0	13	13	0		12		16	0				0	83	0	0	0	0
5:50 PM	12	26		0	25	5	0		11		15	0				0	94	0	0	0	0
5:55 PM	11	23		0	10	11	0		19		8	0				0	82	0	0	0	0
Total Survey	238	626		0	381	220	0		434		316	0				0	2,215	1	1	0	1

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW 65th Ave				Westbound SW 65th Ave				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L		R	Bikes				Bikes		North	South	East	West
4:00 PM	24	63		0	43	19	0		54		43	0				0	246	0	0	0	0
4:15 PM	31	69		0	47	36	0		39		43	0				0	265	0	0	0	0
4:30 PM	32	83		0	70	34	0		64		43	0				0	326	0	0	0	0
4:45 PM	27	70		0	47	30	0		54		52	0				0	280	0	0	0	1
5:00 PM	36	98		0	31	27	0		68		39	0				0	299	0	0	0	0
5:15 PM	31	101		0	40	21	0		58		32	0				0	283	0	1	0	0
5:30 PM	28	70		0	55	24	0		55		25	0				0	257	1	0	0	0
5:45 PM	29	72		0	48	29	0		42		39	0				0	259	0	0	0	0
Total Survey	238	626		0	381	220	0		434		316	0				0	2,215	1	1	0	1

Peak Hour Summary
4:25 PM to 5:25 PM

By Approach	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW 65th Ave				Westbound SW 65th Ave				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	482	355	837	0	295	591	886	0	417	248	665	0	0	0	0	0	1,194	0	1	0	1
%HV	2.9%				2.7%				2.9%				0.0%				2.8%				
PHF	0.81				0.71				0.92				0.00				0.92				

By Movement	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW 65th Ave				Westbound SW 65th Ave				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	133	349		482	180	115	295		242		175	417				0	1,194
%HV	4.5%	2.3%	NA	2.9%	1.1%	5.2%	2.7%	NA	0.8%	NA	5.7%	2.9%	NA	NA	NA	0.0%	2.8%
PHF	0.88	0.79		0.81	0.64	0.74	0.71		0.88		0.84	0.92				0.00	0.92

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Stafford Rd				Southbound SW Stafford Rd				Eastbound SW 65th Ave				Westbound SW 65th Ave				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R	Bikes		L		R	Bikes				Bikes		North	South	East	West
4:00 PM	114	285		0	207	119	0		211		181	0				0	1,117	0	0	0	1
4:15 PM	126	320		0	195	127	0		225		177	0				0	1,170	0	0	0	1
4:30 PM	126	352		0	188	112	0		244		166	0				0	1,188	0	1	0	1
4:45 PM	122	339		0	173	102	0		235		148	0				0	1,119	1	1	0	1
5:00 PM	124	341		0	174	101	0		223		135	0				0	1,098	1	1	0	0

LOCATION: GRAHAMS FERRY RD SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RZ 10-032 W Thursday

Peak Hour Detail

Interval		Southbound GRAHAMS FERRY				Westbound BOECKMAN RD				Northbound GRAHAMS FERRY				Eastbound TOOZE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	9	13	8	0	9	28	15	0	3	5	1	0	0	14	2	107
4:15 PM	0	8	13	5	0	12	28	5	0	2	5	0	2	1	11	3	95
4:30 PM	0	7	14	7	0	7	32	15	0	5	7	1	0	0	23	4	122
4:45 PM	0	2	14	10	0	4	34	13	0	2	3	1	0	1	13	1	98
5:00 PM	0	13	19	8	0	12	43	10	0	2	9	0	0	3	15	3	137
5:15 PM	0	10	19	11	0	4	33	8	0	4	7	0	0	3	13	5	117
5:30 PM	0	4	13	8	0	4	35	14	0	3	6	3	0	0	19	5	114
5:45 PM	0	8	10	4	0	3	22	13	0	2	8	0	0	0	12	3	85
Totals	0	61	115	61	0	55	255	93	0	23	50	6	2	8	120	26	875
Entering			237				403				79				154		
Exiting			131				204				216				322		
Vehicle Totals																	
Cars	0	60	113	60	0	47	254	91	0	23	46	5	2	8	113	23	845
		98.4%	98.3%	98.4%		85.5%	99.6%	97.8%		100%	92.0%	83.3%	100%	100%	94.2%	88.5%	96.6%
Light	0	1	2	0	0	6	1	1	0	0	4	0	0	0	3	3	21
		1.6%	1.7%	0.0%		10.9%	0.4%	1.1%		0.0%	8.0%	0.0%	0.0%	0.0%	2.5%	11.5%	2.4%
Bike	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	4
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	16.7%	0.0%	0.0%	2.5%	0.0%	0.5%
Medium	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	3
		0.0%	0.0%	1.6%		0.0%	0.0%	1.1%		0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.3%
Heavy	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
		0.0%	0.0%	0.0%		3.6%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: GRAHAMS FERRY RD SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RZ 10-032 W Thursday

Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound GRAHAMS FERRY				Westbound BOECKMAN RD				Northbound GRAHAMS FERRY				Eastbound TOOZE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	32	66	36	0	27	142	46	0	13	26	2	0	7	64	13	474
Factor		0.62	0.87	0.82		0.56	0.83	0.77		0.65	0.72	0.50		0.58	0.70	0.65	0.86
Entering			134				215				41				84		
Factor			0.84				0.83				0.79				0.78		
Exiting			66				113				119				176		
Factor			0.69				0.83				0.78				0.63		
Peak Vehicles																	
Cars	0	32	65	35	0	24	142	46	0	13	24	2	0	7	62	13	465
		100%	98.5%	97.2%		88.9%	100%	100%		100%	92.3%	100%		100%	96.9%	100%	98.1%
Light	0	0	1	0	0	3	0	0	0	0	2	0	0	0	1	0	7
		0.0%	1.5%	0.0%		11.1%	0.0%	0.0%		0.0%	7.7%	0.0%		0.0%	1.6%	0.0%	1.5%
Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Medium	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2
		0.0%	0.0%	2.8%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	1.6%	0.0%	0.4%
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Type of peak hour being reported: Intersection Peak

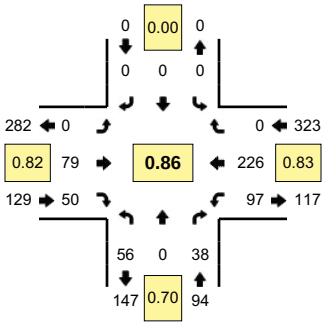
Method for determining peak hour: Total Entering Volume

LOCATION: 110th Ave -- Boeckman Rd

QC JOB #: 10622805

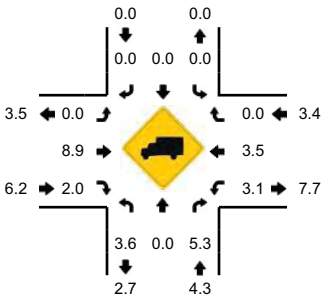
CITY/STATE: Wilsonville, OR

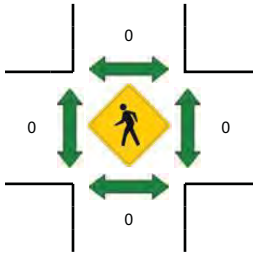
DATE: 5/24/2011

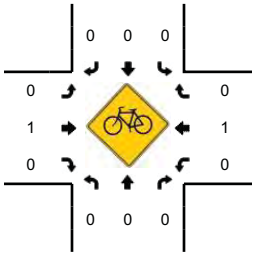


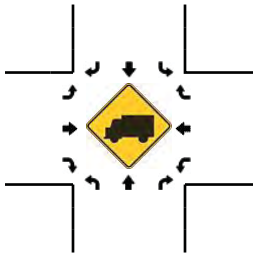
Peak-Hour: 4:35 PM -- 5:35 PM

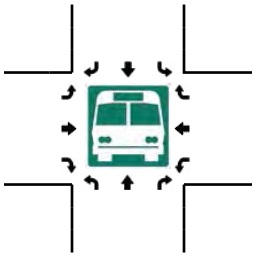
Peak 15-Min: 5:05 PM -- 5:20 PM











5-Min Count Period Beginning At	110th Ave (Northbound)				110th Ave (Southbound)				Boeckman Rd (Eastbound)				Boeckman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	2	0	0	0	0	0	0	3	4	0	4	8	0	0	23	
4:05 PM	6	0	2	0	0	0	0	0	0	5	0	0	3	16	0	0	32	
4:10 PM	2	0	1	0	0	0	0	0	0	4	0	0	6	15	0	0	28	
4:15 PM	4	0	0	0	0	0	0	0	0	7	3	0	3	13	0	0	30	
4:20 PM	1	0	0	0	0	0	0	0	0	5	1	0	7	16	0	0	30	
4:25 PM	1	0	1	0	0	0	0	0	0	3	1	0	8	22	0	0	36	
4:30 PM	6	0	0	0	0	0	0	0	0	11	6	0	2	13	0	0	38	
4:35 PM	3	0	3	0	0	0	0	0	0	4	5	0	6	25	0	0	46	
4:40 PM	5	0	4	0	0	0	0	0	0	9	4	0	4	17	0	0	43	
4:45 PM	4	0	0	0	0	0	0	0	0	4	3	0	7	19	0	0	37	
4:50 PM	3	0	3	0	0	0	0	0	0	6	3	0	9	9	0	0	33	
4:55 PM	7	0	3	0	0	0	0	0	0	5	5	0	5	20	0	0	45	421
5:00 PM	2	0	3	0	0	0	0	0	0	10	2	0	11	23	0	0	51	449
5:05 PM	7	0	3	0	0	0	0	0	0	8	3	0	8	21	0	0	50	467
5:10 PM	9	0	8	0	0	0	0	0	0	1	4	0	11	23	0	0	56	495
5:15 PM	5	0	4	0	0	0	0	0	0	11	3	0	9	20	0	0	52	517
5:20 PM	3	0	2	0	0	0	0	0	0	9	7	0	8	17	0	0	46	533
5:25 PM	4	0	3	0	0	0	0	0	0	7	4	0	11	11	0	0	40	537
5:30 PM	4	0	2	0	0	0	0	0	0	5	7	0	8	21	0	0	47	546
5:35 PM	4	0	2	0	0	0	0	0	0	2	2	0	6	16	0	0	32	532
5:40 PM	3	0	5	0	0	0	0	0	0	3	0	0	7	9	0	0	27	516
5:45 PM	7	0	0	0	0	0	0	0	0	8	1	0	5	18	0	0	39	518
5:50 PM	3	0	8	0	0	0	0	0	0	9	3	0	6	7	0	0	36	521
5:55 PM	2	0	3	0	0	0	0	0	0	3	1	0	8	19	0	0	36	512

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	84	0	60	0	0	0	0	0	0	80	40	0	112	256	0	0	632
Heavy Trucks	0	0	0		0	0	0		0	12	0		4	16	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: 95TH AVE SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SB 10-032 W 1 Thursday

Peak Hour Detail

Interval		Southbound 95TH AVE				Westbound BOECKMAN RD				Northbound 95TH AVE				Eastbound BOECKMAN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	21	0	47	0	24	33	1	0	5	4	1	0	1	14	4	155
4:15 PM	0	16	2	52	0	17	28	0	0	1	1	0	0	0	20	6	143
4:30 PM	0	21	0	68	2	24	40	1	0	1	1	1	0	0	31	5	195
4:45 PM	0	13	1	57	0	25	35	0	0	1	1	1	0	0	14	4	152
5:00 PM	0	25	0	68	0	34	45	0	0	0	0	0	0	0	27	7	206
5:15 PM	0	12	0	40	0	32	39	0	0	1	2	0	0	1	13	7	147
5:30 PM	0	20	0	34	0	25	48	0	0	0	0	0	0	0	22	9	158
5:45 PM	0	7	0	9	0	12	11	2	0	2	0	0	0	0	6	4	53
Totals	0	135	3	375	2	193	279	4	0	11	9	3	0	2	147	46	1209
Entering			513				476				23				195		
Exiting			248				533				9				417		
Vehicle Totals																	
Cars	0	135	2	356	2	175	270	4	0	11	7	3	0	2	140	45	1152
		100%	66.7%	94.9%	100%	90.7%	96.8%	100%		100%	77.8%	100%		100%	95.2%	97.8%	95.3%
Light	0	0	1	12	0	11	3	0	0	0	2	0	0	0	2	0	31
		0.0%	33.3%	3.2%	0.0%	5.7%	1.1%	0.0%		0.0%	22.2%	0.0%		0.0%	1.4%	0.0%	2.6%
Bike	0	0	0	1	0	3	3	0	0	0	0	0	0	0	3	0	10
		0.0%	0.0%	0.3%	0.0%	1.6%	1.1%	0.0%		0.0%	0.0%	0.0%		0.0%	2.0%	0.0%	0.8%
Medium	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	3
		0.0%	0.0%	0.3%	0.0%	0.0%	0.4%	0.0%		0.0%	0.0%	0.0%		0.0%	0.7%	0.0%	0.2%
Heavy	0	0	0	5	0	4	2	0	0	0	0	0	0	0	1	1	13
		0.0%	0.0%	1.3%	0.0%	2.1%	0.7%	0.0%		0.0%	0.0%	0.0%		0.0%	0.7%	2.2%	1.1%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: 95TH AVE SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SB 10-032 W 1 Thursday

Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound 95TH AVE				Westbound BOECKMAN RD				Northbound 95TH AVE				Eastbound BOECKMAN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	71	1	233	2	115	159	1	0	3	4	2	0	1	85	23	700
Factor		0.71	0.25	0.86	0.25	0.85	0.88	0.25		0.75	0.50	0.50		0.25	0.69	0.82	0.85
Entering			305				275				9				109		
Factor			0.82				0.87				0.75				0.76		
Exiting			142				321				3				232		
Factor			0.66				0.50				0.82				0.88		
Peak Vehicles																	
Cars	0	71	1	226	2	104	155	1	0	3	3	2	0	1	81	22	672
		100%	100%	97.0%	100%	90.4%	97.5%	100%		100%	75.0%	100%		100%	95.3%	95.7%	96.0%
Light	0	0	0	5	0	9	2	0	0	0	1	0	0	0	0	0	17
		0.0%	0.0%	2.1%	0.0%	7.8%	1.3%	0.0%		0.0%	25.0%	0.0%		0.0%	0.0%	0.0%	2.4%
Bike	0	0	0	0	0	1	1	0	0	0	0	0	0	0	3	0	5
		0.0%	0.0%	0.0%	0.0%	0.9%	0.6%	0.0%		0.0%	0.0%	0.0%		0.0%	3.5%	0.0%	0.7%
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	1.2%	0.0%	0.1%
Heavy	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	1	5
		0.0%	0.0%	0.9%	0.0%	0.9%	0.6%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	4.3%	0.7%

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

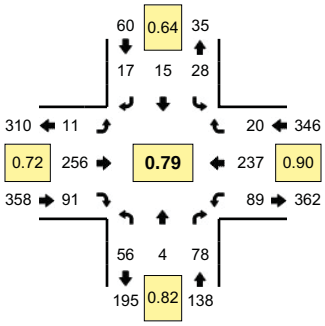
LOCATION: SW Boberg Rd -- SW Boeckman Rd

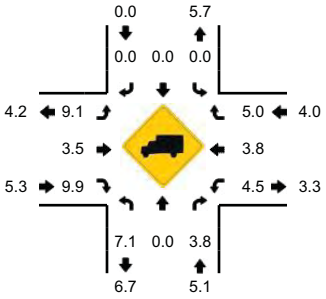
QC JOB #: 10534405

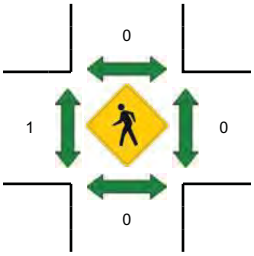
CITY/STATE: Wilsonville, OR

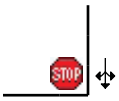
DATE: 11/3/2010

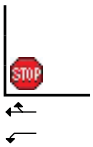
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

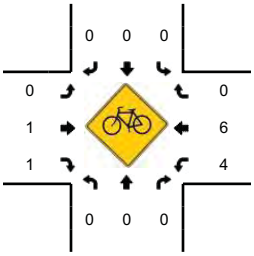


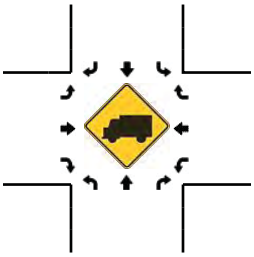


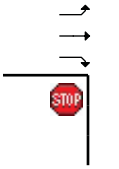


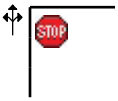


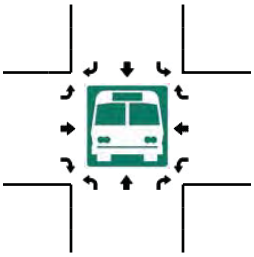












5-Min Count Period Beginning At	SW Boberg Rd (Northbound)				SW Boberg Rd (Southbound)				SW Boeckman Rd (Eastbound)				SW Boeckman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	1	8	0	2	1	2	0	1	14	7	0	4	13	1	0	61	
4:05 PM	4	1	5	0	1	1	0	0	0	9	4	0	8	9	2	0	44	
4:10 PM	4	0	5	0	1	0	2	0	1	15	8	0	6	17	2	0	61	
4:15 PM	2	0	2	0	1	0	1	0	2	14	7	0	5	21	4	0	59	
4:20 PM	0	0	5	0	4	0	4	0	1	19	6	0	5	16	3	0	63	
4:25 PM	1	0	8	0	1	2	2	0	1	6	5	0	4	21	1	0	52	
4:30 PM	3	1	2	0	3	0	0	0	1	17	9	0	5	15	2	0	58	
4:35 PM	4	0	4	0	3	0	1	0	1	23	5	0	9	12	1	0	63	
4:40 PM	7	0	9	0	1	1	0	0	1	14	8	0	8	22	0	0	71	
4:45 PM	2	0	3	0	2	1	1	0	1	24	6	0	10	15	2	0	67	
4:50 PM	6	0	4	0	1	1	0	0	3	21	5	0	10	10	1	0	62	
4:55 PM	7	1	1	0	0	1	3	0	0	12	4	0	6	23	1	0	59	720
5:00 PM	3	0	5	0	2	1	1	0	1	24	13	0	5	22	0	0	77	736
5:05 PM	3	0	15	0	3	4	3	0	1	35	12	0	8	30	2	0	116	808
5:10 PM	7	1	7	0	4	1	0	0	1	29	9	0	2	22	2	0	85	832
5:15 PM	4	0	5	0	3	3	3	0	0	28	6	0	8	24	2	0	86	859
5:20 PM	8	0	6	0	0	1	1	0	0	13	6	0	6	22	4	0	67	863
5:25 PM	2	1	17	0	6	1	4	0	1	16	8	0	12	20	3	0	91	902
5:30 PM	1	0	8	0	0	0	4	0	0	14	5	0	4	19	0	0	55	899
5:35 PM	2	0	5	0	1	0	0	0	1	16	7	0	7	21	1	0	61	897
5:40 PM	3	0	6	0	0	0	3	0	0	18	9	0	4	20	1	0	64	890
5:45 PM	2	0	3	0	0	0	0	0	2	13	4	0	12	17	2	0	55	878
5:50 PM	2	0	6	0	2	0	3	0	2	10	4	0	10	19	1	0	59	875
5:55 PM	4	0	7	0	4	0	2	0	0	16	3	0	5	11	2	0	54	870

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	56	4	108	0	40	32	24	0	8	368	108	0	72	304	24	0	1148
Heavy Trucks	4	0	4		0	0	0		0	24	12		0	12	0		56
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		1	2	0		4
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/11/2010 10:07 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

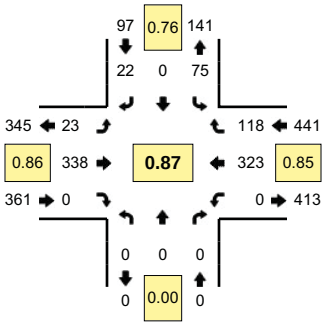
Method for determining peak hour: Total Entering Volume

LOCATION: Boones Ferry Rd Ramp -- Boeckman Rd

QC JOB #: 10622806

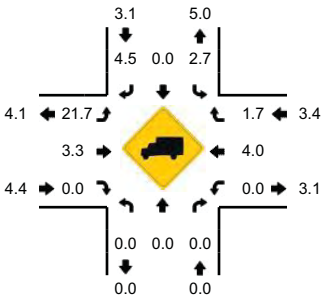
CITY/STATE: Wilsonville, OR

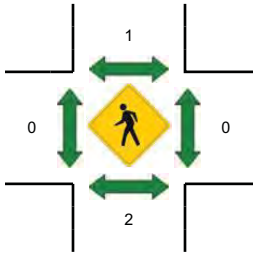
DATE: 5/24/2011

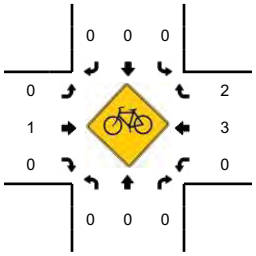


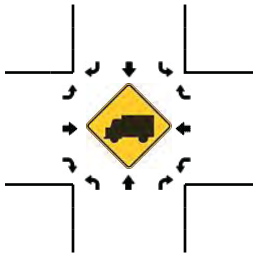
Peak-Hour: 4:30 PM -- 5:30 PM

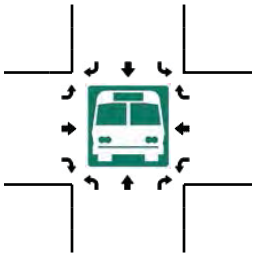
Peak 15-Min: 5:00 PM -- 5:15 PM











5-Min Count Period Beginning At	Boones Ferry Rd Ramp (Northbound)				Boones Ferry Rd Ramp (Southbound)				Boeckman Rd (Eastbound)				Boeckman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	5	0	2	0	3	27	0	0	0	18	12	0	67	
4:05 PM	0	0	0	0	6	0	2	0	2	14	0	0	0	22	4	0	50	
4:10 PM	0	0	0	0	5	0	2	0	1	15	0	0	0	19	9	0	51	
4:15 PM	0	0	0	0	4	0	5	0	2	24	0	0	0	24	10	0	69	
4:20 PM	0	0	0	0	2	0	2	0	1	17	0	0	0	29	9	0	60	
4:25 PM	0	0	0	0	5	0	3	0	0	16	0	0	0	25	8	0	57	
4:30 PM	0	0	0	0	7	0	1	0	4	23	0	0	0	31	8	0	74	
4:35 PM	0	0	0	0	7	0	1	0	3	33	0	0	0	19	9	0	72	
4:40 PM	0	0	0	0	6	0	0	0	0	36	0	0	0	19	9	0	70	
4:45 PM	0	0	0	0	5	0	1	0	2	31	0	0	0	13	6	0	58	
4:50 PM	0	0	0	0	7	0	3	0	2	27	0	0	0	33	8	0	80	
4:55 PM	0	0	0	0	4	0	3	0	1	20	0	0	0	26	6	0	60	768
5:00 PM	0	0	0	0	8	0	1	0	2	32	0	0	0	19	14	0	76	777
5:05 PM	0	0	0	0	5	0	5	0	3	33	0	0	0	34	11	0	91	818
5:10 PM	0	0	0	0	14	0	1	0	1	27	0	0	0	34	14	0	91	858
5:15 PM	0	0	0	0	4	0	1	0	2	23	0	0	0	28	9	0	67	856
5:20 PM	0	0	0	0	4	0	4	0	1	27	0	0	0	31	11	0	78	874
5:25 PM	0	0	0	0	4	0	1	0	2	26	0	0	0	36	13	0	82	899
5:30 PM	0	0	0	0	6	0	2	0	3	23	0	0	0	17	4	0	55	880
5:35 PM	0	0	0	0	9	0	0	0	0	29	0	0	0	23	8	0	69	877
5:40 PM	0	0	0	0	7	0	2	0	1	16	0	0	0	24	9	0	59	866
5:45 PM	0	0	0	0	6	0	3	0	1	16	0	0	0	23	6	0	55	863
5:50 PM	0	0	0	0	5	0	0	0	0	15	0	0	0	22	4	0	46	829
5:55 PM	0	0	0	0	4	0	1	0	2	21	0	0	0	21	9	0	58	827

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	108	0	28	0	24	368	0	0	0	348	156	0	1032
Heavy Trucks	0	0	0		4	0	0		8	12	0		0	4	0		28
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

LOCATION: PARKWAY AVE SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RP 10-032 W 1 Thursday

Peak Hour Detail

Interval		Southbound PARKWAY AVE				Westbound BOECKMAN RD				Northbound PARKWAY AVE				Eastbound BOECKMAN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	37	52	8	0	8	34	38	0	25	39	18	0	25	34	16	334
4:15 PM	0	28	63	6	0	4	31	23	0	28	42	18	0	30	36	20	329
4:30 PM	0	38	62	8	0	5	37	38	0	40	39	23	0	34	53	26	403
4:45 PM	0	35	58	5	0	6	59	43	0	32	44	9	0	33	31	18	373
5:00 PM	0	37	73	7	1	10	52	38	0	35	51	16	0	32	59	17	428
5:15 PM	0	38	57	6	1	4	43	44	0	43	52	18	0	18	40	13	377
5:30 PM	0	30	52	7	0	6	43	42	0	39	46	19	0	16	40	13	353
5:45 PM	0	22	53	3	1	7	29	37	0	38	32	12	0	9	26	6	275
Totals	0	265	470	50	3	50	328	303	0	280	345	133	0	197	319	129	2872
Entering			785				681				758				645		
Exiting			524				649				970				726		
Vehicle Totals																	
Cars	0	255	468	50	3	50	316	298	0	279	341	127	0	194	307	122	2810
		96.2%	99.6%	100%	100%	100%	96.3%	98.3%		99.6%	98.8%	95.5%		98.5%	96.2%	94.6%	97.8%
Light	0	5	0	0	0	0	7	4	0	1	1	5	0	2	5	4	34
		1.9%	0.0%	0.0%	0.0%	0.0%	2.1%	1.3%		0.4%	0.3%	3.8%		1.0%	1.6%	3.1%	1.2%
Bike	0	4	1	0	0	0	4	0	0	0	3	0	0	0	6	1	19
		1.5%	0.2%	0.0%	0.0%	0.0%	1.2%	0.0%		0.0%	0.9%	0.0%		0.0%	1.9%	0.8%	0.7%
Medium	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	3
		0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%		0.0%	0.0%	0.0%		0.5%	0.0%	0.8%	0.1%
Heavy	0	1	1	0	0	0	0	1	0	0	0	1	0	0	1	1	6
		0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.3%		0.0%	0.0%	0.8%		0.0%	0.3%	0.8%	0.2%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: PARKWAY AVE SW @ SW BOECKMAN RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RP 10-032 W 1 Thursday

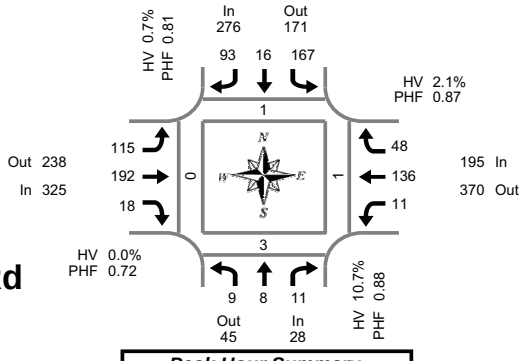
Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound PARKWAY AVE				Westbound BOECKMAN RD				Northbound PARKWAY AVE				Eastbound BOECKMAN RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	148	250	26	2	25	191	163	0	150	186	66	0	117	183	74	1581
Factor		0.97	0.86	0.81	0.50	0.63	0.81	0.93		0.87	0.89	0.72		0.86	0.78	0.71	0.92
Entering			424				379				402				374		
Factor			0.91				0.88				0.89				0.83		
Exiting			285				359				530				405		
Factor			0.88				0.87				0.90				0.86		
Peak Vehicles																	
Cars	0	143	249	26	2	25	188	160	0	150	185	62	0	116	175	70	1551
		96.6%	99.6%	100%	100%	100%	98.4%	98.2%		100%	99.5%	93.9%		99.1%	95.6%	94.6%	98.1%
Light	0	3	0	0	0	0	3	2	0	0	0	3	0	1	2	2	16
		2.0%	0.0%	0.0%	0.0%	0.0%	1.6%	1.2%		0.0%	0.0%	4.5%		0.9%	1.1%	2.7%	1.0%
Bike	0	2	0	0	0	0	0	0	0	0	1	0	0	0	6	0	9
		1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.5%	0.0%		0.0%	3.3%	0.0%	0.6%
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	1.4%	0.1%
Heavy	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	4
		0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.6%		0.0%	0.0%	1.5%		0.0%	0.0%	1.4%	0.3%

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



SW Canyon Creek Rd & SW Boeckman Rd

Wednesday, April 02, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:20 PM to 5:20 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Boeckman Rd				Westbound SW Boeckman Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	4	0	9	1	5	0	8	10	0	0	1	10	3	0	51	0	0	0	0
4:05 PM	0	3	1	0	11	0	5	0	9	15	1	0	0	11	2	0	58	0	0	1	0
4:10 PM	0	0	0	0	9	3	8	0	12	16	1	0	0	11	2	0	62	0	0	1	0
4:15 PM	1	1	0	0	5	0	7	0	5	17	1	0	1	8	2	0	48	0	1	3	0
4:20 PM	2	1	1	0	16	2	8	0	5	9	1	0	1	8	3	0	57	0	0	0	0
4:25 PM	0	1	2	0	15	0	6	0	7	6	3	0	0	10	6	0	56	0	0	0	0
4:30 PM	1	0	0	0	16	2	8	0	9	19	1	0	1	10	4	0	71	0	0	0	0
4:35 PM	0	0	0	0	8	1	6	0	8	17	0	0	2	14	3	0	59	0	0	0	0
4:40 PM	1	0	0	0	11	0	7	0	6	22	1	0	1	10	9	0	68	0	0	0	0
4:45 PM	1	1	1	0	16	2	12	0	8	13	2	0	0	15	2	0	73	1	0	0	0
4:50 PM	1	2	1	0	10	3	10	1	6	15	0	0	1	15	0	0	64	0	1	0	0
4:55 PM	0	1	0	0	4	1	2	0	8	11	1	0	1	12	5	0	46	0	0	0	0
5:00 PM	1	0	2	0	17	1	7	0	12	22	0	0	3	12	3	0	80	0	1	0	0
5:05 PM	2	1	0	0	14	2	7	0	11	18	6	0	1	12	5	0	79	0	0	0	0
5:10 PM	0	0	2	0	20	0	11	0	17	13	3	0	0	9	4	0	79	0	1	0	0
5:15 PM	0	1	2	0	20	2	9	0	18	27	0	0	0	9	4	0	92	0	0	1	0
5:20 PM	0	0	0	0	7	0	2	0	2	8	0	0	0	1	0	0	20	0	0	0	0
5:25 PM	0	0	0	0	9	1	7	0	9	29	2	0	0	4	3	0	64	0	0	0	0
5:30 PM	0	0	0	0	12	0	8	0	15	14	1	0	0	9	2	0	61	0	1	0	0
5:35 PM	1	1	1	0	14	1	5	0	8	17	1	0	3	17	3	0	72	1	0	0	0
5:40 PM	1	0	0	0	8	1	11	0	10	18	1	0	0	9	4	0	63	0	0	0	0
5:45 PM	1	3	1	0	13	1	11	0	11	13	1	0	0	12	5	0	72	0	0	0	0
5:50 PM	1	2	3	0	13	0	8	0	9	12	2	0	0	8	6	0	64	0	0	0	0
5:55 PM	0	0	1	0	7	0	1	0	10	16	1	0	1	10	4	0	51	0	0	0	0
Total Survey	14	18	22	0	284	24	171	1	223	377	30	0	17	246	84	0	1,510	2	5	6	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Boeckman Rd				Westbound SW Boeckman Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	3	5	0	29	4	18	0	29	41	2	0	1	32	7	0	171	0	0	2	0
4:15 PM	3	3	3	0	36	2	21	0	17	32	5	0	2	26	11	0	161	0	1	3	0
4:30 PM	2	0	0	0	35	3	21	0	23	58	2	0	4	34	16	0	198	0	0	0	0
4:45 PM	2	4	2	0	30	6	24	1	22	39	3	0	2	42	7	0	183	1	1	0	0
5:00 PM	3	1	4	0	51	3	25	0	40	53	9	0	4	33	12	0	238	0	2	0	0
5:15 PM	0	1	2	0	36	3	18	0	29	64	2	0	0	14	7	0	176	0	0	1	0
5:30 PM	2	1	1	0	34	2	24	0	33	49	3	0	3	35	9	0	196	1	1	0	0
5:45 PM	2	5	5	0	33	1	20	0	30	41	4	0	1	30	15	0	187	0	0	0	0
Total Survey	14	18	22	0	284	24	171	1	223	377	30	0	17	246	84	0	1,510	2	5	6	0

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Boeckman Rd				Westbound SW Boeckman Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	28	45	73	0	276	171	447	1	325	238	563	0	195	370	565	0	824	1	3	1	0
%HV	10.7%				0.7%				0.0%				2.1%				1.1%				
PHF	0.88				0.81				0.72				0.87				0.82				

By Movement	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Boeckman Rd				Westbound SW Boeckman Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	9	8	11	28	167	16	93	276	115	192	18	325	11	136	48	195	824
%HV	0.0%	25.0%	9.1%	10.7%	0.6%	6.3%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%	2.1%	1.1%
PHF	0.75	0.50	0.69	0.88	0.77	0.67	0.80	0.81	0.63	0.83	0.50	0.72	0.55	0.81	0.75	0.87	0.82

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Canyon Creek Rd				Southbound SW Canyon Creek Rd				Eastbound SW Boeckman Rd				Westbound SW Boeckman Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	10	10	0	130	15	84	1	91	170	12	0	9	134	41	0	713	1	2	5	0
4:15 PM	10	8	9	0	152	14	91	1	102	182	19	0	12	135	46	0	780	1	4	3	0
4:30 PM	7	6	8	0	152	15	88	1	114	214	16	0	10	123	42	0	795	1	3	1	0
4:45 PM	7	7	9	0	151	14	91	1	124	205	17	0	9	124	35	0	793	2	4	1	0
5:00 PM	7	8	12	0	154	9	87	0	132	207	18	0	8	112	43	0	797	1	3	1	0

LOCATION: WILSONVILLE RD SW @ SW BOECKMAN RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RR 10-032 E 1 Thursday

Peak Hour Detail

Interval		Southbound **STAFFORD**				Westbound **BOECKMAN**				Northbound **WILSONVILLE**				Eastbound **BOECKMAN**			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	23	54	7	0	1	9	8	0	12	40	7	0	24	8	41	234
4:15 PM	0	17	50	5	0	2	1	4	0	9	41	7	0	19	9	30	194
4:30 PM	0	25	61	4	0	11	8	8	0	7	50	11	0	27	12	67	291
4:45 PM	0	22	64	6	0	4	12	13	0	9	43	22	0	15	5	51	266
5:00 PM	0	24	53	2	0	1	8	13	0	7	59	12	0	25	14	60	278
5:15 PM	0	22	81	7	0	4	9	5	0	8	43	16	0	20	11	66	292
5:30 PM	0	29	61	3	0	7	2	8	0	12	51	19	0	30	14	45	281
5:45 PM	0	12	52	1	0	4	7	7	0	9	37	12	0	23	8	31	203
Totals	0	174	476	35	0	34	56	66	0	73	364	106	0	183	81	391	2039
Entering			685				156				543				655		
Exiting			789				189				725				336		
Vehicle Totals																	
Cars	0	169	470	35	0	33	52	64	0	70	361	106	0	181	76	388	2005
		97.1%	98.7%	100%		97.1%	92.9%	97.0%		95.9%	99.2%	100%		98.9%	93.8%	99.2%	98.3%
Light	0	5	5	0	0	1	1	2	0	0	2	0	0	0	1	3	20
		2.9%	1.1%	0.0%		2.9%	1.8%	3.0%		0.0%	0.5%	0.0%		0.0%	1.2%	0.8%	1.0%
Bike	0	0	0	0	0	0	3	0	0	2	0	0	0	2	4	0	11
		0.0%	0.0%	0.0%		0.0%	5.4%	0.0%		2.7%	0.0%	0.0%		1.1%	4.9%	0.0%	0.5%
Medium	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	3
		0.0%	0.2%	0.0%		0.0%	0.0%	0.0%		1.4%	0.3%	0.0%		0.0%	0.0%	0.0%	0.1%
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: WILSONVILLE RD SW @ SW BOECKMAN RD 1600-1800 Site: 0015
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RR 10-032 E 1 Thursday

Peak Hour Detail

Peak Hour: 4:30 PM - 5:30 PM

Interval		Southbound **STAFFORD**				Westbound **BOECKMAN**				Northbound **WILSONVILLE**				Eastbound **BOECKMAN**			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	0	93	259	19	0	20	37	39	0	31	195	61	0	87	42	244	1127
Factor		0.93	0.80	0.68		0.45	0.77	0.75		0.86	0.83	0.69		0.81	0.75	0.91	0.96
Entering			371				96				287				373		
Factor			0.84				0.83				0.92				0.88		
Exiting			459				92				385				191		
Factor			0.87				0.86				0.96				0.88		
Peak Vehicles																	
Cars	0	91	255	19	0	19	33	38	0	29	194	61	0	85	38	243	1105
		97.8%	98.5%	100%		95.0%	89.2%	97.4%		93.5%	99.5%	100%		97.7%	90.5%	99.6%	98.0%
Light	0	2	4	0	0	1	1	1	0	0	1	0	0	0	0	1	11
		2.2%	1.5%	0.0%		5.0%	2.7%	2.6%		0.0%	0.5%	0.0%		0.0%	0.0%	0.4%	1.0%
Bike	0	0	0	0	0	0	3	0	0	2	0	0	0	2	4	0	11
		0.0%	0.0%	0.0%		0.0%	8.1%	0.0%		6.5%	0.0%	0.0%		2.3%	9.5%	0.0%	1.0%
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%

Type of peak hour being reported: Intersection Peak

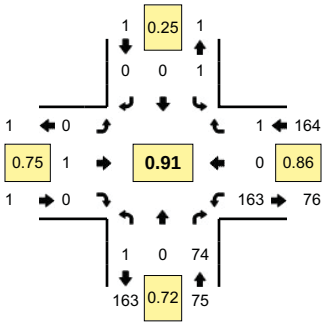
Method for determining peak hour: Total Entering Volume

LOCATION: SW Kinsman Rd -- SW Barber St

QC JOB #: 10534402

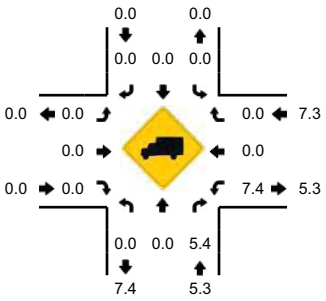
CITY/STATE: Wilsonville, OR

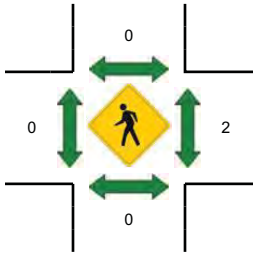
DATE: 11/3/2010

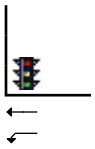


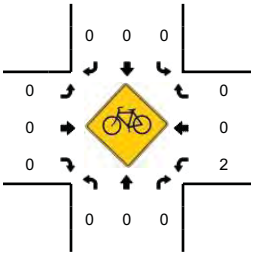
Peak-Hour: 4:45 PM -- 5:45 PM

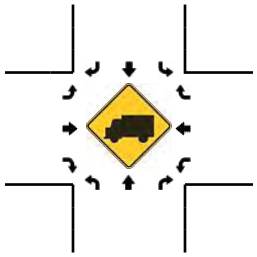
Peak 15-Min: 5:00 PM -- 5:15 PM

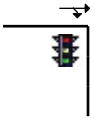


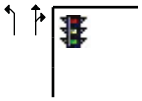


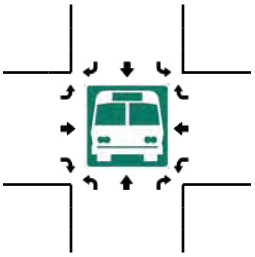












5-Min Count Period Beginning At	SW Kinsman Rd (Northbound)				SW Kinsman Rd (Southbound)				SW Barber St (Eastbound)				SW Barber St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	7	0	0	0	0	0	0	0	0	0	13	0	0	0	20	
4:05 PM	0	0	7	0	0	0	0	0	0	1	0	0	7	0	0	0	15	
4:10 PM	0	0	3	0	0	0	0	0	0	0	0	0	7	0	0	0	10	
4:15 PM	0	0	6	0	0	0	0	0	0	0	0	0	9	0	0	0	15	
4:20 PM	0	0	4	0	0	0	0	0	0	1	0	0	7	0	0	0	12	
4:25 PM	0	0	3	0	0	0	0	0	0	0	0	0	6	0	0	0	9	
4:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	12	0	0	0	14	
4:35 PM	0	0	6	0	0	0	0	0	0	0	0	0	12	0	0	0	18	
4:40 PM	0	0	3	0	0	0	0	0	0	0	0	0	15	0	0	0	18	
4:45 PM	0	0	5	0	0	0	0	0	0	0	0	0	16	0	0	0	21	
4:50 PM	0	0	4	0	0	0	0	0	0	0	0	0	17	0	0	0	21	
4:55 PM	0	0	3	0	0	0	0	0	0	1	0	0	10	0	0	0	14	187
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	14	0	0	0	16	183
5:05 PM	0	0	7	0	0	0	0	0	0	0	0	0	19	0	0	0	26	194
5:10 PM	0	0	10	0	0	0	0	0	0	0	0	0	14	0	0	0	24	208
5:15 PM	0	0	4	0	0	0	0	0	0	0	0	0	8	0	0	0	12	205
5:20 PM	1	0	12	0	1	0	0	0	0	0	0	0	10	0	1	0	25	218
5:25 PM	0	0	5	0	0	0	0	0	0	0	0	0	11	0	0	0	16	225
5:30 PM	0	0	7	0	0	0	0	0	0	0	0	0	16	0	0	0	23	234
5:35 PM	0	0	9	0	0	0	0	0	0	0	0	0	14	0	0	0	23	239
5:40 PM	0	0	6	0	0	0	0	0	0	0	0	0	14	0	0	0	20	241
5:45 PM	0	0	5	0	0	0	0	0	0	0	0	0	16	0	0	0	21	241
5:50 PM	0	0	7	0	0	0	0	0	0	1	0	0	13	0	0	0	21	241
5:55 PM	0	0	3	0	0	0	0	0	0	0	0	0	7	0	0	0	10	237

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	76	0	0	0	0	0	0	0	0	0	188	0	0	0	264
Heavy Trucks	0	0	0		0	0	0		0	0	0		24	0	0		24
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 11/12/2010 8:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

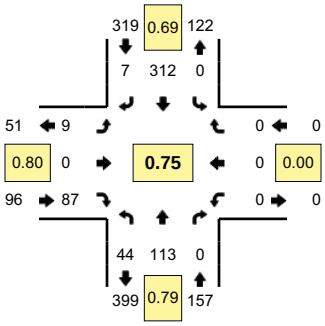
Method for determining peak hour: Total Entering Volume

LOCATION: SW Boones Ferry Rd -- SW Barber St

QC JOB #: 10534406

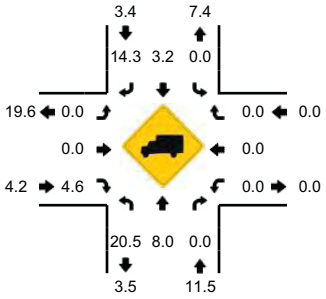
CITY/STATE: Wilsonville, OR

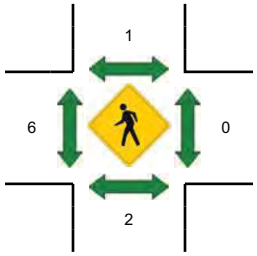
DATE: 11/3/2010

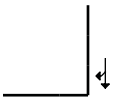


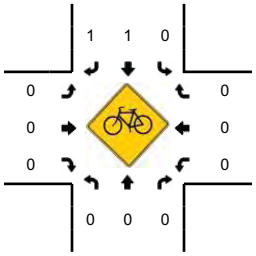
Peak-Hour: 4:30 PM -- 5:30 PM

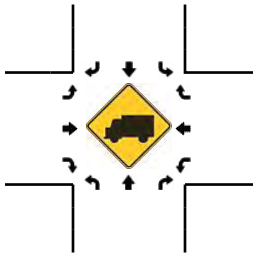
Peak 15-Min: 5:05 PM -- 5:20 PM

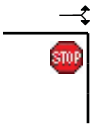


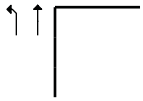


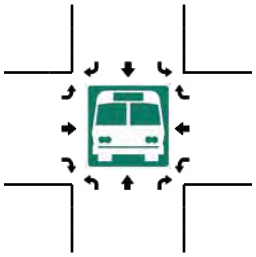












5-Min Count Period Beginning At	SW Boones Ferry Rd (Northbound)				SW Boones Ferry Rd (Southbound)				SW Barber St (Eastbound)				SW Barber St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	8	0	0	0	22	2	0	0	0	7	0	0	0	0	0	41	
4:05 PM	4	14	0	0	0	26	0	0	1	0	11	0	0	0	0	0	56	
4:10 PM	4	17	0	0	0	19	0	0	2	0	6	0	0	0	0	0	48	
4:15 PM	2	12	0	0	0	21	2	0	2	0	10	0	0	0	0	0	49	
4:20 PM	3	7	0	0	0	23	0	0	0	0	5	0	0	0	0	0	38	
4:25 PM	1	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	6	
4:30 PM	1	11	0	0	0	24	0	0	0	0	5	0	0	0	0	0	41	
4:35 PM	2	12	0	0	0	29	0	0	0	0	7	0	0	0	0	0	50	
4:40 PM	5	8	0	0	0	24	0	0	0	0	9	0	0	0	0	0	46	
4:45 PM	3	6	0	0	0	15	1	0	1	0	5	0	0	0	0	0	31	
4:50 PM	6	8	0	0	0	20	0	0	1	0	6	0	0	0	0	0	41	
4:55 PM	5	5	0	0	0	32	1	0	0	0	4	0	0	0	0	0	47	494
5:00 PM	4	8	0	0	0	33	0	0	0	0	8	0	0	0	0	0	53	506
5:05 PM	3	19	0	0	0	43	0	0	0	0	13	0	0	0	0	0	78	528
5:10 PM	7	6	0	0	0	36	3	0	1	0	6	0	0	0	0	0	59	539
5:15 PM	3	12	0	0	0	28	0	0	0	0	11	0	0	0	0	0	54	544
5:20 PM	4	6	0	0	0	15	1	0	3	0	8	0	0	0	0	0	37	543
5:25 PM	1	12	0	0	0	13	1	0	3	0	5	0	0	0	0	0	35	572
5:30 PM	3	6	0	0	0	19	0	0	1	0	2	0	0	0	0	0	31	562
5:35 PM	2	8	0	0	0	15	1	0	1	0	11	0	0	0	0	0	38	550
5:40 PM	1	5	0	0	0	24	0	0	0	0	5	0	0	0	0	0	35	539
5:45 PM	3	9	0	0	0	10	0	0	0	0	3	0	0	0	0	0	25	533
5:50 PM	3	8	0	0	0	21	0	0	1	0	7	0	0	0	0	0	40	532
5:55 PM	1	12	0	0	0	9	2	0	0	0	8	0	0	0	0	0	32	517

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	52	148	0	0	0	428	12	0	4	0	120	0	0	0	0	0	764
Heavy Trucks	8	16	0		0	8	0		0	0	12		0	0	0		44
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

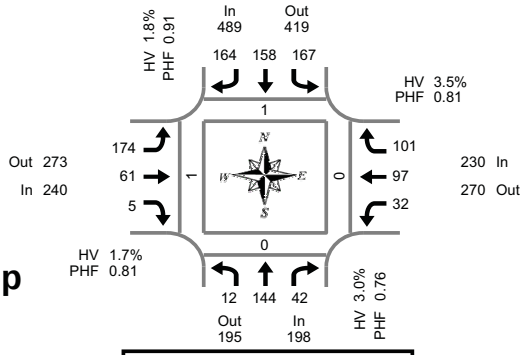
Comments:

Report generated on 11/11/2010 10:07 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:45 PM to 5:45 PM

SW Parkway Ave & SW Town Center Loop

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Town Center Loop				Westbound SW Town Center Loop				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	12	1	0	11	13	18	0	7	6	1	0	2	12	8	0	91	0	1	0	0
4:05 PM	1	5	4	0	13	12	11	0	11	6	0	0	4	5	10	0	82	0	0	0	0
4:10 PM	1	6	3	0	11	14	16	0	10	4	2	0	5	8	7	0	87	0	0	0	0
4:15 PM	2	11	3	0	7	4	18	0	8	5	0	0	2	6	6	0	72	0	0	0	0
4:20 PM	0	12	6	0	11	7	9	1	10	4	1	0	3	6	6	0	75	0	0	0	0
4:25 PM	0	10	1	0	10	11	14	0	11	3	0	0	1	5	10	0	76	1	0	0	0
4:30 PM	0	7	4	0	12	13	13	0	9	4	0	0	2	4	10	0	78	0	0	2	0
4:35 PM	0	7	1	0	14	12	11	0	13	6	1	1	0	7	7	0	79	0	0	0	1
4:40 PM	0	6	3	0	8	12	17	0	10	5	4	0	1	8	12	0	86	1	0	0	0
4:45 PM	0	11	4	0	13	14	13	0	12	3	1	0	4	7	10	0	92	0	0	0	0
4:50 PM	2	8	2	0	14	9	19	0	18	3	0	0	1	4	11	0	91	0	0	0	0
4:55 PM	1	8	2	0	11	11	18	0	7	10	1	0	2	14	10	0	95	0	0	0	0
5:00 PM	3	8	4	0	14	13	8	0	11	4	0	0	5	7	9	0	86	0	0	0	0
5:05 PM	1	22	6	0	15	16	15	0	14	5	0	0	2	6	12	0	114	0	0	0	0
5:10 PM	2	8	0	0	15	16	12	0	6	7	0	0	0	18	12	0	96	0	0	0	0
5:15 PM	0	9	6	0	15	16	15	0	11	5	0	0	2	9	9	0	97	1	0	0	0
5:20 PM	0	9	2	0	11	17	15	0	20	6	0	0	3	9	4	0	96	0	0	0	0
5:25 PM	1	15	3	0	13	18	12	0	20	2	0	0	4	5	10	0	103	0	0	0	0
5:30 PM	0	14	6	0	10	9	9	0	21	3	0	0	3	9	4	0	88	0	0	0	1
5:35 PM	2	22	2	0	14	9	14	0	13	8	0	0	3	4	10	0	101	0	0	0	0
5:40 PM	0	10	5	0	22	10	14	0	21	5	3	0	3	5	0	0	98	0	0	0	0
5:45 PM	0	14	3	0	14	6	16	0	13	4	1	0	0	4	10	0	85	0	0	3	0
5:50 PM	0	7	3	0	6	10	11	0	14	1	1	0	3	4	6	0	66	0	0	0	2
5:55 PM	0	13	0	0	8	14	19	0	11	4	0	0	1	5	8	0	83	0	0	0	0
Total Survey	16	254	74	0	292	286	337	1	301	113	16	1	56	171	201	0	2,117	3	1	5	4

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Town Center Loop				Westbound SW Town Center Loop				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	2	23	8	0	35	39	45	0	28	16	3	0	11	25	25	0	260	0	1	0	0
4:15 PM	2	33	10	0	28	22	41	1	29	12	1	0	6	17	22	0	223	1	0	0	0
4:30 PM	0	20	8	0	34	37	41	0	32	15	5	1	3	19	29	0	243	1	0	2	1
4:45 PM	3	27	8	0	38	34	50	0	37	16	2	0	7	25	31	0	278	0	0	0	0
5:00 PM	6	38	10	0	44	45	35	0	31	16	0	0	7	31	33	0	296	0	0	0	0
5:15 PM	1	33	11	0	39	51	42	0	51	13	0	0	9	23	23	0	296	1	0	0	0
5:30 PM	2	46	13	0	46	28	37	0	55	16	3	0	9	18	14	0	287	0	0	0	1
5:45 PM	0	34	6	0	28	30	46	0	38	9	2	0	4	13	24	0	234	0	0	3	2
Total Survey	16	254	74	0	292	286	337	1	301	113	16	1	56	171	201	0	2,117	3	1	5	4

Peak Hour Summary
4:45 PM to 5:45 PM

By Approach	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Town Center Loop				Westbound SW Town Center Loop				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	198	195	393	0	489	419	908	0	240	273	513	0	230	270	500	0	1,157	1	0	0	1
%HV	3.0%				1.8%				1.7%				3.5%				2.3%				
PHF	0.76				0.91				0.81				0.81				0.94				

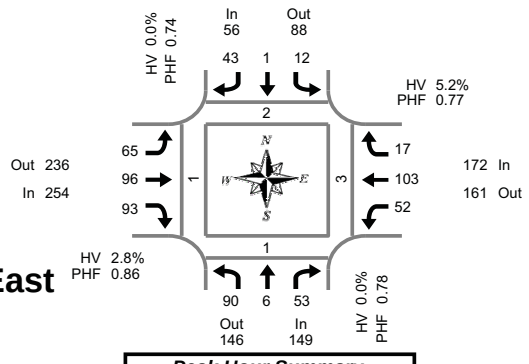
By Movement	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Town Center Loop				Westbound SW Town Center Loop				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	12	144	42	198	167	158	164	489	174	61	5	240	32	97	101	230	1,157
%HV	0.0%	2.1%	7.1%	3.0%	3.0%	1.9%	0.6%	1.8%	0.6%	1.6%	40.0%	1.7%	12.5%	0.0%	4.0%	3.5%	2.3%
PHF	0.50	0.71	0.81	0.76	0.91	0.77	0.82	0.91	0.71	0.80	0.42	0.81	0.80	0.67	0.77	0.81	0.94

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Parkway Ave				Southbound SW Parkway Ave				Eastbound SW Town Center Loop				Westbound SW Town Center Loop				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	103	34	0	135	132	177	1	126	59	11	1	27	86	107	0	1,004	2	1	2	1
4:15 PM	11	118	36	0	144	138	167	1	129	59	8	1	23	92	115	0	1,040	2	0	2	1
4:30 PM	10	118	37	0	155	167	168	0	151	60	7	1	26	98	116	0	1,113	2	0	2	1
4:45 PM	12	144	42	0	167	158	164	0	174	61	5	0	32	97	101	0	1,157	1	0	0	1
5:00 PM	9	151	40	0	157	154	160	0	175	54	5	0	29	85	94	0	1,113	1	0	3	3

Total Vehicle Summary

Clay Carney
(503) 833-2740



SW Vlahos Dr & SW Town Center Loop East

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:30 PM to 5:30 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Vlahos Dr				Southbound SW Vlahos Dr				Eastbound SW Town Center Loop East				Westbound SW Town Center Loop East				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	6	1	4	0	0	0	1	0	3	10	5	0	5	8	0	0	43	0	0	0	0
4:05 PM	8	0	5	0	0	0	5	0	5	5	6	0	5	3	1	0	43	1	1	0	0
4:10 PM	7	0	1	0	0	0	3	0	5	10	8	0	3	5	1	0	43	0	0	0	0
4:15 PM	9	1	3	0	0	1	2	0	3	8	8	0	3	7	1	0	46	0	0	0	0
4:20 PM	6	1	4	0	1	0	1	0	8	5	8	0	1	8	1	0	44	0	0	0	0
4:25 PM	9	0	3	0	1	0	7	0	1	6	4	0	2	3	2	0	38	0	0	0	0
4:30 PM	4	0	1	0	1	0	4	0	5	3	8	0	4	9	2	0	41	0	1	1	0
4:35 PM	10	1	6	0	2	0	1	0	3	6	10	0	4	5	1	0	49	0	0	0	0
4:40 PM	10	0	4	0	0	0	4	0	4	5	10	0	4	8	0	0	49	0	0	0	1
4:45 PM	12	0	5	0	1	0	3	0	6	4	13	0	8	4	2	1	58	0	0	0	0
4:50 PM	7	0	3	0	0	0	3	0	3	13	6	0	5	6	0	0	46	0	0	0	0
4:55 PM	8	1	6	0	3	0	0	0	6	8	9	0	5	11	3	0	60	1	0	0	0
5:00 PM	5	0	10	0	3	0	7	0	7	7	7	0	7	9	0	0	62	0	0	0	0
5:05 PM	7	0	3	0	0	0	4	0	7	11	2	1	3	13	2	0	52	0	0	0	0
5:10 PM	11	0	6	0	1	1	3	0	8	12	9	0	5	14	3	0	73	0	0	0	0
5:15 PM	4	3	2	0	1	0	6	0	5	11	6	0	0	8	2	0	48	0	0	2	0
5:20 PM	6	1	4	0	0	0	5	0	6	10	7	0	2	7	1	0	49	0	0	0	0
5:25 PM	6	0	3	0	0	0	3	0	5	6	6	0	5	9	1	0	44	1	0	0	0
5:30 PM	3	1	3	0	0	0	2	0	6	7	5	0	2	7	5	0	41	0	0	0	0
5:35 PM	4	0	3	0	2	0	0	0	3	6	7	0	1	8	2	0	36	0	0	0	0
5:40 PM	1	1	1	0	1	0	3	0	4	12	4	0	0	4	1	0	32	0	0	0	0
5:45 PM	6	0	4	0	0	0	3	0	7	11	8	0	1	4	1	0	45	0	0	0	0
5:50 PM	5	1	4	0	1	0	1	0	2	6	5	0	1	9	1	0	36	0	0	0	1
5:55 PM	2	0	1	0	1	0	1	0	2	7	2	0	3	7	3	0	29	0	0	0	0
Total Survey	156	12	89	0	19	2	72	0	114	189	163	1	79	176	36	1	1,107	3	2	3	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Vlahos Dr				Southbound SW Vlahos Dr				Eastbound SW Town Center Loop East				Westbound SW Town Center Loop East				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	21	1	10	0	0	0	9	0	13	25	19	0	13	16	2	0	129	1	1	0	0
4:15 PM	24	2	10	0	2	1	10	0	12	19	20	0	6	18	4	0	128	0	0	0	0
4:30 PM	24	1	11	0	3	0	9	0	12	14	28	0	12	22	3	0	139	0	1	1	1
4:45 PM	27	1	14	0	4	0	6	0	15	25	28	0	18	21	5	1	164	1	0	0	0
5:00 PM	23	0	19	0	4	1	14	0	22	30	18	1	15	36	5	0	187	0	0	0	0
5:15 PM	16	4	9	0	1	0	14	0	16	27	19	0	7	24	4	0	141	1	0	2	0
5:30 PM	8	2	7	0	3	0	5	0	13	25	16	0	3	19	8	0	109	0	0	0	0
5:45 PM	13	1	9	0	2	0	5	0	11	24	15	0	5	20	5	0	110	0	0	0	1
Total Survey	156	12	89	0	19	2	72	0	114	189	163	1	79	176	36	1	1,107	3	2	3	2

Peak Hour Summary
4:30 PM to 5:30 PM

By Approach	Northbound SW Vlahos Dr				Southbound SW Vlahos Dr				Eastbound SW Town Center Loop East				Westbound SW Town Center Loop East				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	149	146	295	0	56	88	144	0	254	236	490	1	172	161	333	1	631	2	1	3	1
%HV	0.0%				0.0%				2.8%				5.2%				2.5%				
PHF	0.78				0.74				0.86				0.77				0.84				

By Movement	Northbound SW Vlahos Dr				Southbound SW Vlahos Dr				Eastbound SW Town Center Loop East				Westbound SW Town Center Loop East				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	90	6	53	149	12	1	43	56	65	96	93	254	52	103	17	172	631
%HV	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	5.2%	0.0%	2.8%	0.0%	6.8%	11.8%	5.2%	2.5%
PHF	0.70	0.38	0.70	0.78	0.50	0.25	0.77	0.74	0.74	0.71	0.70	0.86	0.72	0.72	0.61	0.77	0.84

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Vlahos Dr				Southbound SW Vlahos Dr				Eastbound SW Town Center Loop East				Westbound SW Town Center Loop East				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	96	5	45	0	9	1	34	0	52	83	95	0	49	77	14	1	560	2	2	1	1
4:15 PM	98	4	54	0	13	2	39	0	61	88	94	1	51	97	17	1	618	1	1	1	1
4:30 PM	90	6	53	0	12	1	43	0	65	96	93	1	52	103	17	1	631	2	1	3	1
4:45 PM	74	7	49	0	12	1	39	0	66	107	81	1	43	100	22	1	601	2	0	2	0
5:00 PM	60	7	44	0	10	1	38	0	62	106	68	1	30	99	22	0	547	1	0	2	1

LOCATION: BROWN RD SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RX 10-032 E Thursday

Peak Hour Detail

Interval		Southbound BROWN RD				Westbound WILSONVILLE RD				Northbound BROWN RD				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	4	7	0	24	0	44	108	6	1	3	0	0	6	0	88	8	299
4:15 PM	0	4	0	25	0	47	130	7	1	5	0	3	2	3	82	3	312
4:30 PM	0	5	1	40	2	53	115	2	3	6	0	0	1	0	86	3	317
4:45 PM	0	5	2	39	0	45	114	8	1	3	1	1	0	0	104	4	327
5:00 PM	2	12	1	36	0	63	147	3	1	5	0	2	4	1	85	6	368
5:15 PM	0	4	0	50	0	57	145	12	2	8	1	0	0	1	91	5	376
5:30 PM	0	10	1	41	0	69	123	4	0	5	0	2	1	0	93	4	353
5:45 PM	0	9	0	37	0	48	118	2	1	5	0	0	0	0	76	7	303
Totals	6	56	5	292	2	426	1000	44	10	40	2	8	14	5	705	40	2655
Entering			353				1470				50				750		
Exiting			468				1037				54				1064		

Vehicle Totals

Cars	6	56	5	289	2	419	983	44	10	39	2	8	14	5	688	39	2609
	100%	100%	100%	99.0%	100%	98.4%	98.3%	100%	100%	97.5%	100%	100%	100%	100%	97.6%	97.5%	98.3%
Light	0	0	0	2	0	6	12	0	0	0	0	0	0	0	11	1	32
	0.0%	0.0%	0.0%	0.7%	0.0%	1.4%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	2.5%	1.2%
Bike	0	0	0	0	0	1	2	0	0	1	0	0	0	0	2	0	6
	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.2%
Medium	0	0	0	1	0	0	3	0	0	0	0	0	0	0	2	0	6
	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.2%
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: BROWN RD SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RX 10-032 E Thursday

Peak Hour Detail

Peak Hour: 4:45 PM - 5:45 PM

Interval		Southbound BROWN RD				Westbound WILSONVILLE RD				Northbound BROWN RD				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	2	31	4	166	0	234	529	27	4	21	2	5	5	2	373	19	1424
Factor	0.25	0.65	0.50	0.83		0.85	0.90	0.56	0.50	0.66	0.50	0.63	0.31	0.50	0.90	0.79	0.95
Entering			201				790				28				394		
Factor			0.93				0.92				0.78				0.91		
Exiting			255				560				33				565		
Factor			0.92				0.83				0.87				0.86		

Peak Vehicles

Cars	2	31	4	164	0	230	524	27	4	21	2	5	5	2	365	19	1405
	100%	100%	100%	98.8%		98.3%	99.1%	100%	100%	100%	100%	100%	100%	100%	97.9%	100%	98.7%
Light	0	0	0	1	0	3	3	0	0	0	0	0	0	0	6	0	13
	0.0%	0.0%	0.0%	0.6%		1.3%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.9%
Bike	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	3
	0.0%	0.0%	0.0%	0.0%		0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.2%
Medium	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
	0.0%	0.0%	0.0%	0.6%		0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.1%

LOCATION: KINSMAN RD SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RV 10-032 S Thursday

Peak Hour Detail

Interval		Southbound KINSMAN RD				Westbound WILSONVILLE RD				Northbound				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	1	21	0	25	0	11	163	0	6	0	0	0	0	0	117	12	356
4:15 PM	0	32	0	25	0	7	153	0	1	0	0	0	0	0	121	8	347
4:30 PM	0	23	0	38	1	11	160	0	1	0	0	0	0	0	134	10	378
4:45 PM	0	30	0	30	0	10	155	0	0	0	0	0	0	0	148	10	383
5:00 PM	1	35	0	34	0	9	196	0	4	0	0	0	0	0	143	12	434
5:15 PM	0	40	0	34	0	14	195	0	2	0	0	0	0	0	162	16	463
5:30 PM	1	28	0	16	0	8	188	0	2	0	0	0	0	0	148	10	401
5:45 PM	0	16	0	14	0	5	160	0	1	0	0	0	0	0	133	3	332
Totals	3	225	0	216	1	75	1370	0	17	0	0	0	0	0	1106	81	3094
Entering			441				1445				0				1187		
Exiting			156				1322				0				1595		
Vehicle Totals																	
Cars	3	217	0	200	1	49	1339	0	17	0	0	0	0	0	1081	79	2986
	100%	96.4%		92.6%	100%	65.3%	97.7%		100%						97.7%	97.5%	96.5%
Light	0	4	0	3	0	11	11	0	0	0	0	0	0	0	10	2	41
	0.0%	1.8%		1.4%	0.0%	14.7%	0.8%		0.0%						0.9%	2.5%	1.3%
Bike	0	3	0	0	0	0	7	0	0	0	0	0	0	0	7	0	17
	0.0%	1.3%		0.0%	0.0%	0.0%	0.5%		0.0%						0.6%	0.0%	0.5%
Medium	0	1	0	1	0	1	12	0	0	0	0	0	0	0	4	0	19
	0.0%	0.4%		0.5%	0.0%	1.3%	0.9%		0.0%						0.4%	0.0%	0.6%
Heavy	0	0	0	12	0	14	1	0	0	0	0	0	0	0	4	0	31
	0.0%	0.0%		5.6%	0.0%	18.7%	0.1%		0.0%						0.4%	0.0%	1.0%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: KINSMAN RD SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11RV 10-032 S Thursday

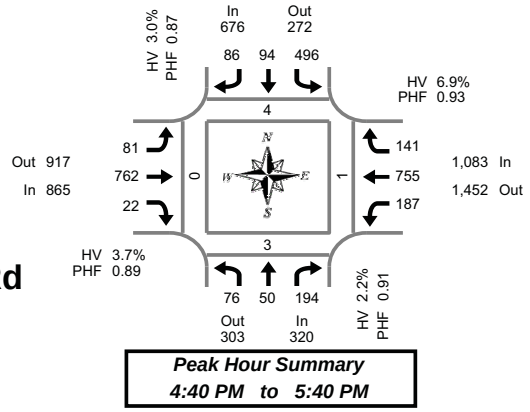
Peak Hour Detail

Peak Hour: 4:45 PM - 5:45 PM

Interval		Southbound KINSMAN RD				Westbound WILSONVILLE RD				Northbound				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	2	133	0	114	0	41	734	0	8	0	0	0	0	0	601	48	1681
Factor	0.50	0.83		0.84		0.73	0.94		0.50						0.93	0.75	0.91
Entering			247				775				0				649		
Factor			0.83				0.93								0.91		
Exiting			89				715				0				867		
Factor			0.93				0.50				0.92				0.77		
Peak Vehicles																	
Cars	2	131	0	103	0	28	722	0	8	0	0	0	0	0	590	48	1632
	100%	98.5%		90.4%		68.3%	98.4%		100%						98.2%	100%	97.1%
Light	0	1	0	2	0	3	2	0	0	0	0	0	0	0	6	0	14
	0.0%	0.8%		1.8%		7.3%	0.3%		0.0%						1.0%	0.0%	0.8%
Bike	0	1	0	0	0	0	4	0	0	0	0	0	0	0	3	0	8
	0.0%	0.8%		0.0%		0.0%	0.5%		0.0%						0.5%	0.0%	0.5%
Medium	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	6
	0.0%	0.0%		0.0%		0.0%	0.8%		0.0%						0.0%	0.0%	0.4%
Heavy	0	0	0	9	0	10	0	0	0	0	0	0	0	0	2	0	21
	0.0%	0.0%		7.9%		24.4%	0.0%		0.0%						0.3%	0.0%	1.2%

Total Vehicle Summary

Clay Carney
(503) 833-2740



SW Boones Ferry Rd & SW Wilsonville Rd

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:40 PM to 5:40 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Boones Ferry Rd				Southbound SW Boones Ferry Rd				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	6	16	0	43	7	3	0	5	55	1	0	14	53	5	0	215	0	0	0	0
4:05 PM	6	4	12	0	37	8	2	0	5	58	1	0	17	64	7	0	221	0	0	0	0
4:10 PM	6	2	21	0	45	7	5	0	6	55	1	0	20	55	10	0	233	0	0	0	0
4:15 PM	7	3	20	0	38	6	8	0	3	62	2	0	17	52	10	0	228	0	0	0	0
4:20 PM	5	3	17	0	35	5	2	0	6	73	2	0	13	64	11	0	236	0	0	0	1
4:25 PM	5	4	18	0	32	7	4	0	6	72	2	0	16	62	9	0	237	0	1	0	0
4:30 PM	7	5	15	0	40	6	9	0	6	58	2	1	17	52	12	1	229	0	0	1	0
4:35 PM	8	5	17	0	44	9	4	0	7	58	1	0	11	54	14	0	232	1	0	0	0
4:40 PM	11	3	18	0	43	7	5	0	8	59	1	0	13	56	9	0	233	1	0	0	0
4:45 PM	7	7	16	0	41	6	11	0	12	57	3	0	15	59	12	0	246	0	0	0	0
4:50 PM	6	3	17	0	39	5	6	0	7	69	2	0	17	59	10	0	240	0	1	0	0
4:55 PM	6	5	15	0	37	7	6	0	4	64	1	0	20	59	12	0	236	0	1	0	0
5:00 PM	5	6	17	0	36	8	12	1	6	69	2	0	16	56	10	0	243	0	0	0	0
5:05 PM	7	5	18	0	40	9	5	0	10	67	1	0	16	60	13	0	251	0	0	0	0
5:10 PM	5	3	13	0	50	9	12	0	8	79	2	0	13	76	14	0	284	1	1	0	0
5:15 PM	7	3	16	0	46	10	7	0	5	60	1	0	14	62	10	0	241	1	0	0	0
5:20 PM	6	5	18	0	44	8	8	0	4	56	2	0	20	59	13	0	243	0	0	1	0
5:25 PM	6	4	17	0	43	12	5	0	3	60	2	0	16	62	11	0	241	0	0	0	0
5:30 PM	4	4	13	0	37	6	4	0	5	58	2	0	11	74	15	0	233	1	0	0	0
5:35 PM	6	2	16	0	40	7	5	0	9	64	3	0	16	73	12	0	253	0	0	0	0
5:40 PM	5	5	18	0	41	6	4	0	4	50	2	0	9	63	14	0	221	0	0	0	0
5:45 PM	6	3	15	0	35	4	6	0	8	49	4	0	14	70	15	0	229	1	0	0	0
5:50 PM	5	2	16	0	28	5	7	0	5	50	2	0	12	73	13	0	218	0	0	0	0
5:55 PM	6	4	16	0	31	3	4	0	3	51	3	0	9	67	13	0	210	0	0	0	0
Total Survey	149	96	395	0	945	167	144	1	145	1,453	45	1	356	1,484	274	1	5,653	6	4	2	1

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Boones Ferry Rd				Southbound SW Boones Ferry Rd				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	19	12	49	0	125	22	10	0	16	168	3	0	51	172	22	0	669	0	0	0	0
4:15 PM	17	10	55	0	105	18	14	0	15	207	6	0	46	178	30	0	701	0	1	0	1
4:30 PM	26	13	50	0	127	22	18	0	21	175	4	1	41	162	35	1	694	2	0	1	0
4:45 PM	19	15	48	0	117	18	23	0	23	190	6	0	52	177	34	0	722	0	2	0	0
5:00 PM	17	14	48	0	126	26	29	1	24	215	5	0	45	192	37	0	778	1	1	0	0
5:15 PM	19	12	51	0	133	30	20	0	12	176	5	0	50	183	34	0	725	1	0	1	0
5:30 PM	15	11	47	0	118	19	13	0	18	172	7	0	36	210	41	0	707	1	0	0	0
5:45 PM	17	9	47	0	94	12	17	0	16	150	9	0	35	210	41	0	657	1	0	0	0
Total Survey	149	96	395	0	945	167	144	1	145	1,453	45	1	356	1,484	274	1	5,653	6	4	2	1

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound SW Boones Ferry Rd				Southbound SW Boones Ferry Rd				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	320	303	623	0	676	272	948	1	865	917	1,782	0	1,083	1,452	2,535	0	2,944
%HV	2.2%				3.0%				3.7%				6.9%				4.6%
PHF	0.91				0.87				0.89				0.93				0.95

Pedestrians Crosswalk			
North	South	East	West
4	3	1	0

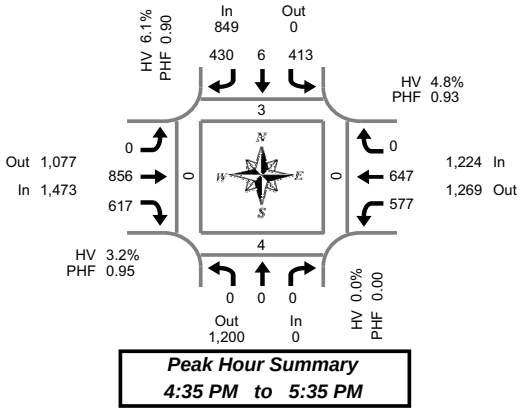
By Movement	Northbound SW Boones Ferry Rd				Southbound SW Boones Ferry Rd				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	76	50	194	320	496	94	86	676	81	762	22	865	187	755	141	1,083	2,944
%HV	2.6%	0.0%	2.6%	2.2%	3.2%	0.0%	4.7%	3.0%	3.7%	3.4%	13.6%	3.7%	1.1%	7.3%	12.8%	6.9%	4.6%
PHF	0.79	0.78	0.95	0.91	0.89	0.78	0.74	0.87	0.75	0.89	0.79	0.89	0.88	0.90	0.90	0.93	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Boones Ferry Rd				Southbound SW Boones Ferry Rd				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	81	50	202	0	474	80	65	0	75	740	19	1	190	689	121	1	2,786	2	3	1	1
4:15 PM	79	52	201	0	475	84	84	1	83	787	21	1	184	709	136	1	2,895	3	4	1	1
4:30 PM	81	54	197	0	503	96	90	1	80	756	20	1	188	714	140	1	2,919	4	3	2	0
4:45 PM	70	52	194	0	494	93	85	1	77	753	23	0	183	762	146	0	2,932	3	3	1	0
5:00 PM	68	46	193	0	471	87	79	1	70	713	26	0	166	795	153	0	2,867	4	1	1	0

Total Vehicle Summary

Clay Carney
(503) 833-2740



I-5 SB Ramps & SW Wilsonville Rd

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

Peak Hour Summary
4:35 PM to 5:35 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 SB Ramps				Southbound I-5 SB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	0	0	34	0	39	0	0	73	51	0	43	51	0	0	291	0	0	0	0
4:05 PM	0	0	0	0	27	0	34	0	0	65	48	0	45	48	0	0	267	0	0	0	0
4:10 PM	0	0	0	0	36	1	34	0	0	69	51	0	43	63	0	0	297	0	0	0	0
4:15 PM	0	0	0	0	32	0	24	0	0	66	47	0	43	40	0	0	252	1	0	0	0
4:20 PM	0	0	0	0	28	2	32	0	0	76	49	0	36	58	0	0	281	1	0	0	0
4:25 PM	0	0	0	0	32	1	33	0	0	65	41	0	40	52	0	0	264	0	0	0	0
4:30 PM	0	0	0	0	41	0	38	0	0	64	42	0	56	49	0	0	290	0	0	0	0
4:35 PM	0	0	0	0	29	0	33	0	0	88	57	0	44	55	0	1	306	0	0	0	0
4:40 PM	0	0	0	0	35	0	23	0	0	62	63	0	42	52	0	0	277	0	0	0	0
4:45 PM	0	0	0	0	34	2	38	0	0	72	46	0	43	53	0	0	288	0	1	0	0
4:50 PM	0	0	0	0	23	0	29	0	0	63	54	0	48	46	0	0	263	0	0	0	0
4:55 PM	0	0	0	0	32	1	43	0	0	81	39	0	53	66	0	0	315	0	0	0	0
5:00 PM	0	0	0	0	38	0	28	0	0	73	51	0	56	50	0	0	296	0	0	0	0
5:05 PM	0	0	0	0	36	0	33	0	0	67	56	0	47	56	0	2	295	0	2	0	0
5:10 PM	0	0	0	0	45	0	31	0	0	71	58	0	43	59	0	0	307	0	0	0	0
5:15 PM	0	0	0	0	34	0	46	0	0	66	50	0	47	62	0	0	305	2	1	0	0
5:20 PM	0	0	0	0	33	1	37	0	0	77	49	0	48	55	0	0	300	0	0	0	0
5:25 PM	0	0	0	0	39	2	39	0	0	67	51	0	49	50	0	0	297	1	0	0	0
5:30 PM	0	0	0	0	35	0	50	0	0	69	43	1	57	43	0	0	297	0	0	0	0
5:35 PM	0	0	0	0	51	0	27	0	0	66	51	0	46	55	0	0	296	0	0	0	0
5:40 PM	0	0	0	0	45	1	32	0	0	67	36	0	45	54	0	0	280	0	0	0	0
5:45 PM	0	0	0	0	30	0	29	0	0	54	36	0	46	56	0	0	251	0	0	0	0
5:50 PM	0	0	0	0	30	2	33	0	0	62	35	0	39	50	0	0	251	0	0	0	0
5:55 PM	0	0	0	0	34	0	29	0	0	46	33	0	42	48	0	0	232	0	0	0	0
Total Survey	0	0	0	0	833	13	814	0	0	1,629	1,137	1	1,101	1,271	0	3	6,798	5	4	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 SB Ramps				Southbound I-5 SB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	0	0	97	1	107	0	0	207	150	0	131	162	0	0	855	0	0	0	0
4:15 PM	0	0	0	0	92	3	89	0	0	207	137	0	119	150	0	0	797	2	0	0	0
4:30 PM	0	0	0	0	105	0	94	0	0	214	162	0	142	156	0	1	873	0	0	0	0
4:45 PM	0	0	0	0	89	3	110	0	0	216	139	0	144	165	0	0	866	0	1	0	0
5:00 PM	0	0	0	0	119	0	92	0	0	211	165	0	146	165	0	2	898	0	2	0	0
5:15 PM	0	0	0	0	106	3	122	0	0	210	150	0	144	167	0	0	902	3	1	0	0
5:30 PM	0	0	0	0	131	1	109	0	0	202	130	1	148	152	0	0	873	0	0	0	0
5:45 PM	0	0	0	0	94	2	91	0	0	162	104	0	127	154	0	0	734	0	0	0	0
Total Survey	0	0	0	0	833	13	814	0	0	1,629	1,137	1	1,101	1,271	0	3	6,798	5	4	0	0

Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound I-5 SB Ramps				Southbound I-5 SB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	0	1,200	1,200	0	849	0	849	0	1,473	1,077	2,550	1	1,224	1,269	2,493	3	3,546	3	4	0	0
%HV		0.0%				6.1%				3.2%				4.8%			4.5%				
PHF		0.00				0.90				0.95				0.93			0.97				

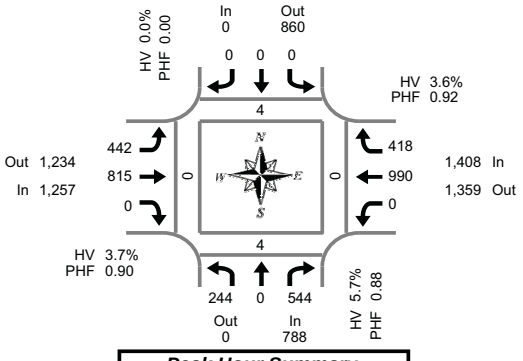
By Movement	Northbound I-5 SB Ramps				Southbound I-5 SB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	0	0	0	413	6	430	849	0	856	617	1,473	577	647	0	1,224	3,546
%HV	0.0%	0.0%	0.0%	0.0%	2.9%	0.0%	9.3%	6.1%	0.0%	3.7%	2.4%	3.2%	3.8%	5.7%	0.0%	4.8%	4.5%
PHF	0.00	0.00	0.00	0.00	0.87	0.50	0.85	0.90	0.00	0.96	0.93	0.95	0.92	0.91	0.00	0.93	0.97

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 SB Ramps				Southbound I-5 SB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	0	0	0	0	383	7	400	0	0	844	588	0	536	633	0	1	3,391	2	1	0	0
4:15 PM	0	0	0	0	405	6	385	0	0	848	603	0	551	636	0	3	3,434	2	3	0	0
4:30 PM	0	0	0	0	419	6	418	0	0	851	616	0	576	653	0	3	3,539	3	4	0	0
4:45 PM	0	0	0	0	445	7	433	0	0	839	584	1	582	649	0	2	3,539	3	4	0	0
5:00 PM	0	0	0	0	450	6	414	0	0	785	549	1	565	638	0	2	3,407	3	3	0	0

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:35 PM to 5:35 PM

I-5 NB Ramps & SW Wilsonville Rd

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 NB Ramps				Southbound I-5 NB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	12	0	27	0	0	0	0	0	34	61	0	0	0	89	39	0	262	0	0	0	0
4:05 PM	14	0	32	0	0	0	0	0	34	64	0	0	0	68	33	0	245	0	0	0	0
4:10 PM	15	0	33	0	0	0	0	0	42	63	0	0	0	79	43	0	275	1	1	0	0
4:15 PM	15	0	26	0	0	0	0	0	38	67	0	0	0	71	29	0	246	0	0	0	0
4:20 PM	26	0	27	0	0	0	0	0	32	63	0	0	0	79	32	0	259	0	0	0	0
4:25 PM	22	0	50	0	0	0	0	0	31	73	0	0	0	65	35	0	276	0	0	0	0
4:30 PM	18	0	40	0	0	0	0	0	37	65	0	0	0	72	41	0	273	0	0	0	0
4:35 PM	18	0	44	0	0	0	0	0	45	69	0	0	0	74	37	1	287	1	1	0	0
4:40 PM	19	0	48	0	0	0	0	0	35	64	0	0	0	87	29	0	282	0	0	0	0
4:45 PM	19	0	49	0	0	0	0	0	29	61	0	0	0	74	33	0	265	0	0	0	0
4:50 PM	17	0	33	0	0	0	0	0	28	83	0	0	0	78	34	0	273	0	0	0	0
4:55 PM	19	0	34	0	0	0	0	0	34	58	0	0	0	84	35	0	264	0	0	0	0
5:00 PM	17	0	37	0	0	0	0	0	35	70	0	0	0	85	41	0	285	0	0	0	0
5:05 PM	22	0	46	0	0	0	0	0	42	71	0	0	0	93	37	2	311	0	2	0	0
5:10 PM	19	0	56	0	0	0	0	0	51	82	0	0	0	94	33	0	335	2	0	0	0
5:15 PM	28	0	38	0	0	0	0	0	34	63	0	0	0	85	31	0	279	0	0	0	0
5:20 PM	23	0	53	0	0	0	0	0	47	60	0	0	0	77	46	0	306	0	1	0	0
5:25 PM	24	0	55	0	0	0	0	0	29	67	0	1	0	76	25	0	276	1	0	0	0
5:30 PM	19	0	51	0	0	0	0	0	33	67	0	0	0	83	37	0	290	0	0	0	0
5:35 PM	20	0	45	0	0	0	0	0	43	74	0	0	0	73	27	0	282	2	0	0	0
5:40 PM	18	0	39	0	0	0	0	0	27	70	0	0	0	66	46	0	266	1	0	0	0
5:45 PM	23	0	42	0	0	0	0	0	32	57	0	0	0	85	27	0	266	0	0	0	0
5:50 PM	22	0	31	0	0	0	0	0	32	56	0	0	0	72	22	0	235	0	0	0	0
5:55 PM	21	0	42	0	0	0	0	0	29	71	0	0	0	75	31	0	269	1	0	0	0
Total Survey	470	0	978	0	0	0	0	0	853	1,599	0	1	0	1,884	823	3	6,607	9	5	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 NB Ramps				Southbound I-5 NB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	41	0	92	0	0	0	0	0	110	188	0	0	0	236	115	0	782	1	1	0	0
4:15 PM	63	0	103	0	0	0	0	0	101	203	0	0	0	215	96	0	781	0	0	0	0
4:30 PM	55	0	132	0	0	0	0	0	117	198	0	0	0	233	107	1	842	1	1	0	0
4:45 PM	55	0	116	0	0	0	0	0	91	202	0	0	0	236	102	0	802	0	0	0	0
5:00 PM	58	0	139	0	0	0	0	0	128	223	0	0	0	272	111	2	931	2	2	0	0
5:15 PM	75	0	146	0	0	0	0	0	110	190	0	1	0	238	102	0	861	1	1	0	0
5:30 PM	57	0	135	0	0	0	0	0	103	211	0	0	0	222	110	0	838	3	0	0	0
5:45 PM	66	0	115	0	0	0	0	0	93	184	0	0	0	232	80	0	770	1	0	0	0
Total Survey	470	0	978	0	0	0	0	0	853	1,599	0	1	0	1,884	823	3	6,607	9	5	0	0

Peak Hour Summary
4:35 PM to 5:35 PM

By Approach	Northbound I-5 NB Ramps				Southbound I-5 NB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	788	0	788	0	0	860	860	0	1,257	1,234	2,491	1	1,408	1,359	2,767	3	3,453	4	4	0	0
%HV	5.7%				0.0%				3.7%				3.6%				4.1%				
PHF	0.88				0.00				0.90				0.92				0.93				

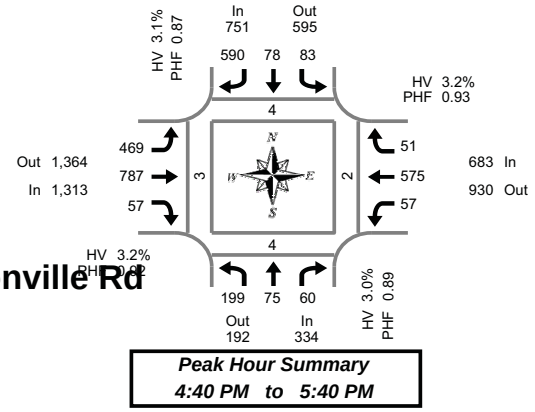
By Movement	Northbound I-5 NB Ramps				Southbound I-5 NB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	244	0	544	788	0	0	0	0	442	815	0	1,257	0	990	418	1,408	3,453
%HV	9.8%	0.0%	3.9%	5.7%	0.0%	0.0%	0.0%	0.0%	5.0%	2.9%	0.0%	3.7%	0.0%	4.0%	2.6%	3.6%	4.1%
PHF	0.81	0.00	0.86	0.88	0.00	0.00	0.00	0.00	0.84	0.91	0.00	0.90	0.00	0.91	0.92	0.92	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound I-5 NB Ramps				Southbound I-5 NB Ramps				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	214	0	443	0	0	0	0	0	419	791	0	0	0	920	420	1	3,207	2	2	0	0
4:15 PM	231	0	490	0	0	0	0	0	437	826	0	0	0	956	416	3	3,356	3	3	0	0
4:30 PM	243	0	533	0	0	0	0	0	446	813	0	1	0	979	422	3	3,436	4	4	0	0
4:45 PM	245	0	536	0	0	0	0	0	432	826	0	1	0	968	425	2	3,432	6	3	0	0
5:00 PM	256	0	535	0	0	0	0	0	434	808	0	1	0	964	403	2	3,400	7	3	0	0

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:40 PM to 5:40 PM

SW Town Center Loop West & SW Wilsonville Rd

Tuesday, January 29, 2008
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Town Center Loop West				Southbound SW Town Center Loop West				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	14	5	2	0	4	6	44	0	38	48	2	0	2	43	2	0	210	0	0	0	1
4:05 PM	20	4	3	0	3	5	45	0	26	48	3	0	3	46	4	0	210	0	1	0	0
4:10 PM	16	5	3	0	4	6	44	0	27	62	4	0	2	59	3	0	235	1	0	1	0
4:15 PM	9	3	6	0	5	3	39	0	42	50	7	1	1	47	7	0	219	1	0	1	1
4:20 PM	18	10	3	0	5	3	44	0	29	48	4	0	3	50	4	0	221	1	0	2	0
4:25 PM	14	3	2	0	5	4	43	0	37	58	9	0	4	55	9	0	243	1	2	0	2
4:30 PM	17	6	6	0	5	6	48	0	45	48	5	0	3	43	4	0	236	1	1	1	0
4:35 PM	15	4	5	0	4	6	47	0	33	55	5	0	9	55	3	0	241	0	1	0	0
4:40 PM	15	10	4	0	10	6	46	0	40	70	5	0	3	49	8	1	266	0	0	0	0
4:45 PM	10	6	7	0	5	5	43	0	41	61	4	0	3	60	5	0	250	0	0	0	0
4:50 PM	16	5	6	0	5	4	53	0	41	55	8	0	6	35	3	0	237	0	1	0	1
4:55 PM	17	5	4	0	6	11	52	0	38	60	3	0	3	44	6	0	249	0	1	0	0
5:00 PM	19	11	9	0	8	5	59	0	34	64	9	0	4	60	4	0	286	0	0	1	0
5:05 PM	20	6	3	0	9	7	59	0	48	61	3	0	8	49	4	0	277	0	1	0	1
5:10 PM	17	7	2	0	6	5	42	0	39	70	2	0	3	47	4	0	244	1	0	0	1
5:15 PM	17	8	6	0	7	11	45	0	29	59	6	0	3	52	1	0	244	0	0	0	0
5:20 PM	16	3	5	0	8	5	44	0	50	79	4	0	6	42	4	0	266	0	0	0	0
5:25 PM	15	4	5	0	6	6	44	0	40	64	3	0	4	42	5	0	238	2	0	1	0
5:30 PM	19	6	5	0	8	6	53	0	38	73	4	0	9	45	2	0	268	0	1	0	0
5:35 PM	18	4	4	0	5	7	50	0	31	71	6	0	5	50	5	0	256	1	0	0	0
5:40 PM	20	3	2	0	5	7	48	0	35	61	4	0	4	44	5	0	238	0	1	0	1
5:45 PM	14	3	4	0	5	4	38	0	34	71	3	0	3	41	6	0	226	0	1	0	0
5:50 PM	16	4	5	0	4	8	47	0	35	64	5	0	8	55	7	0	258	0	0	0	0
5:55 PM	16	4	2	0	6	6	41	0	31	64	5	0	2	44	6	0	227	0	0	0	0
Total Survey	388	129	103	0	138	142	1,118	0	881	1,464	113	1	101	1,157	111	1	5,845	9	11	7	8

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Town Center Loop West				Southbound SW Town Center Loop West				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	50	14	8	0	11	17	133	0	91	158	9	0	7	148	9	0	655	1	1	1	1
4:15 PM	41	16	11	0	15	10	126	0	108	156	20	1	8	152	20	0	683	3	2	3	3
4:30 PM	47	20	15	0	19	18	141	0	118	173	15	0	15	147	15	1	743	1	2	1	0
4:45 PM	43	16	17	0	16	20	148	0	120	176	15	0	12	139	14	0	736	0	2	0	1
5:00 PM	56	24	14	0	23	17	160	0	121	195	14	0	15	156	12	0	807	1	1	1	2
5:15 PM	48	15	16	0	21	22	133	0	119	202	13	0	13	136	10	0	748	2	0	1	0
5:30 PM	57	13	11	0	18	20	151	0	104	205	14	0	18	139	12	0	762	1	2	0	1
5:45 PM	46	11	11	0	15	18	126	0	100	199	13	0	13	140	19	0	711	0	1	0	0
Total Survey	388	129	103	0	138	142	1,118	0	881	1,464	113	1	101	1,157	111	1	5,845	9	11	7	8

Peak Hour Summary
4:40 PM to 5:40 PM

By Approach	Northbound SW Town Center Loop West				Southbound SW Town Center Loop West				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	334	192	526	0	751	595	1,346	0	1,313	1,364	2,677	0	683	930	1,613	1	3,081
%HV	3.0%				3.1%				3.2%				3.2%				3.1%
PHF	0.89				0.87				0.92				0.93				0.95

Pedestrians Crosswalk			
North	South	East	West
4	4	2	3

By Movement	Northbound SW Town Center Loop West				Southbound SW Town Center Loop West				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	199	75	60	334	83	78	590	751	469	787	57	1,313	57	575	51	683	3,081
%HV	3.5%	2.7%	1.7%	3.0%	3.6%	6.4%	2.5%	3.1%	2.8%	3.3%	5.3%	3.2%	0.0%	3.8%	0.0%	3.2%	3.1%
PHF	0.89	0.78	0.79	0.89	0.90	0.85	0.87	0.87	0.92	0.91	0.71	0.92	0.75	0.92	0.80	0.93	0.95

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound SW Town Center Loop West				Southbound SW Town Center Loop West				Eastbound SW Wilsonville Rd				Westbound SW Wilsonville Rd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	181	66	51	0	61	65	548	0	437	663	59	1	42	586	58	1	2,817	5	7	5	5
4:15 PM	187	76	57	0	73	65	575	0	467	700	64	1	50	594	61	1	2,969	5	7	5	6
4:30 PM	194	75	62	0	79	77	582	0	478	746	57	0	55	578	51	1	3,034	4	5	3	3
4:45 PM	204	68	58	0	78	79	592	0	464	778	56	0	58	570	48	0	3,053	4	5	2	4
5:00 PM	207	63	52	0	77	77	570	0	444	801	54	0	59	571	53	0	3,028	4	4	2	3

LOCATION: REBEKAH ST SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SH 10-032 S Thursday

Peak Hour Detail

Interval		Southbound REBEKAH ST				Westbound WILSONVILLE RD				Northbound REBEKAH ST				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	1	38	12	16	2	13	91	7	1	5	4	8	1	14	73	40	326
4:15 PM	0	30	17	18	2	17	73	4	2	3	3	14	8	14	111	33	349
4:30 PM	0	36	3	18	3	19	74	10	1	8	6	11	9	12	113	42	365
4:45 PM	2	37	15	28	2	19	79	10	0	12	6	18	1	6	87	38	360
5:00 PM	1	48	10	22	1	21	90	12	0	5	7	10	6	7	116	42	398
5:15 PM	2	53	11	25	0	23	88	11	0	7	9	11	3	9	129	47	428
5:30 PM	1	50	15	42	1	24	99	11	0	7	6	11	4	10	115	37	433
5:45 PM	3	32	9	23	2	24	77	13	0	7	6	14	1	9	138	41	399
Totals	10	324	92	192	13	160	671	78	4	54	47	97	33	81	882	320	3058
Entering			608				909				198				1283		
Exiting			527				1128				251				1092		

Vehicle Totals

Cars	10	321	90	192	13	159	659	78	4	51	47	96	33	80	875	316	3024
	100%	99.1%	97.8%	100%	100%	99.4%	98.2%	100%	100%	94.4%	100%	99.0%	100%	98.8%	99.2%	98.8%	98.9%
Light	0	3	0	0	0	1	6	0	0	1	0	1	0	1	2	3	18
	0.0%	0.9%	0.0%	0.0%	0.0%	0.6%	0.9%	0.0%	0.0%	1.9%	0.0%	1.0%	0.0%	1.2%	0.2%	0.9%	0.6%
Bike	0	0	2	0	0	0	2	0	0	2	0	0	0	0	2	0	8
	0.0%	0.0%	2.2%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	3.7%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.3%
Medium	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	1	4
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.1%
Heavy	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	4
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: REBEKAH ST SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SH 10-032 S Thursday

Peak Hour Detail

Peak Hour: 5:00 PM - 6:00 PM

Interval		Southbound REBEKAH ST				Westbound WILSONVILLE RD				Northbound REBEKAH ST				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	7	183	45	112	4	92	354	47	0	26	28	46	14	35	498	167	1658
Factor	0.58	0.86	0.75	0.67	0.50	0.96	0.89	0.90		0.93	0.78	0.82	0.58	0.88	0.90	0.89	0.96
Entering			340				493				100				700		
Factor			0.79				0.92				0.93				0.93		
Exiting			287				636				127				583		
Factor			0.90				0.80				0.90				0.93		

Peak Vehicles

Cars	7	182	45	112	4	92	350	47	0	26	28	46	14	34	493	164	1644
	100%	99.5%	100%	100%	100%	100%	98.9%	100%		100%	100%	100%	100%	97.1%	99.0%	98.2%	99.2%
Light	0	1	0	0	0	0	1	0	0	0	0	0	0	1	2	2	7
	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%		0.0%	0.0%	0.0%	0.0%	2.9%	0.4%	1.2%	0.4%
Bike	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.6%	0.1%
Heavy	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	4
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%

LOCATION: TOWN CENTER LOOP E SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SJ 10-032 W Thursday

Peak Hour Detail

Interval		Southbound TOWN CENTER LP				Westbound WILSONVILLE RD				Northbound TOWN CENTER LP				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
4:00 PM	0	41	9	22	1	12	63	6	0	8	9	4	0	10	71	16	272
4:15 PM	3	16	5	22	0	16	67	6	0	7	6	11	2	1	103	26	291
4:30 PM	4	25	8	25	3	15	68	10	0	4	7	4	2	9	100	28	312
4:45 PM	1	30	19	27	1	20	69	22	1	10	11	11	4	16	89	21	352
5:00 PM	0	33	18	34	1	20	79	22	4	15	15	12	4	10	94	29	390
5:15 PM	2	23	18	31	2	20	92	8	0	7	14	5	0	11	121	30	384
5:30 PM	0	20	18	21	1	11	101	7	3	9	2	12	0	11	133	28	377
5:45 PM	3	20	5	28	4	17	87	14	0	7	7	10	0	27	95	45	369
Totals	13	208	100	210	13	131	626	95	8	67	71	69	12	95	806	223	2747
Entering			518				852				207				1124		
Exiting			425				1083				290				903		
Vehicle Totals																	
Cars	13	205	99	210	13	129	616	95	8	67	69	67	12	93	798	221	2715
	100%	98.6%	99.0%	100%	100%	98.5%	98.4%	100%	100%	100%	97.2%	97.1%	100%	97.9%	99.0%	99.1%	98.8%
Light	0	0	0	0	0	0	9	0	0	0	1	0	0	0	4	1	15
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.5%	0.4%	0.5%
Bike	0	1	1	0	0	2	0	0	0	0	1	1	0	2	2	0	10
	0.0%	0.5%	1.0%	0.0%	0.0%	1.5%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%	0.0%	2.1%	0.2%	0.0%	0.4%
Medium	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Heavy	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
	0.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.4%	0.1%

WWW.TRAFSTATS.COM
OFFICE 503.646.2942

LOCATION: TOWN CENTER LOOP E SW @ SW WILSONVILLE RD 1600-1800 Site: 0017
CITY: WILSONVILLE, OR Date: 10/21/2010
FILENAME: V11SJ 10-032 W Thursday

Peak Hour Detail

Peak Hour: 5:00 PM - 6:00 PM

Interval		Southbound TOWN CENTER LP				Westbound WILSONVILLE RD				Northbound TOWN CENTER LP				Eastbound WILSONVILLE RD			
Begin	Ped1	Right	Thru	Left	Ped2	Right	Thru	Left	Ped3	Right	Thru	Left	Ped4	Right	Thru	Left	Total
Totals	5	96	59	114	8	68	359	51	7	38	38	39	4	59	443	132	1520
Factor	0.42	0.73	0.82	0.84	0.50	0.85	0.89	0.58	0.44	0.63	0.63	0.81	0.25	0.55	0.83	0.73	0.97
Entering			269				478				115				634		
Factor			0.79				0.99				0.68				0.92		
Exiting			238				595				169				494		
Factor			0.85				0.98				0.95				0.77		
Peak Vehicles																	
Cars	5	94	58	114	8	68	356	51	7	38	38	38	4	58	440	130	1507
	100%	97.9%	98.3%	100%	100%	100%	99.2%	100%	100%	100%	100%	97.4%	100%	98.3%	99.3%	98.5%	99.1%
Light	0	0	0	0	0	0	3	0	0	0	0	0	0	0	2	1	6
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.8%	0.4%
Bike	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2
	0.0%	0.0%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%	0.0%	0.0%	0.1%
Medium	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%
Heavy	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	4
	0.0%	2.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	0.0%	0.0%	0.0%	0.8%	0.3%

Type of peak hour being reported: Intersection Peak

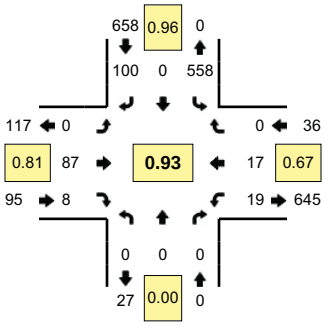
Method for determining peak hour: Total Entering Volume

LOCATION: I-5 SB Ramp -- Miley Rd

QC JOB #: 10622801

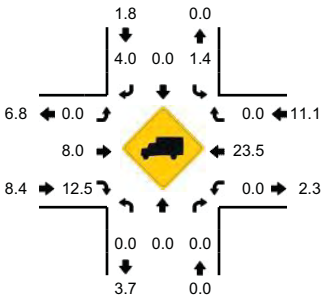
CITY/STATE: Wilsonville, OR

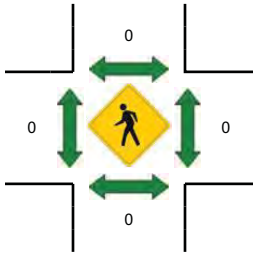
DATE: 5/24/2011

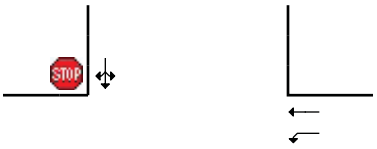


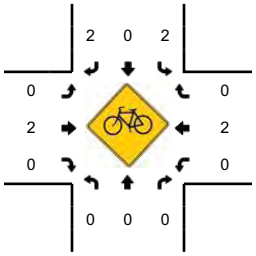
Peak-Hour: 4:30 PM -- 5:30 PM

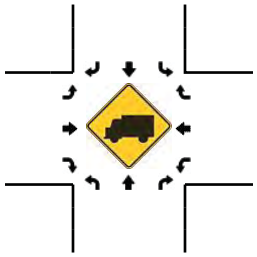
Peak 15-Min: 5:15 PM -- 5:30 PM

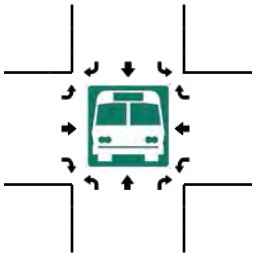












5-Min Count Period Beginning At	I-5 SB Ramp (Northbound)				I-5 SB Ramp (Southbound)				Miley Rd (Eastbound)				Miley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	39	0	8	0	0	7	0	0	6	2	0	0	62	
4:05 PM	0	0	0	0	43	0	9	0	0	10	0	0	1	3	0	0	66	
4:10 PM	0	0	0	0	34	0	12	0	0	9	0	0	5	1	0	0	61	
4:15 PM	0	0	0	0	49	0	10	0	0	5	0	0	1	2	0	0	67	
4:20 PM	0	0	0	0	43	0	6	0	0	7	0	0	3	1	0	0	60	
4:25 PM	0	0	0	0	33	0	10	0	0	7	0	0	4	5	0	0	59	
4:30 PM	0	0	0	0	46	0	9	0	0	6	1	0	2	1	0	0	65	
4:35 PM	0	0	0	0	44	0	6	0	0	6	0	0	1	1	0	0	58	
4:40 PM	0	0	0	0	49	0	8	0	0	3	1	0	1	1	0	0	63	
4:45 PM	0	0	0	0	49	0	1	0	0	8	1	0	1	1	0	0	61	
4:50 PM	0	0	0	0	42	0	16	0	0	11	1	0	1	1	0	0	72	
4:55 PM	0	0	0	0	48	0	12	0	0	2	0	0	2	1	0	0	65	759
5:00 PM	0	0	0	0	40	0	4	0	0	5	2	0	3	1	0	0	55	752
5:05 PM	0	0	0	0	43	0	9	0	0	7	0	0	3	1	0	0	63	749
5:10 PM	0	0	0	0	54	0	7	0	0	9	1	0	1	2	0	0	74	762
5:15 PM	0	0	0	0	48	0	9	0	0	7	0	0	1	3	0	0	68	763
5:20 PM	0	0	0	0	44	0	9	0	0	10	0	0	3	2	0	0	68	771
5:25 PM	0	0	0	0	51	0	10	0	0	13	1	0	0	2	0	0	77	789
5:30 PM	0	0	0	0	33	0	10	0	0	4	0	0	3	0	0	0	50	774
5:35 PM	0	0	0	0	44	0	9	0	0	12	0	0	1	3	0	0	69	785
5:40 PM	0	0	0	0	44	0	10	0	0	6	0	0	2	1	0	0	63	785
5:45 PM	0	0	0	0	38	0	3	0	0	9	0	0	0	2	0	0	52	776
5:50 PM	0	0	0	0	36	0	11	0	0	6	1	0	3	1	0	0	58	762
5:55 PM	0	0	0	0	31	0	4	0	0	7	1	0	0	0	0	0	43	740

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	572	0	112	0	0	120	4	0	16	28	0	0	852
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	1		0	2	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

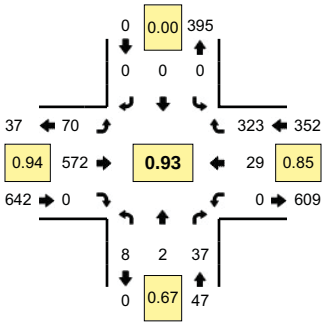
Method for determining peak hour: Total Entering Volume

LOCATION: I-5 NB Ramp -- Miley Rd

QC JOB #: 10622802

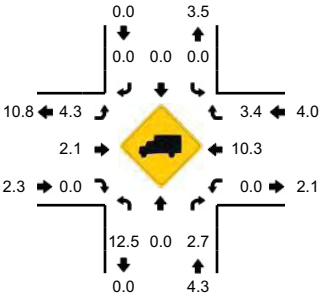
CITY/STATE: Wilsonville, OR

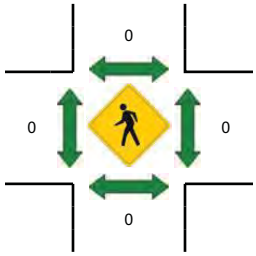
DATE: 5/24/2011

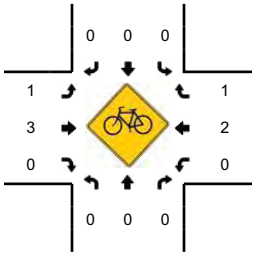


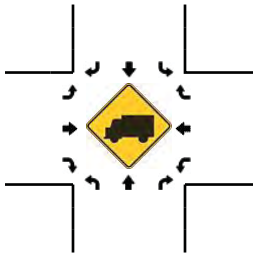
Peak-Hour: 4:30 PM -- 5:30 PM

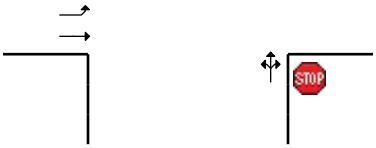
Peak 15-Min: 5:10 PM -- 5:25 PM

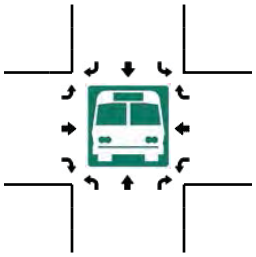












5-Min Count Period Beginning At	I-5 NB Ramp (Northbound)				I-5 NB Ramp (Southbound)				Miley Rd (Eastbound)				Miley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	3	0	0	0	0	0	8	40	0	0	0	8	24	0	83	
4:05 PM	0	0	1	0	0	0	0	0	8	47	0	0	0	4	20	0	80	
4:10 PM	0	0	0	0	0	0	0	0	6	35	0	0	0	6	36	0	83	
4:15 PM	0	0	4	0	0	0	0	0	6	49	0	0	0	3	32	0	94	
4:20 PM	0	0	1	0	0	0	0	0	4	46	0	0	0	5	30	0	86	
4:25 PM	1	0	3	0	0	0	0	0	2	38	0	0	0	7	26	0	77	
4:30 PM	0	0	1	0	0	0	0	0	4	46	0	0	0	3	19	0	73	
4:35 PM	1	0	4	0	0	0	0	0	5	46	0	0	0	1	44	0	101	
4:40 PM	0	0	4	0	0	0	0	0	3	48	0	0	0	2	26	0	83	
4:45 PM	0	0	2	0	0	0	0	0	6	50	0	0	0	2	23	0	83	
4:50 PM	0	0	3	0	0	0	0	0	6	47	0	0	0	2	26	0	84	
4:55 PM	0	0	1	0	0	0	0	0	3	50	0	0	0	3	27	0	84	1011
5:00 PM	1	0	2	0	0	0	0	0	5	38	0	0	0	3	30	0	79	1007
5:05 PM	2	0	4	0	0	0	0	0	7	44	0	0	0	3	23	0	83	1010
5:10 PM	1	0	1	0	0	0	0	0	6	57	0	0	0	1	33	0	99	1026
5:15 PM	0	1	3	0	0	0	0	0	7	48	0	0	0	4	31	0	94	1026
5:20 PM	2	1	5	0	0	0	0	0	6	46	0	0	0	3	23	0	86	1026
5:25 PM	1	0	7	0	0	0	0	0	12	52	0	0	0	2	18	0	92	1041
5:30 PM	1	0	4	0	0	0	0	0	3	38	0	0	0	1	22	0	69	1037
5:35 PM	1	0	3	0	0	0	0	0	11	44	0	0	0	3	28	0	90	1026
5:40 PM	1	0	4	0	0	0	0	0	5	43	0	0	0	3	27	0	83	1026
5:45 PM	0	0	3	0	0	0	0	0	8	37	0	0	0	1	21	0	70	1013
5:50 PM	1	0	4	0	0	0	0	0	7	40	0	0	0	3	24	0	79	1008
5:55 PM	0	0	3	0	0	0	0	0	7	29	0	0	0	0	17	0	56	980

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	8	36	0	0	0	0	0	76	604	0	0	0	32	348	0	1116
Heavy Trucks	0	0	0		0	0	0		4	4	0		0	4	8		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

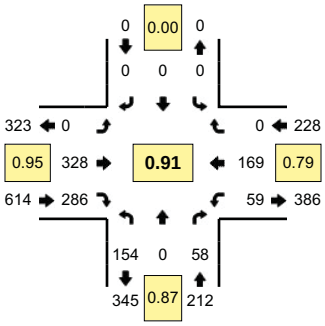
Method for determining peak hour: Total Entering Volume

LOCATION: Airport Rd -- Miley Rd

QC JOB #: 10622803

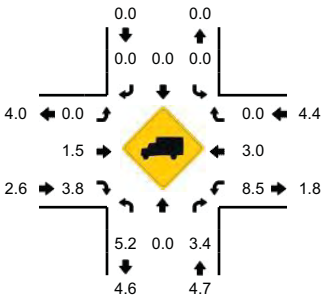
CITY/STATE: Wilsonville, OR

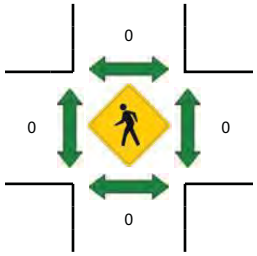
DATE: 5/24/2011

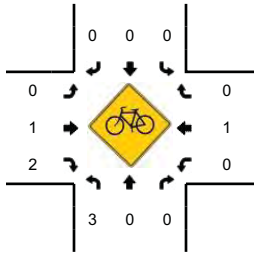


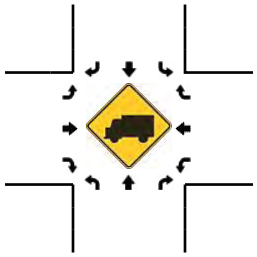
Peak-Hour: 4:30 PM -- 5:30 PM

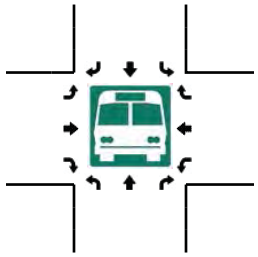
Peak 15-Min: 5:10 PM -- 5:25 PM











5-Min Count Period Beginning At	Airport Rd (Northbound)				Airport Rd (Southbound)				Miley Rd (Eastbound)				Miley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	13	0	4	0	0	0	0	0	0	25	13	0	5	15	0	0	75	
4:05 PM	10	0	0	0	0	0	0	0	0	22	24	0	4	16	0	0	76	
4:10 PM	11	0	5	0	0	0	0	0	0	17	17	0	9	25	0	0	84	
4:15 PM	9	0	7	0	0	0	0	0	0	33	18	0	4	25	0	0	96	
4:20 PM	16	0	4	0	0	0	0	0	0	27	20	0	3	17	0	0	87	
4:25 PM	11	0	3	1	0	0	0	0	0	21	16	0	5	16	0	0	73	
4:30 PM	9	0	2	0	0	0	0	0	0	30	19	0	7	14	0	0	81	
4:35 PM	12	0	2	0	0	0	0	0	0	30	23	0	9	21	0	0	97	
4:40 PM	14	0	5	0	0	0	0	0	0	24	24	0	3	13	0	0	83	
4:45 PM	11	0	9	0	0	0	0	0	0	30	27	0	5	13	0	0	95	
4:50 PM	10	0	8	0	0	0	0	0	0	27	19	0	1	16	0	0	81	
4:55 PM	20	0	3	0	0	0	0	0	0	31	22	0	3	14	0	0	93	1021
5:00 PM	14	0	3	0	0	0	0	0	0	27	14	0	2	9	0	0	69	1015
5:05 PM	11	0	8	0	0	0	0	0	0	27	22	0	2	14	0	0	84	1023
5:10 PM	14	0	8	0	0	0	0	0	0	25	33	0	6	19	0	0	105	1044
5:15 PM	20	0	3	0	0	0	0	0	0	23	27	0	9	13	0	0	95	1043
5:20 PM	10	0	5	0	0	0	0	0	0	22	31	0	7	14	0	0	89	1045
5:25 PM	9	0	2	0	0	0	0	0	0	32	25	0	5	9	0	0	82	1054
5:30 PM	11	0	2	0	0	0	0	0	0	25	18	0	2	13	0	0	71	1044
5:35 PM	18	0	4	0	0	0	0	0	0	20	25	0	3	10	0	0	80	1027
5:40 PM	10	0	5	0	0	0	0	0	0	24	23	0	8	22	0	0	92	1036
5:45 PM	13	0	4	0	0	0	0	0	0	21	20	0	5	7	0	0	70	1011
5:50 PM	15	0	2	0	0	0	0	0	0	34	8	0	6	10	0	0	75	1005
5:55 PM	7	0	7	0	0	0	0	0	0	19	14	0	9	11	0	0	67	979

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	176	0	64	0	0	0	0	0	0	280	364	0	88	184	0	0	1156
Heavy Trucks	8	0	4		0	0	0		0	0	8		12	4	0		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	1	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of peak hour being reported: Intersection Peak

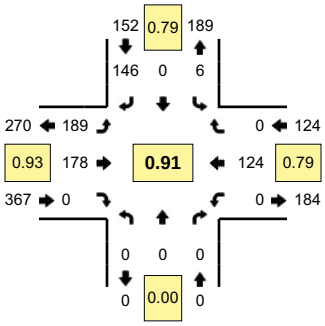
Method for determining peak hour: Total Entering Volume

LOCATION: SW French Prairie Dr -- Miley Rd

QC JOB #: 10622804

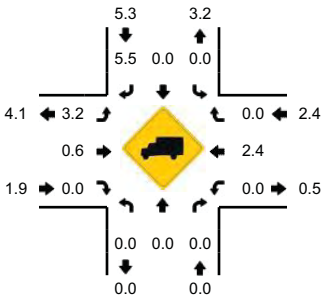
CITY/STATE: Wilsonville, OR

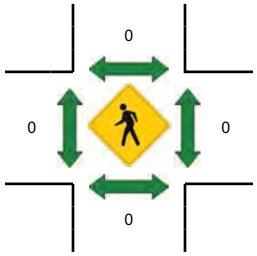
DATE: 5/24/2011

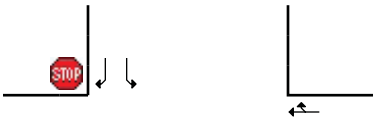


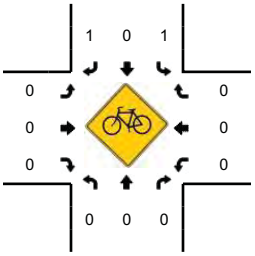
Peak-Hour: 4:00 PM -- 5:00 PM

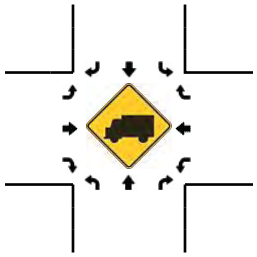
Peak 15-Min: 4:10 PM -- 4:25 PM

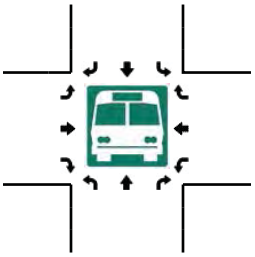












5-Min Count Period Beginning At	SW French Prairie Dr (Northbound)				SW French Prairie Dr (Southbound)				Miley Rd (Eastbound)				Miley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	17	0	17	14	0	0	0	7	0	0	55	
4:05 PM	0	0	0	0	2	0	9	0	13	10	0	0	0	9	0	0	43	
4:10 PM	0	0	0	0	0	0	16	0	6	14	0	0	0	19	0	0	55	
4:15 PM	0	0	0	0	0	0	17	0	22	17	0	0	0	11	0	0	67	
4:20 PM	0	0	0	0	0	0	15	0	18	12	0	0	0	9	0	0	54	
4:25 PM	0	0	0	0	2	0	9	0	17	9	0	0	0	10	0	0	47	
4:30 PM	0	0	0	0	0	0	11	0	11	20	0	0	0	11	0	0	53	
4:35 PM	0	0	0	0	1	0	16	0	18	14	0	0	0	18	0	0	67	
4:40 PM	0	0	0	0	0	0	7	0	14	16	0	0	0	8	0	0	45	
4:45 PM	0	0	0	0	0	0	10	0	18	19	0	0	0	8	0	0	55	
4:50 PM	0	0	0	0	1	0	11	0	20	13	0	0	0	6	0	0	51	
4:55 PM	0	0	0	0	0	0	8	0	15	20	0	0	0	8	0	0	51	643
5:00 PM	0	0	0	0	0	0	8	0	13	15	0	0	0	6	0	0	42	630
5:05 PM	0	0	0	0	0	0	9	0	20	14	0	0	0	6	0	0	49	636
5:10 PM	0	0	0	0	0	0	13	0	23	12	0	0	0	11	0	0	59	640
5:15 PM	0	0	0	0	0	0	14	0	13	12	0	0	0	6	0	0	45	618
5:20 PM	0	0	0	0	2	0	15	0	19	9	0	0	0	6	0	0	51	615
5:25 PM	0	0	0	0	0	0	6	0	21	14	0	0	0	10	0	0	51	619
5:30 PM	0	0	0	0	0	0	7	0	15	13	0	0	0	7	0	0	42	608
5:35 PM	0	0	0	0	0	0	8	0	14	10	0	0	0	7	0	0	39	580
5:40 PM	0	0	0	0	1	0	14	0	14	13	0	0	0	16	0	0	58	593
5:45 PM	0	0	0	0	0	0	6	0	14	12	0	0	0	5	0	0	37	575
5:50 PM	0	0	0	0	1	0	10	0	18	17	0	0	0	7	0	0	53	577
5:55 PM	0	0	0	0	0	0	11	0	14	11	0	0	0	9	0	0	45	571

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	192	0	184	172	0	0	0	156	0	0	704
Heavy Trucks	0	0	0		0	0	8		8	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/31/2011 3:41 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Level of Service Descriptions

TRAFFIC LEVELS OF SERVICE

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of *level of service* has been developed to subjectively describe traffic performance. Level of service can be measured at intersections and along key roadway segments.

Level of service categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Level of service D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The *Highway Capacity Manual* provides level of service calculation methodology for both intersections and arterials.[1] The following two sections provide interpretations of the analysis approaches.

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2000, Chapters 16 and 17.

UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The *2000 Highway Capacity Manual* describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

Unsignalized intersection levels of service are described in the following table.

Level of Service	Expected Delay	(Sec/Veh)
A	Little or no delay	0-10.0
B	Short traffic delay	>10.1-15.0
C	Average traffic delays	>15.1-25.0
D	Long traffic delays	>25.1-35.0
E	Very long traffic delays	>35.1-50.0
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50

Source: 2000 *Highway Capacity Manual*, Transportation Research Board Washington, D.C.

SIGNALIZED INTERSECTIONS

For signalized intersections, level of service is evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In previous versions of this chapter of the HCM (1994 and earlier), delay included only stopped delay. As delay increases, the level of service decreases. Calculations for signalized and unsignalized intersections are different due to the variation in traffic control. The *2000 Highway Capacity Manual* provides the basis for these calculations.

Level of Service	Delay (secs.)	Description
A	≤10.00	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Most vehicles do not stop at all. Progression is extremely favorable and most vehicles arrive during the green phase.
B	10.1-20.0	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. This level generally occurs with good progression, short cycle lengths, or both.
C	20.1-35.0	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted. Higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, and the number of vehicles stopping is significant.
D	35.1-55.0	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Drivers may have to wait through more than one red signal indication. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. The proportion of vehicles not stopping declines, and individual cycle failures are noticeable.
E	55.1-80.0	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait though several signal cycles. Long queues form upstream from intersection. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
F	≥80.0	**Forced Flow/Excessive Delays:** Represents jammed conditions. Queues may block upstream intersections. This level occurs when arrival flow rates exceed intersection capacity, and is considered to be unacceptable to most drivers. Poor progression, long cycle lengths, and v/c ratios approaching 1.0 may contribute to these high delay levels.

Source: *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C.

HCM Intersection Operations

Table A: Existing Operating Conditions at Study Intersections (P.M. Peak Hour)

Intersection[a]	Jurisdiction	Mobility Standard	Intersection Performance[b]	
			LOS	*V/C*
Signalized				
(2) Grahams Ferry Rd/Day Rd	City of Wilsonville	LOS D	B	0.54
(4) Boones Ferry Rd/Day Rd	Washington Co.	≤ 0.99	C	0.71
(5) Boones Ferry Rd/95th Ave	Washington Co.	≤ 0.99	D	0.74
(6) Elligsen Rd/I-5 SB Ramps	ODOT	≤ 0.85	B	0.45
(7) Elligsen Rd/I-5 NB Ramps	ODOT	≤ 0.85	A	0.56
(8) Elligsen Rd/Parkway Ave	City of Wilsonville	LOS D	C	0.58
(9) Elligsen Rd/Parkway Center Drive	City of Wilsonville	LOS D	C	0.55
(10) Elligsen Rd/Canyon Cr Rd	City of Wilsonville	LOS D	A	0.45
(14) Boeckman Rd/95th Ave	City of Wilsonville	LOS D	A	0.41
(17) Boeckman Rd/Parkway Ave	City of Wilsonville	LOS D	C	0.77
(20) Kinsman Rd/Barber St	City of Wilsonville	LOS D	A	0.24
(22) Town Center Lp/Parkway Ave	City of Wilsonville	LOS D	B	0.37
(24) Wilsonville Rd/Brown Rd	City of Wilsonville	LOS D	B	0.57
(25) Wilsonville Rd/Kinsman Rd	City of Wilsonville	LOS D	B	0.68
(26) Wilsonville Rd/Boones Ferry Rd[c]	City of Wilsonville	LOS D	C	0.55[c]
(27) Wilsonville Rd/I-5 SB Ramps[c]	ODOT	≤ 0.85	C	0.59[c]
(28) Wilsonville Rd/I-5 NB Ramps[c]	ODOT	≤ 0.85	C	0.49[c]
(29) Wilsonville Rd/Town Center Lp W[c]	City of Wilsonville	LOS D	D	0.81[c]
(30) Wilsonville Rd/Rebekah St	City of Wilsonville	LOS D	B	0.35
(31) Wilsonville Rd/Town Center Lp E	City of Wilsonville	LOS D	B	0.43
All-Way Stop Controlled				
(15) Boeckman Rd/Boberg Rd	City of Wilsonville	LOS D	B	0.52
(18) Boeckman Rd/Canyon Cr Rd	City of Wilsonville	LOS D	B	0.49
(19) Boeckman Rd/Stafford Rd	City of Wilsonville	LOS D	C	0.67
Two-Way Stop Controlled				
(1) Grahams Ferry Rd/Tonquin Rd	Washington Co.	≤ 0.99	A/D	0.70
(3) Grahams Ferry Rd/Clutter Rd	City of Wilsonville	LOS D	A/B	0.31
(11) Stafford Rd/65th Ave	Clackamas Co.	LOS D	**A/F**	1.25
(12) Grahams Ferry Rd/Tooze Rd	City of Wilsonville	LOS D	A/C	0.33
(13) Boeckman Rd/110th Ave	City of Wilsonville	LOS D	A/B	0.20
(16) Boeckman Rd/Boones Ferry Rd Access Lp	City of Wilsonville	LOS D	A/C	0.31
(21) Boones Ferry Rd/Barber St	City of Wilsonville	LOS D	A/C	0.35
(23) Town Center Lp/Vlahos Dr	City of Wilsonville	LOS D	A/C	0.30
(32) Miley Rd/I-5 SB Ramps	ODOT	≤ 0.85	A/D	**0.86**
(33) Miley Rd/I-5 NB Ramps	ODOT	≤ 0.85	A/C	0.36
(34) Miley Rd/NE Airport Rd	Clackamas Co.	LOS D	**A/E**	0.70
(35) Miley Rd/ French Prairie Dr W	Clackamas Co.	LOS D	A/B	0.18

Signalized and All-Way Stop intersections:
Delay = Average Stopped Delay per Vehicle (seconds) for Intersection
LOS = Level of Service of Intersection
V/C = Volume-to-Capacity Ratio of Intersection

Two-Way Stop Controlled intersections:
Delay = Average Stopped Delay per Vehicle (seconds) for Worst Approach
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement

[a] Numbers correspond to volumes figure.
[b] **Bold shaded** values do not meet standards.
[c] Improvements are currently being constructed at the I-5/Wilsonville Road Interchange. The analysis assumes pre-construction traffic volumes and post-construction lane geometries and traffic control.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	30	280	460	140	135	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	311	511	156	150	72
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1365	187	223			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1365	187	223			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	67	63	61			
cM capacity (veh/h)	101	837	1321			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	344	667	222
Volume Left	33	511	0
Volume Right	311	0	72
cSH	490	1321	1700
Volume to Capacity	0.70	0.39	0.13
Queue Length 95th (ft)	137	46	0
Control Delay (s)	28.0	8.2	0.0
Lane LOS	D	A	
Approach Delay (s)	28.0	8.2	0.0
Approach LOS	D		

Intersection Summary			
Average Delay		12.2	
Intersection Capacity Utilization		73.0%	ICU Level of Service C
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	55	5	50	10	400	5	195	50	315	110	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			0.99	1.00	1.00	1.00		1.00	1.00	
Frt		0.99			1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected		0.99			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1862			1624	1509	1805	1738		1719	1696	
Flt Permitted		0.94			0.91	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1758			1538	1509	1805	1738		1719	1696	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	11	62	6	56	11	449	6	219	56	354	124	0
RTOR Reduction (vph)	0	5	0	0	0	225	0	14	0	0	0	0
Lane Group Flow (vph)	0	74	0	0	67	224	6	261	0	354	124	0
Confl. Peds. (#/hr)			6	6								
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	13%	0%	7%	0%	6%	6%	5%	12%	0%
Turn Type	Perm			Perm		pm+ov	Prot			Prot		
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		4.6			4.6	18.6	0.9	15.6		14.0	28.7	
Effective Green, g (s)		4.6			4.6	18.6	0.9	15.6		14.0	28.7	
Actuated g/C Ratio		0.10			0.10	0.40	0.02	0.34		0.30	0.62	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		175			153	738	35	587		521	1054	
v/s Ratio Prot						0.09	0.00	c0.15		c0.21	0.07	
v/s Ratio Perm		0.04			c0.04	0.06						
v/c Ratio		0.42			0.44	0.30	0.17	0.44		0.68	0.12	
Uniform Delay, d1		19.5			19.6	9.4	22.3	11.9		14.1	3.6	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.6			2.0	0.2	2.3	0.5		3.5	0.1	
Delay (s)		21.2			21.6	9.6	24.6	12.5		17.6	3.6	
Level of Service		C			C	A	C	B		B	A	
Approach Delay (s)		21.2			11.2			12.7			14.0	
Approach LOS		C			B			B			B	

Intersection Summary					
HCM Average Control Delay	13.1	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.54				
Actuated Cycle Length (s)	46.2	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	52.4%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	70	145	80	25	50	115
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	80	167	92	29	57	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	353	106			121	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353	106			121	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	87	82			96	
cM capacity (veh/h)	614	916			1407	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	247	121	190
Volume Left	80	0	57
Volume Right	167	29	0
cSH	790	1700	1407
Volume to Capacity	0.31	0.07	0.04
Queue Length 95th (ft)	33	0	3
Control Delay (s)	11.6	0.0	2.6
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	2.6
Approach LOS	B		

Intersection Summary			
Average Delay		6.0	
Intersection Capacity Utilization		34.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	0	400	0	0	0	445	395	5	0	485	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0				4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			1.00	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			1.00	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1612	1538				1597	3499			1831	
Flt Permitted		0.76	1.00				0.95	1.00			1.00	
Satd. Flow (perm)		1285	1538				1597	3499			1831	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	22	0	440	0	0	0	489	434	5	0	533	16
RTOR Reduction (vph)	0	0	60	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	22	380	0	0	0	489	439	0	0	548	0
Confl. Bikes (#/hr)									1			4
Heavy Vehicles (%)	12%	0%	5%	0%	0%	0%	13%	3%	0%	0%	3%	12%
Turn Type	Perm		pt+ov	Perm			Prot			Prot		
Protected Phases		8	8 1		4		1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		7.6	50.6				39.0	88.4			45.4	
Effective Green, g (s)		7.6	50.6				39.0	89.4			46.4	
Actuated g/C Ratio		0.07	0.48				0.37	0.85			0.44	
Clearance Time (s)		4.0					4.0	5.0			5.0	
Vehicle Extension (s)		3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)		93	741				593	2979			809	
v/s Ratio Prot			c0.25				c0.31	0.13			c0.30	
v/s Ratio Perm		0.02										
v/c Ratio		0.24	0.51				0.82	0.15			0.68	
Uniform Delay, d1		46.0	18.7				29.9	1.3			23.3	
Progression Factor		1.00	1.00				1.03	0.90			1.00	
Incremental Delay, d2		1.3	0.6				11.7	0.1			4.5	
Delay (s)		47.3	19.3				42.6	1.3			27.9	
Level of Service		D	B				D	A			C	
Approach Delay (s)		20.6			0.0			23.0			27.9	
Approach LOS		C			A			C			C	

Intersection Summary					
HCM Average Control Delay		23.8	HCM Level of Service		C
HCM Volume to Capacity ratio		0.71			
Actuated Cycle Length (s)		105.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization		64.4%	ICU Level of Service		C
Analysis Period (min)		15			
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	5	625	55	10	5	270	695	15	0	780	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.85			0.99		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.96		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1719	1650			1810		1400	3000			3200	1464
Flt Permitted	0.74	1.00			0.20		0.95	1.00			1.00	1.00
Satd. Flow (perm)	1330	1650			373		1400	3000			3200	1464
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	5	658	58	11	5	284	732	16	0	821	111
RTOR Reduction (vph)	0	414	0	0	2	0	0	1	0	0	0	44
Lane Group Flow (vph)	158	249	0	0	72	0	284	747	0	0	821	67
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)						3						1
Heavy Vehicles (%)	5%	13%	7%	0%	0%	0%	20%	8%	0%	0%	3%	8%
Turn Type	Perm			Perm			Prot			Prot		Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)	18.0	18.0			18.0		37.0	79.0			38.0	38.0
Effective Green, g (s)	18.0	18.0			18.0		37.0	79.0			38.0	38.0
Actuated g/C Ratio	0.17	0.17			0.17		0.35	0.75			0.36	0.36
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	228	283			64		493	2257			1158	530
v/s Ratio Prot		0.15					c0.20	0.25			c0.26	
v/s Ratio Perm	0.12				c0.19							0.05
v/c Ratio	0.69	0.88			1.12		0.58	0.33			0.71	0.13
Uniform Delay, d1	40.9	42.4			43.5		27.6	4.3			28.8	22.4
Progression Factor	1.00	1.00			1.00		0.75	0.61			0.87	0.80
Incremental Delay, d2	8.8	25.0			148.2		4.6	0.4			1.7	0.1
Delay (s)	49.7	67.5			191.7		25.4	3.0			26.7	17.9
Level of Service	D	E			F		C	A			C	B
Approach Delay (s)		64.1			191.7			9.2			25.7	
Approach LOS		E			F			A			C	

Intersection Summary				
HCM Average Control Delay	35.0	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	92.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	945	515	0	665	325	0	0	0	420	0	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00				1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3471	1534		3312	1615				1649	1649	1369
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3471	1534		3312	1615				1649	1649	1369
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	974	531	0	686	335	0	0	0	433	0	325
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	153
Lane Group Flow (vph)	0	974	531	0	686	335	0	0	0	216	217	172
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	4%	4%	0%	9%	0%	0%	0%	0%	4%	0%	18%
Turn Type			Free			Free				Split		Prot
Protected Phases		2			6					4	4	4
Permitted Phases			Free			Free						
Actuated Green, G (s)		75.8	105.0		75.8	105.0				20.2	20.2	20.2
Effective Green, g (s)		76.8	105.0		76.8	105.0				20.2	20.2	20.2
Actuated g/C Ratio		0.73	1.00		0.73	1.00				0.19	0.19	0.19
Clearance Time (s)		5.0			5.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2539	1534		2422	1615				317	317	263
v/s Ratio Prot		c0.28			0.21					0.13	c0.13	0.13
v/s Ratio Perm			0.35			0.21						
v/c Ratio		0.38	0.35		0.28	0.21				0.68	0.68	0.65
Uniform Delay, d1		5.3	0.0		4.8	0.0				39.4	39.4	39.2
Progression Factor		0.77	1.00		0.85	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.2	0.3		0.3	0.3				5.9	6.0	5.7
Delay (s)		4.3	0.3		4.3	0.3				45.3	45.4	44.9
Level of Service		A	A		A	A				D	D	D
Approach Delay (s)		2.9			3.0			0.0			45.2	
Approach LOS		A			A			A			D	

Intersection Summary				
HCM Average Control Delay	12.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	44.6%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
7: Sw Elligsen Rd & I-5 NB Ramp

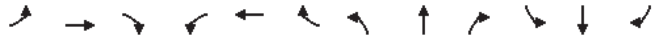
Wilsonville TSP
2011 Existing (PM Peak)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	685	680	0	740	800	250	0	300	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0		5.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		1.00			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00		1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3505	1551		3574	1566	3072		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3505	1551		3574	1566	3072		1583			
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	753	747	0	813	879	275	0	330	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	167	0	0	0
Lane Group Flow (vph)	0	753	747	0	813	879	275	0	163	0	0	0
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	3%	2%	0%	1%	1%	14%	0%	2%	0%	0%	0%
Turn Type			Free			Free	custom		custom			
Protected Phases		2			6		8					
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		78.9	105.0		78.9	105.0	17.1		17.1			
Effective Green, g (s)		78.9	105.0		78.9	105.0	17.1		17.1			
Actuated g/C Ratio		0.75	1.00		0.75	1.00	0.16		0.16			
Clearance Time (s)		5.0			5.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2634	1551		2686	1566	500		258			
v/s Ratio Prot		0.21			0.23		0.09					
v/s Ratio Perm			0.48			c0.56			0.10			
v/c Ratio		0.29	0.48		0.30	0.56	0.55		0.63			
Uniform Delay, d1		4.1	0.0		4.2	0.0	40.4		41.0			
Progression Factor		1.37	1.00		1.35	1.00	1.00		1.00			
Incremental Delay, d2		0.3	1.0		0.2	1.2	1.3		4.9			
Delay (s)		5.9	1.0		5.9	1.2	41.7		45.9			
Level of Service		A	A		A	A	D		D			
Approach Delay (s)		3.5			3.5			44.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM Average Control Delay	10.0	HCM Level of Service		A
HCM Volume to Capacity ratio	0.56			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)		0.0
Intersection Capacity Utilization	45.0%	ICU Level of Service		A
Analysis Period (min)	15			
c Critical Lane Group				

HCM Signalized Intersection Capacity Analysis
8: Elligsen Road & Parkway Ave

Wilsonville TSP
2011 Existing (PM Peak)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	90	445	450	55	800	50	535	25	35	70	25	205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	4.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3406	1583	1770	4938		1665	1675	1524	1671	1520	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3406	1583	1770	4938		1665	1675	1524	1671	1520	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	484	489	60	870	54	582	27	38	76	27	223
RTOR Reduction (vph)	0	0	144	0	6	0	0	0	28	0	184	0
Lane Group Flow (vph)	98	484	345	60	918	0	303	306	10	76	66	0
Confl. Peds. (#/hr)			6	6					1	1		
Heavy Vehicles (%)	5%	6%	2%	2%	4%	6%	3%	4%	6%	8%	2%	9%
Turn Type	Prot		pt+ov	Prot			Split		Prot	Split		
Protected Phases	5	2	2 8	1	6		8	8	8	4	4	
Permitted Phases												
Actuated Green, G (s)	8.4	42.8	74.1	7.4	41.8		26.3	26.3	26.3	9.0	9.0	
Effective Green, g (s)	8.4	42.8	74.1	7.4	41.8		26.3	26.3	26.3	9.0	9.0	
Actuated g/C Ratio	0.08	0.41	0.71	0.07	0.40		0.25	0.25	0.25	0.09	0.09	
Clearance Time (s)	4.5	5.0		4.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	138	1388	1117	125	1966		417	420	382	143	130	
v/s Ratio Prot	c0.06	0.14	0.22	0.03	c0.19		0.18	c0.18	0.01	c0.05	0.04	
v/s Ratio Perm												
v/c Ratio	0.71	0.35	0.31	0.48	0.47		0.73	0.73	0.02	0.53	0.51	
Uniform Delay, d1	47.1	21.5	5.8	46.9	23.4		36.1	36.1	29.7	46.0	45.9	
Progression Factor	1.12	0.68	4.20	1.29	0.55		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.1	0.7	0.2	2.7	0.8		6.2	6.2	0.0	3.8	3.1	
Delay (s)	68.1	15.2	24.6	63.3	13.5		42.3	42.3	29.7	49.7	49.0	
Level of Service	E	B	C	E	B		D	D	C	D	D	
Approach Delay (s)		24.3			16.5			41.5			49.2	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM Average Control Delay	28.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)		19.5
Intersection Capacity Utilization	69.2%	ICU Level of Service		C
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	370	135	30	375	5	510	5	65	5	5	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5	5.5	5.0	5.5		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95		0.97	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99	0.85	1.00	1.00		1.00	0.86			0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (prot)	1703	1756	1421	1805	3531		3433	1636			1703	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.99	
Satd. Flow (perm)	1703	1756	1421	1805	3531		3433	1636			1703	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	17	420	153	34	426	6	580	6	74	6	6	11
RTOR Reduction (vph)	0	1	31	0	0	0	0	57	0	0	11	0
Lane Group Flow (vph)	17	434	107	34	432	0	580	23	0	0	12	0
Confl. Peds. (#/hr)	2		2	2		2	5					5
Heavy Vehicles (%)	6%	2%	8%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Turn Type	Prot		pt+ov	Prot			Split			Split		
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	3.1	51.9	81.6	5.3	54.1		24.2	24.2			3.1	
Effective Green, g (s)	3.1	51.9	81.6	5.3	54.1		24.2	24.2			3.1	
Actuated g/C Ratio	0.03	0.49	0.78	0.05	0.52		0.23	0.23			0.03	
Clearance Time (s)	5.0	5.5		5.0	5.5		5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	50	868	1104	91	1819		791	377			50	
v/s Ratio Prot	0.01	c0.25	0.08	c0.02	0.12		c0.17	0.01			c0.01	
v/s Ratio Perm												
v/c Ratio	0.34	0.50	0.10	0.37	0.24		0.73	0.06			0.25	
Uniform Delay, d1	49.9	17.8	2.8	48.2	14.1		37.4	31.5			49.8	
Progression Factor	0.85	0.97	6.19	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.8	2.0	0.0	2.6	0.3		3.5	0.1			2.6	
Delay (s)	46.5	19.3	17.5	50.8	14.4		40.9	31.6			52.4	
Level of Service	D	B	B	D	B		D	C			D	
Approach Delay (s)		19.7			17.0			39.8			52.4	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM Average Control Delay	27.0	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	54.9%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	250	160	40	200	200	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.95		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1757		1718	1792	1805	1615
Flt Permitted	1.00		0.46	1.00	0.95	1.00
Satd. Flow (perm)	1757		826	1792	1805	1615
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	281	180	45	225	225	112
RTOR Reduction (vph)	32	0	0	0	0	87
Lane Group Flow (vph)	429	0	45	225	225	25
Confl. Peds. (#/hr)		1	1			
Heavy Vehicles (%)	2%	1%	5%	6%	0%	0%
Turn Type			Perm			custom
Protected Phases	2			6		
Permitted Phases			6		4	4
Actuated Green, G (s)	31.6		31.6	31.6	11.6	11.6
Effective Green, g (s)	31.6		31.6	31.6	11.6	11.6
Actuated g/C Ratio	0.61		0.61	0.61	0.22	0.22
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1064		500	1085	401	359
v/s Ratio Prot	c0.24			0.13		
v/s Ratio Perm			0.05		c0.12	0.02
v/c Ratio	0.40		0.09	0.21	0.56	0.07
Uniform Delay, d1	5.4		4.3	4.6	18.0	16.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1		0.4	0.4	1.8	0.1
Delay (s)	6.5		4.7	5.1	19.8	16.1
Level of Service	A		A	A	B	B
Approach Delay (s)	6.5			5.0	18.6	
Approach LOS	A			A	B	

Intersection Summary				
HCM Average Control Delay	9.9	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.45			
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	51.8%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	240	175	135	350	180	115
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	261	190	147	380	196	125
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	932	259	321			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	932	259	321			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	0	75	88			
cM capacity (veh/h)	261	769	1223			

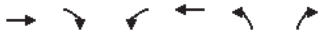
Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	451	147	380	321
Volume Left	261	147	0	0
Volume Right	190	0	0	125
cSH	362	1223	1700	1700
Volume to Capacity	1.25	0.12	0.22	0.19
Queue Length 95th (ft)	492	10	0	0
Control Delay (s)	163.0	8.3	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	163.0	2.3		0.0
Approach LOS	F			

Intersection Summary			
Average Delay	57.5		
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	70	5	60	175	45	5	25	25	35	65	30
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	18	84	6	72	211	54	6	30	30	42	78	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	265			90			581	533	87	551	509	238
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	265			90			581	533	87	551	509	238
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.4
p0 queue free %	99			95			98	93	97	89	82	95
cM capacity (veh/h)	1311			1517			336	417	977	387	439	791

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	108	337	66	157
Volume Left	18	72	6	42
Volume Right	6	54	30	36
cSH	1311	1517	548	470
Volume to Capacity	0.01	0.05	0.12	0.33
Queue Length 95th (ft)	1	4	10	36
Control Delay (s)	1.4	1.9	12.5	16.4
Lane LOS	A	A	B	C
Approach Delay (s)	1.4	1.9	12.5	16.4
Approach LOS			B	C

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	80	50	95	225	55	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	93	58	110	262	64	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			151		605	122
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		605	122
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		85	95
cM capacity (veh/h)			1424		422	921

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	151	110	262	110
Volume Left	0	110	0	64
Volume Right	58	0	0	47
cSH	1700	1424	1700	547
Volume to Capacity	0.09	0.08	0.15	0.20
Queue Length 95th (ft)	0	6	0	19
Control Delay (s)	0.0	7.7	0.0	13.2
Lane LOS		A		B
Approach Delay (s)	0.0	2.3		13.2
Approach LOS				B

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	110	5	5	160	140	5	5	5	200	5	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1868		1805	1863	1445	1802	1732		1752	1589	
Flt Permitted	0.62	1.00		0.67	1.00	1.00	0.64	1.00		0.75	1.00	
Satd. Flow (perm)	1139	1868		1274	1863	1445	1212	1732		1383	1589	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	29	129	6	6	188	165	6	6	6	235	6	182
RTOR Reduction (vph)	0	3	0	0	0	129	0	3	0	0	105	0
Lane Group Flow (vph)	29	132	0	6	188	36	6	9	0	235	83	0
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)			2			3						
Heavy Vehicles (%)	4%	1%	0%	0%	2%	9%	0%	3%	0%	3%	0%	0%
Turn Type	pm+pt			pm+pt		Perm	Perm			Perm		
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	9.0	8.1		8.6	7.9	7.9	15.2	15.2		15.2	15.2	
Effective Green, g (s)	9.0	8.1		8.6	7.9	7.9	15.2	15.2		15.2	15.2	
Actuated g/C Ratio	0.25	0.22		0.24	0.22	0.22	0.42	0.42		0.42	0.42	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	300	420		315	409	317	512	731		584	671	
v/s Ratio Prot	c0.00	0.07		0.00	c0.10			0.00			0.05	
v/s Ratio Perm	0.02			0.00		0.03	0.00			c0.17		
v/c Ratio	0.10	0.31		0.02	0.46	0.11	0.01	0.01		0.40	0.12	
Uniform Delay, d1	10.3	11.6		10.5	12.2	11.2	6.0	6.0		7.2	6.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.4		0.0	0.8	0.2	0.0	0.0		0.5	0.1	
Delay (s)	10.4	12.1		10.5	13.0	11.4	6.0	6.0		7.7	6.4	
Level of Service	B	B		B	B	B	A	A		A	A	
Approach Delay (s)		11.8			12.2			6.0			7.1	
Approach LOS		B			B			A			A	

Intersection Summary					
HCM Average Control Delay	9.8	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.41				
Actuated Cycle Length (s)	36.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	39.5%	ICU Level of Service		A	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	10	215	90	90	235	20	55	5	80	30	15	15
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	13	272	114	114	297	25	70	6	101	38	19	19

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	285	114	114	323	177	76
Volume Left (vph)	13	0	114	0	70	38
Volume Right (vph)	0	114	0	25	101	19
Hadj (s)	0.09	-0.53	0.57	0.01	-0.18	-0.05
Departure Headway (s)	6.0	5.4	6.4	5.8	5.9	6.3
Degree Utilization, x	0.47	0.17	0.20	0.52	0.29	0.13
Capacity (veh/h)	574	641	539	596	551	500
Control Delay (s)	13.1	8.2	9.8	13.9	11.3	10.2
Approach Delay (s)	11.7		12.8		11.3	10.2
Approach LOS	B		B		B	B

Intersection Summary				
Delay	12.0			
HCM Level of Service	B			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	25	300	325	120	75	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	29	345	374	138	86	23
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			1268			
pX, platoon unblocked						
vC, conflicting volume	512				846	444
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	512				846	444
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	97				73	96
cM capacity (veh/h)	957				321	610

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	374	511	109
Volume Left	29	0	86
Volume Right	0	138	23
cSH	957	1700	357
Volume to Capacity	0.03	0.30	0.31
Queue Length 95th (ft)	2	0	32
Control Delay (s)	1.0	0.0	19.5
Lane LOS	A		C
Approach Delay (s)	1.0	0.0	19.5
Approach LOS			C

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	185	115	145	210	25	65	185	150	25	250	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.93		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1773		1770	1832		1703	1755		1805	1752	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1773		1770	1832		1703	1755		1805	1752	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	201	125	158	228	27	71	201	163	27	272	185
RTOR Reduction (vph)	0	35	0	0	6	0	0	41	0	0	36	0
Lane Group Flow (vph)	82	291	0	158	249	0	71	323	0	27	421	0
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)						6			2			1
Heavy Vehicles (%)	5%	1%	1%	2%	2%	0%	6%	0%	0%	0%	0%	2%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	4.2	15.2		8.0	19.0		4.2	19.8		2.7	18.3	
Effective Green, g (s)	4.2	15.2		8.0	19.0		4.2	19.8		2.7	18.3	
Actuated g/C Ratio	0.07	0.25		0.13	0.31		0.07	0.32		0.04	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	117	437		229	564		116	563		79	520	
v/s Ratio Prot	0.05	c0.16		c0.09	c0.14		c0.04	0.18		0.01	c0.24	
v/s Ratio Perm												
v/c Ratio	0.70	0.67		0.69	0.44		0.61	0.57		0.34	0.81	
Uniform Delay, d1	28.1	21.0		25.7	17.1		28.0	17.4		28.6	20.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.3	3.8		8.4	0.6		9.2	4.2		2.6	12.8	
Delay (s)	45.4	24.8		34.0	17.7		37.2	21.6		31.2	32.9	
Level of Service	D	C		C	B		D	C		C	C	
Approach Delay (s)		28.9			23.9			24.2			32.8	
Approach LOS		C			C			C			C	

Intersection Summary				
HCM Average Control Delay	27.6	HCM Level of Service		C
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	61.7	Sum of lost time (s)		20.0
Intersection Capacity Utilization	65.3%	ICU Level of Service		C
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	115	210	20	10	175	50	10	10	10	165	15	95
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	140	256	24	12	213	61	12	12	12	201	18	116

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	140	280	287	12	24	201	134
Volume Left (vph)	140	0	12	12	0	201	0
Volume Right (vph)	0	24	61	0	12	0	116
Hadj (s)	0.50	-0.06	-0.08	0.50	-0.06	0.52	-0.59
Departure Headway (s)	6.6	6.0	6.1	7.7	7.1	7.0	5.9
Degree Utilization, x	0.26	0.47	0.49	0.03	0.05	0.39	0.22
Capacity (veh/h)	524	578	568	410	449	484	572
Control Delay (s)	10.6	13.0	14.7	9.7	9.2	13.4	9.4
Approach Delay (s)	12.2		14.7	9.4		11.8	
Approach LOS	B		B	A		B	

Intersection Summary			
Delay	12.6		
HCM Level of Service	B		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	245	40	85	40	35	20	60	195	30	20	260	95
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	255	42	89	42	36	21	62	203	31	21	271	99

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	385	99	63	234	391
Volume Left (vph)	255	42	63	0	21
Volume Right (vph)	89	21	0	31	99
Hadj (s)	-0.01	0.02	0.50	-0.08	-0.11
Departure Headway (s)	6.2	7.0	7.4	6.8	6.2
Degree Utilization, x	0.67	0.19	0.13	0.44	0.67
Capacity (veh/h)	542	419	452	484	549
Control Delay (s)	20.8	11.7	10.3	13.9	20.6
Approach Delay (s)	20.8	11.7	13.1		20.6
Approach LOS	C	B	B		C

Intersection Summary				
Delay	18.0			
HCM Level of Service	C			
Intersection Capacity Utilization	70.2%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	5	0	165	0	0	5	0	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0			4.0	4.0				
Lane Util. Factor		1.00		1.00			1.00	1.00				
Frpb, ped/bikes		1.00		1.00			1.00	0.98				
Flpb, ped/bikes		1.00		1.00			1.00	1.00				
Frt		1.00		1.00			1.00	0.85				
Flt Protected		1.00		0.95			0.95	1.00				
Satd. Flow (prot)		1900		1687			1805	1505				
Flt Permitted		1.00		0.95			0.95	1.00				
Satd. Flow (perm)		1900		1687			1805	1505				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	5	0	181	0	0	5	0	82	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	79	0	0	0	0
Lane Group Flow (vph)	0	5	0	181	0	0	5	3	0	0	0	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	0%	5%	0%	0%	0%
Turn Type	Prot			Prot			Prot			Prot		
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)		0.8		8.9			0.8	0.8				
Effective Green, g (s)		0.8		8.9			0.8	0.8				
Actuated g/C Ratio		0.04		0.40			0.04	0.04				
Clearance Time (s)		4.0		4.0			4.0	4.0				
Vehicle Extension (s)		3.0		3.0			3.0	3.0				
Lane Grp Cap (vph)		68		667			64	54				
v/s Ratio Prot		c0.00		c0.11			c0.00	0.00				
v/s Ratio Perm												
v/c Ratio		0.07		0.27			0.08	0.05				
Uniform Delay, d1		10.5		4.6			10.5	10.5				
Progression Factor		1.00		1.00			1.00	1.00				
Incremental Delay, d2		0.5		0.2			0.5	0.4				
Delay (s)		11.0		4.8			11.0	10.9				
Level of Service		B		A			B	B				
Approach Delay (s)		11.0			4.8			10.9			0.0	
Approach LOS		B			A			B			A	

Intersection Summary					
HCM Average Control Delay	6.9	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.24				
Actuated Cycle Length (s)	22.5	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	27.9%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	10	135	45	115	360	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	13	180	60	153	480	7
Pedestrians	6			1	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	765	490	493			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	765	490	493			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	96	68	94			
cM capacity (veh/h)	349	569	979			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	193	60	153	487
Volume Left	13	60	0	0
Volume Right	180	0	0	7
cSH	545	979	1700	1700
Volume to Capacity	0.35	0.06	0.09	0.29
Queue Length 95th (ft)	40	5	0	0
Control Delay (s)	15.2	8.9	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.2	2.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay		3.9	
Intersection Capacity Utilization		41.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	175	60	5	30	95	100	10	145	40	165	160	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1786	3409		1612	3230		1805	1778		1752	1863	1599
Flt Permitted	0.46	1.00		0.71	1.00		0.65	1.00		0.41	1.00	1.00
Satd. Flow (perm)	858	3409		1204	3230		1234	1778		750	1863	1599
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	186	64	5	32	101	106	11	154	43	176	170	176
RTOR Reduction (vph)	0	3	0	0	83	0	0	17	0	0	0	96
Lane Group Flow (vph)	186	66	0	32	124	0	11	180	0	176	170	80
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	2%	40%	12%	0%	4%	0%	2%	7%	3%	2%	1%
Turn Type	pm+pt			pm+pt			pm+pt			pm+pt		pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	23.5	17.2		13.3	11.0		11.1	10.1		19.7	14.7	23.2
Effective Green, g (s)	23.5	17.2		13.3	11.0		11.1	10.1		19.7	14.7	23.2
Actuated g/C Ratio	0.46	0.34		0.26	0.21		0.22	0.20		0.38	0.29	0.45
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	548	1145		331	694		279	351		398	535	849
v/s Ratio Prot	c0.06	0.02		0.00	0.04		0.00	0.10		c0.05	0.09	0.02
v/s Ratio Perm	c0.10			0.02			0.01			c0.12		0.03
v/c Ratio	0.34	0.06		0.10	0.18		0.04	0.51		0.44	0.32	0.09
Uniform Delay, d1	8.5	11.5		14.3	16.4		15.8	18.4		11.1	14.3	8.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.0		0.1	0.1		0.1	1.3		0.8	0.3	0.0
Delay (s)	8.9	11.5		14.4	16.5		15.9	19.6		11.9	14.7	8.0
Level of Service	A	B		B	B		B	B		B	B	A
Approach Delay (s)		9.6			16.3			19.4			11.5	
Approach LOS		A			B			B			B	

Intersection Summary					
HCM Average Control Delay	13.4	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.37				
Actuated Cycle Length (s)	51.2	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	48.5%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	65	95	95	50	105	15	90	5	55	10	5	45
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	77	113	113	60	125	18	107	6	65	12	6	54
Pedestrians		3			1			1			2	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		730										
pX, platoon unblocked												
vC, conflicting volume	145			227			566	589	115	536	637	76
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	145			227			566	589	115	536	637	76
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			96			70	98	93	97	98	94
cM capacity (veh/h)	1425			1352			353	382	920	366	359	972

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	77	75	151	60	83	60	107	71	71
Volume Left	77	0	0	60	0	0	107	0	12
Volume Right	0	0	113	0	0	18	0	65	54
cSH	1425	1700	1700	1352	1700	1700	353	824	685
Volume to Capacity	0.05	0.04	0.09	0.04	0.05	0.04	0.30	0.09	0.10
Queue Length 95th (ft)	4	0	0	3	0	0	31	7	9
Control Delay (s)	7.7	0.0	0.0	7.8	0.0	0.0	19.6	9.8	10.9
Lane LOS	A			A			C	A	B
Approach Delay (s)	2.0			2.3			15.6		10.9
Approach LOS							C		B

Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	400	5	25	630	235	5	5	20	175	5	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98		1.00	0.97		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.98	1.00		0.95	1.00
Satd. Flow (prot)	1805	1859		1803	1881	1560		1854	1569		1794	1615
Flt Permitted	0.26	1.00		0.42	1.00	1.00		0.98	1.00		0.95	1.00
Satd. Flow (perm)	500	1859		794	1881	1560		1854	1569		1794	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	421	5	26	663	247	5	5	21	184	5	32
RTOR Reduction (vph)	0	0	0	0	0	58	0	0	20	0	0	27
Lane Group Flow (vph)	21	426	0	26	663	189	0	10	1	0	189	5
Confl. Peds. (#/hr)	2		4	4		2			5	5		
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%
Turn Type	pm+pt			pm+pt		Perm	Split		Perm	Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6		6			8			4
Actuated Green, G (s)	34.2	33.3		36.2	34.3	34.3		1.9	1.9		10.5	10.5
Effective Green, g (s)	34.2	33.3		36.2	34.3	34.3		1.9	1.9		10.5	10.5
Actuated g/C Ratio	0.54	0.52		0.57	0.54	0.54		0.03	0.03		0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	287	973		482	1014	841		55	47		296	267
v/s Ratio Prot	0.00	0.23		c0.00	c0.35			c0.01			c0.11	
v/s Ratio Perm	0.04			0.03		0.12			0.00			0.00
v/c Ratio	0.07	0.44		0.05	0.65	0.23		0.18	0.01		0.64	0.02
Uniform Delay, d1	8.1	9.4		6.3	10.4	7.7		30.1	29.9		24.8	22.2
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.0	1.4		0.0	3.3	0.6		0.6	0.0		3.3	0.0
Delay (s)	8.1	10.8		6.3	13.7	8.3		30.7	30.0		28.1	22.3
Level of Service	A	B		A	B	A		C	C		C	C
Approach Delay (s)		10.7			12.1			30.2			27.2	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM Average Control Delay	14.1	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.57				
Actuated Cycle Length (s)	63.6	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	56.4%	ICU Level of Service		B	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	50	625	785	100	130	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1881	1881	1192	1641	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1881	1881	1192	1641	1599
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	55	687	863	110	143	148
RTOR Reduction (vph)	0	0	0	39	0	126
Lane Group Flow (vph)	55	687	863	71	143	22
Confl. Peds. (#/hr)	2			2		
Confl. Bikes (#/hr)				3		
Heavy Vehicles (%)	0%	1%	1%	32%	10%	1%
Turn Type	Prot			Perm		Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.8	61.6	52.8	52.8	12.2	12.2
Effective Green, g (s)	4.8	61.6	52.8	52.8	12.2	12.2
Actuated g/C Ratio	0.06	0.75	0.65	0.65	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	1416	1214	769	245	238
v/s Ratio Prot	0.03	c0.37	c0.46		c0.09	
v/s Ratio Perm				0.06		0.01
v/c Ratio	0.52	0.49	0.71	0.09	0.58	0.09
Uniform Delay, d1	37.4	3.9	9.5	5.5	32.4	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.2	1.2	3.5	0.2	3.5	0.2
Delay (s)	41.6	5.1	13.0	5.7	36.0	30.2
Level of Service	D	A	B	A	D	C
Approach Delay (s)		7.8	12.2		33.0	
Approach LOS		A	B		C	

Intersection Summary				
HCM Average Control Delay	13.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	56.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	760	20	185	755	140	75	50	195	495	95	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	1.00	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	5001		3467	3374	1385	1752	1900	1568	3400	1713	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	5001		3467	3374	1385	1752	1900	1568	3400	1713	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	68	800	21	195	795	147	79	53	205	521	100	89
RTOR Reduction (vph)	0	2	0	0	0	73	0	0	42	0	31	0
Lane Group Flow (vph)	68	819	0	195	795	74	79	53	163	521	158	0
Confl. Peds. (#/hr)	4		3	3		4	1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	14%	1%	7%	13%	3%	0%	3%	3%	0%	5%
Turn Type	Prot			Prot		Perm	Split		pm+ov	Split		
Protected Phases	1	6		5	2		4	4	5	8	8	
Permitted Phases		6				2			4			
Actuated Green, G (s)	8.1	51.7		11.1	54.7	54.7	8.6	8.6	19.7	21.6	21.6	
Effective Green, g (s)	8.1	52.7		11.1	55.7	55.7	8.6	8.6	19.7	21.6	21.6	
Actuated g/C Ratio	0.07	0.48		0.10	0.51	0.51	0.08	0.08	0.18	0.20	0.20	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.3		2.5	0.5	0.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	128	2396		350	1708	701	137	149	338	668	336	
v/s Ratio Prot	0.04	0.16		0.06	c0.24		c0.05	0.03	c0.05	c0.15	0.09	
v/s Ratio Perm						0.05			0.06			
v/c Ratio	0.53	0.34		0.56	0.47	0.11	0.58	0.36	0.48	0.78	0.47	
Uniform Delay, d1	49.1	17.8		47.1	17.5	14.2	48.9	48.1	40.6	41.9	39.1	
Progression Factor	1.00	1.00		1.09	0.54	0.39	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.3	0.4		1.5	0.9	0.3	4.7	1.1	0.8	5.5	0.8	
Delay (s)	52.4	18.2		52.7	10.4	5.8	53.7	49.1	41.4	47.5	39.9	
Level of Service	D	B		D	B	A	D	D	D	D	D	
Approach Delay (s)		20.8			17.0			45.5			45.5	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM Average Control Delay	27.8	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	835	615	575	650	0	0	0	0	415	5	430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	0.88
Frpb, ped/bikes		1.00	0.98	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4988	1549	3367	3406					1665	1672	2608
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4988	1549	3367	3406					1665	1672	2608
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	861	634	593	670	0	0	0	0	428	5	443
RTOR Reduction (vph)	0	0	302	0	0	0	0	0	0	0	0	259
Lane Group Flow (vph)	0	861	332	593	670	0	0	0	0	218	215	184
Confl. Peds. (#/hr)	3		4	4		3						
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	0%	4%	2%	4%	6%	0%	0%	0%	0%	3%	0%	9%
Turn Type			Perm	Prot						Split		custom
Protected Phases		2		1	6					4	4	5
Permitted Phases			2		6							4
Actuated Green, G (s)		53.3	53.3	24.9	72.5					19.8	19.8	25.5
Effective Green, g (s)		53.3	53.3	24.9	72.5					19.8	19.8	25.5
Actuated g/C Ratio		0.48	0.48	0.23	0.66					0.18	0.18	0.23
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2417	751	762	2245					300	301	699
v/s Ratio Prot		0.17		c0.18	0.20					c0.13	0.13	0.01
v/s Ratio Perm			c0.21									0.06
v/c Ratio		0.36	0.44	0.78	0.30					0.73	0.71	0.26
Uniform Delay, d1		17.7	18.6	40.0	8.0					42.5	42.4	34.6
Progression Factor		0.84	1.47	0.69	1.66					1.00	1.00	1.00
Incremental Delay, d2		0.4	1.7	4.8	0.3					8.5	7.8	0.2
Delay (s)		15.3	29.1	32.3	13.5					51.0	50.2	34.8
Level of Service		B	C	C	B					D	D	C
Approach Delay (s)		21.1			22.3			0.0			42.6	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM Average Control Delay	26.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.59			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	440	810	0	0	980	420	245	0	545	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.95	0.88			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3335	3505			4988	1537	1559	1559	2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3335	3505			4988	1537	1559	1559	2733			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	473	871	0	0	1054	452	263	0	586	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	190	0	0	120	0	0	0
Lane Group Flow (vph)	473	871	0	0	1054	262	131	132	466	0	0	0
Confl. Peds. (#/hr)	4		4	4		4						
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	5%	3%	0%	0%	4%	3%	10%	0%	4%	0%	0%	0%
Turn Type	Prot					Perm	Split		custom			
Protected Phases	5	2			6		8	8	1			
Permitted Phases		2				6			8			
Actuated Green, G (s)	20.3	73.4			63.7	63.7	14.0	14.0	24.6			
Effective Green, g (s)	20.3	73.4			63.7	63.7	14.0	14.0	24.6			
Actuated g/C Ratio	0.18	0.67			0.58	0.58	0.13	0.13	0.22			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	2.3	4.9			4.9	4.9	2.3	2.3	3.0			
Lane Grp Cap (vph)	615	2339			2889	890	198	198	711			
v/s Ratio Prot	c0.14	c0.25			0.21		0.08	0.08	c0.06			
v/s Ratio Perm						0.17			0.11			
v/c Ratio	0.77	0.37			0.36	0.29	0.66	0.67	0.66			
Uniform Delay, d1	42.6	8.1			12.4	11.7	45.7	45.8	38.9			
Progression Factor	0.66	0.61			0.75	1.34	1.00	1.00	1.00			
Incremental Delay, d2	5.2	0.4			0.2	0.6	6.9	7.0	2.2			
Delay (s)	33.2	5.4			9.5	16.2	52.6	52.8	41.0			
Level of Service	C	A			A	B	D	D	D			
Approach Delay (s)		15.2			11.5			44.7			0.0	
Approach LOS		B			B			D			A	

Intersection Summary				
HCM Average Control Delay	20.5	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.49			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	76.5%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	470	785	60	55	575	50	235	75	60	85	80	590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		0.91	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.96		1.00	0.89	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)	2540	3455		1805	2650		1579	3144		1736	1523	1467
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (perm)	2540	3455		1805	2650		1579	3144		1736	1523	1467
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	495	826	63	58	605	53	247	79	63	89	84	621
RTOR Reduction (vph)	0	5	0	0	6	0	0	27	0	0	107	287
Lane Group Flow (vph)	495	884	0	58	652	0	131	231	0	89	250	61
Confl. Peds. (#/hr)	4		4	4		4	2		3	3		2
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	3%	3%	5%	0%	4%	0%	4%	3%	2%	4%	6%	3%
Turn Type	Prot			Prot			Split			Split		Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	28.8	56.0		5.6	32.8		12.5	12.5		18.9	18.9	18.9
Effective Green, g (s)	28.8	56.5		5.6	33.3		12.5	12.5		19.4	19.4	19.4
Actuated g/C Ratio	0.26	0.51		0.05	0.30		0.11	0.11		0.18	0.18	0.18
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	665	1775		92	802		179	357		306	269	259
v/s Ratio Prot	c0.19	0.26		0.03	c0.25		c0.08	0.07		0.05	c0.16	
v/s Ratio Perm												0.04
v/c Ratio	0.74	0.50		0.63	0.81		0.73	0.65		0.29	0.93	0.24
Uniform Delay, d1	37.2	17.5		51.2	35.5		47.1	46.6		39.3	44.6	38.9
Progression Factor	0.83	0.74		0.80	0.77		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.9	0.9		11.5	8.8		13.5	3.6		0.4	36.0	0.3
Delay (s)	34.7	13.8		52.6	35.9		60.7	50.2		39.7	80.6	39.3
Level of Service	C	B		D	D		E	D		D	F	D
Approach Delay (s)		21.3			37.3			53.7			57.9	
Approach LOS		C			D			D			E	

Intersection Summary				
HCM Average Control Delay	37.5	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.81			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	69.1%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	165	530	35	45	450	90	45	30	25	110	45	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98			1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.99	1.00			0.98	1.00
Frt	1.00	0.99		1.00	0.97		1.00	0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1751	3537		1805	3465		1795	1737			1800	1567
Flt Permitted	0.44	1.00		0.43	1.00		0.47	1.00			0.75	1.00
Satd. Flow (perm)	807	3537		810	3465		894	1737			1403	1567
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	170	546	36	46	464	93	46	31	26	113	46	191
RTOR Reduction (vph)	0	2	0	0	8	0	0	22	0	0	0	160
Lane Group Flow (vph)	170	580	0	46	549	0	46	35	0	0	159	31
Confl. Peds. (#/hr)	7					7	4		14	14		4
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	1%	3%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type	Perm			Perm			Perm			Perm		Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	84.3	84.3		84.3	84.3		17.7	17.7			17.7	17.7
Effective Green, g (s)	84.3	84.3		84.3	84.3		17.7	17.7			17.7	17.7
Actuated g/C Ratio	0.77	0.77		0.77	0.77		0.16	0.16			0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	618	2711		621	2655		144	279			226	252
v/s Ratio Prot		0.16			0.16			0.02				
v/s Ratio Perm	c0.21			0.06			0.05				c0.11	0.02
v/c Ratio	0.28	0.21		0.07	0.21		0.32	0.13			0.70	0.12
Uniform Delay, d1	3.8	3.6		3.2	3.6		40.8	39.5			43.7	39.5
Progression Factor	1.01	1.05		2.23	2.30		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.0	0.2		0.2	0.2		1.3	0.2			9.5	0.2
Delay (s)	4.8	3.9		7.3	8.4		42.1	39.7			53.2	39.7
Level of Service	A	A		A	A		D	D			D	D
Approach Delay (s)		4.1			8.3			40.8			45.8	
Approach LOS		A			A			D			D	

Intersection Summary				
HCM Average Control Delay	15.7	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.35			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
31: Wilsonville Rd & Town Center Loop E

Wilsonville TSP
2011 Existing (PM Peak)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	475	60	50	450	70	40	40	40	115	60	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00		1.00	0.97		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1766	1881	1507	1805	3492		1752	1713		1805	1900	1513
Flt Permitted	0.40	1.00	1.00	0.41	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	744	1881	1507	781	3492		1752	1713		1805	1900	1513
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	134	490	62	52	464	72	41	41	41	119	62	98
RTOR Reduction (vph)	0	0	25	0	8	0	0	36	0	0	0	83
Lane Group Flow (vph)	134	490	37	52	528	0	41	46	0	119	62	15
Confl. Peds. (#/hr)	5		7	7		5	8		4	4		8
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	3%	0%	0%	0%	0%	2%
Turn Type	pm+pt		Perm	pm+pt			Prot			Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6								4
Actuated Green, G (s)	74.3	65.9	65.9	68.5	63.0		5.6	10.1		12.5	17.0	17.0
Effective Green, g (s)	74.3	65.9	65.9	68.5	63.0		5.6	10.1		12.5	17.0	17.0
Actuated g/C Ratio	0.68	0.60	0.60	0.62	0.57		0.05	0.09		0.11	0.15	0.15
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	581	1127	903	538	2000		89	157		205	294	234
v/s Ratio Prot	c0.02	c0.26		0.00	0.15		0.02	c0.03		c0.07	0.03	
v/s Ratio Perm	0.14		0.02	0.06								0.01
v/c Ratio	0.23	0.43	0.04	0.10	0.26		0.46	0.29		0.58	0.21	0.06
Uniform Delay, d1	6.6	12.0	9.1	8.5	11.8		50.7	46.6		46.3	40.6	39.7
Progression Factor	0.18	0.31	0.11	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.2	1.2	0.1	0.1	0.3		3.7	1.0		4.1	0.4	0.1
Delay (s)	1.4	4.9	1.1	8.6	12.2		54.5	47.6		50.4	41.0	39.8
Level of Service	A	A	A	A	B		D	D		D	D	D
Approach Delay (s)		3.8			11.8			49.9			44.6	
Approach LOS		A			B			D			D	

Intersection Summary				
HCM Average Control Delay	16.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.43			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	51.4%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
32: NE Miley Rd & I-5 SB Ramp

Wilsonville TSP
2011 Existing (PM Peak)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	85	10	20	20	0	0	0	0	560	0	100
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	0	91	11	22	22	0	0	0	0	602	0	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	22			102			269	161	97	161	167	22
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	22			102			269	161	97	161	167	22
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	24	100	90
cM capacity (veh/h)	1607			1503			611	724	965	797	719	1050

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	102	22	22	710
Volume Left	0	22	0	602
Volume Right	11	0	0	108
cSH	1700	1503	1700	828
Volume to Capacity	0.06	0.01	0.01	0.86
Queue Length 95th (ft)	0	1	0	263
Control Delay (s)	0.0	7.4	0.0	29.3
Lane LOS		A		D
Approach Delay (s)	0.0	3.7		29.3
Approach LOS				D

Intersection Summary				
Average Delay	24.5			
Intersection Capacity Utilization	55.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	575	0	0	30	325	10	5	35	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	75	618	0	0	32	349	11	5	38	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	382			618			976	1151	618	1016	976	207
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	382			618			976	1151	618	1016	976	207
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			95	97	92	100	100	100
cM capacity (veh/h)	1166			972			210	187	487	187	237	839

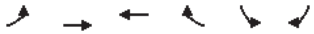
Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	75	618	382	54
Volume Left	75	0	0	11
Volume Right	0	0	349	38
cSH	1166	1700	1700	342
Volume to Capacity	0.06	0.36	0.22	0.16
Queue Length 95th (ft)	5	0	0	14
Control Delay (s)	8.3	0.0	0.0	17.5
Lane LOS	A			C
Approach Delay (s)	0.9		0.0	17.5
Approach LOS				C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	55.5%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	325	285	70	200	155	60
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	357	313	77	220	170	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			357		887	514
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			357		887	514
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			93		41	88
cM capacity (veh/h)			1169		290	559

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	670	77	220	236
Volume Left	0	77	0	170
Volume Right	313	0	0	66
cSH	1700	1169	1700	335
Volume to Capacity	0.39	0.07	0.13	0.70
Queue Length 95th (ft)	0	5	0	127
Control Delay (s)	0.0	8.3	0.0	37.8
Lane LOS		A		E
Approach Delay (s)	0.0	2.2		37.8
Approach LOS				E

Intersection Summary				
Average Delay	7.9			
Intersection Capacity Utilization	60.7%	ICU Level of Service		B
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	200	185	125	0	5	145
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	220	203	137	0	5	159
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	137				780	137
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	137				780	137
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	85				98	82
cM capacity (veh/h)	1440				311	901

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	220	203	137	5	159
Volume Left	220	0	0	5	0
Volume Right	0	0	0	0	159
cSH	1440	1700	1700	311	901
Volume to Capacity	0.15	0.12	0.08	0.02	0.18
Queue Length 95th (ft)	13	0	0	1	16
Control Delay (s)	7.9	0.0	0.0	16.8	9.9
Lane LOS	A			C	A
Approach Delay (s)	4.1		0.0	10.1	
Approach LOS				B	

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	31.0%	ICU Level of Service		A
Analysis Period (min)	15			

ODOT Collision Data

Table B: Study Intersection Collisions and Collision Rates (2006-2010)

Intersection	Collisions (by Severity)				Collisions Per year	Collision Rate[b]
	Fatal	*Injury*	*PDO*[a]	***Total***		
Signalized						
(2) Grahams Ferry Rd/Day Rd	0	4	2	6	1.2	0.29
(4) Boones Ferry Rd/Day Rd	0	5	3	8	1.6	0.27
(5) Boones Ferry Rd/95th Ave	0	8	8	16	3.2	0.35
(6) Elligsen Rd/I-5 SB Ramp	0	10	15	25	5.0	0.46
(7) Elligsen Rd/I-5 NB Ramp	0	17	20	37	7.4	0.64
(8) Elligsen Rd/Parkway Ave	0	5	8	13	2.6	0.26
(9) Elligsen Rd/Parkway Center Drive	0	2	3	5	1.0	0.19
(10) Elligsen Rd/Canyon Cr Rd	0	3	2	5	1.0	0.31
(14) Boeckman Rd/95th Ave	0	0	0	0	0.0	0.00
(17) Boeckman Rd/Parkway Ave	0	5	2	7	1.4	0.24
(20) Kinsman Rd/Barber St	0	0	1	1	0.2	0.24
(22) Town Center Lp/Parkway Ave	0	10	8	18	3.6	0.92
(24) Wilsonville Rd/Brown Rd	0	4	4	8	1.6	0.33
(25) Wilsonville Rd/Kinsman Rd	0	9	8	17	3.4	0.60
(26) Wilsonville Rd/Boones Ferry Rd	0	14	30	44	8.8	0.88
(27) Wilsonville Rd/I-5 SB Ramp	0	9	15	24	4.8	0.40
(28) Wilsonville Rd/I-5 NB Ramp	0	6	13	19	3.8	0.32
(29) Wilsonville Rd/Town Center Lp W	0	9	34	43	8.6	0.82
(30) Wilsonville Rd/Rebekah St	0	11	4	15	3.0	0.54
(31) Wilsonville Rd/Town Center Lp E	0	7	10	17	3.4	0.67
All-Way Stop Controlled						
(15) Boeckman Rd/Boberg Rd	0	0	1	1	0.2	0.07
(18) Boeckman Rd/Canyon Cr Rd	0	1	0	1	0.2	0.07
(19) Boeckman Rd/Stafford Rd	0	4	1	5	1.0	0.26
Two-Way Stop Controlled						
(1) Grahams Ferry Rd/Tonquin Rd	0	0	0	0	0.0	0.00
(3) Grahams Ferry Rd/Clutter Rd	0	0	0	0	0.0	0.00
(11) Stafford Rd/65th Ave	0	0	0	0	0.0	0.00
(12) Grahams Ferry Rd/Tooze Rd	0	0	0	0	0.0	0.00
(13) Boeckman Rd/110th Ave	0	0	0	0	0.0	0.00
(16) Boeckman Rd/Boones Ferry Rd Access Lp	0	3	2	5	1.0	0.33
(21) Boones Ferry Rd/Barber St	0	1	0	1	0.2	0.10
(23) Town Center Lp/Vlahos Dr	0	0	1	1	0.2	0.09
(32) Miley Rd/I-5 SB Off Ramp	0	0	0	0	0.0	0.00
(33) Miley Rd/I-5 NB Off Ramp	0	0	0	0	0.0	0.00
(34) Miley Rd/NE Airport Rd	0	1	1	2	0.4	0.11
(35) Miley Rd/ French Prairie Dr W	0	0	1	1	0.2	0.09

[a] PDO = Property damage only.

[b] Collision rate = average annual collisions per million entering vehicles (MEV); MEV estimates based on p.m. peak-hour traffic count and applicable factors.

[c] **Bold shaded** collision rate values exceed the typical 1.0 collision per million entering vehicles (MEV) threshold.

General Data			Highway		Street Names		From Intersection		Overall									Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1203659	2816	7/7/2006			00430 UNKNOWN NAME	MURRAY ST	200	N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	CURB	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE									
1205976	3443	8/19/2006			00604 UNKNOWN NAME	WINCHESTER WAY	500	SW	CURVE	O-STRGHT	SS-M	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STRGHT	SW to NE	NONE				
1399184	4540	11/30/2010			ADVANCE RD	STAFFORD RD	0	CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	E to W	AVOIDING	PSNGR CAR	STRGHT	N to S	GO A/STOP				
1245845	2422	6/11/2007			AIRPORT RD	MILEY RD	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		PASSED STOP SIGN	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1356524	146	1/14/2010			AIRPORT RD	MILEY RD	0	CN	INTER	O-1TURN	TURN	INJ	CLOUDY	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	E to S	NONE				
1395550	686	2/28/2010			ARBOR LAKE DR			UN	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAWN	TREE/STUMP	OTHR IMPROPER DRIVING	PSNGR CAR	UNK	UN to UN	NONE								
1193608	1439	4/10/2006			BARBER ST	BOBERG ST	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1304607	3528	9/18/2008			BARBER ST	KINSMAN RD	150	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1240147	389	1/16/2007			BOECKMAN RD	95TH LN	50	W	STRGHT	ANGL-OTH	TURN	PDO	CLEAR	SNOW	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1240179	1764	1/16/2007			BOECKMAN RD	95TH LN	100	N	STRGHT	ANGL-OTH	TURN	PDO	SNOW	SNOW	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	TURN-R	E to N	NONE	OTH BUS	STOP	N to S	STOPPED				
1240180	1763	1/16/2007			BOECKMAN RD	95TH LN	100	W	STRGHT	O-STRGHT	SS-M	PDO	SNOW	SNOW	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1310341	4916	12/14/2008			BOECKMAN RD	95TH LN	1320	W	BRIDGE	FIX OBJ	FIX	INJ	SNOW	ICE	DAYLIGHT	WALL	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE								
1399867	5038	12/30/2010			BOECKMAN RD	BOBERG ST	50	E	BRIDGE	FIX OBJ	FIX	PDO	CLEAR	ICE	DAYLIGHT	GUARDRAIL	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	SKIDDED								
1267098	5451	12/9/2007			BOECKMAN RD	CANYON CREEK RD	200	W	STRGHT	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1219983	85601	12/21/2006			BOECKMAN RD	SW HEATHER PL	0	S	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	PREV COL
1303717	3318	8/30/2008			BOECKMAN RD	SW PARKWAY AVE	20	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1310773	4952	12/16/2008			BOECKMAN RD	SW PARKWAY AVE	60	SE	STRGHT	S-1STOP	REAR	PDO	CLEAR	SNOW	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	STOP	SE to NW	STOPPED				
1339574	3413	9/11/2009			BOECKMAN RD	SW PARKWAY AVE	0	CN	INTER	BIKE	ANGL	INJ	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE								
1359703	629	2/22/2010			BOECKMAN RD	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1385001	83674	10/28/2010			BOECKMAN RD	SW PARKWAY AVE	0	S	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1398571	4587	12/3/2010			BROWN RD	TRANQUIL PL	0	CN	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	PED INVOLVED	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1208655	3993	9/25/2006			BURNS WAY	CANYON CREEK RD	500	W	ALLEY	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	W to S	ENTR DWY	PSNGR CAR	STRGHT	W to E	NONE				
1247038	84350	6/21/2007			CANYON CREEK RD	BURNS WAY	300	S	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	INATTENTION	PSNGR CAR	STRGHT	N to S	NONE								
1290685	2426	6/29/2008			CANYON CREEK RD	BURNS WAY	100	S	STRGHT	FIX OBJ	FIX	PDO	CLOUDY	WET	DAYLIGHT	TREE/STUMP	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE								
1353701	4480	11/20/2009			CANYON CREEK RD	BURNS WAY	500	S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DARK-ST LIGHTS	CURB	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1316086	413	1/27/2009			CANYON CREEK RD	ROANOKE DR	500	N	STRGHT	FIX OBJ	FIX	PDO	FOG	ICE	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE								
1354946	1733	5/13/2009			CANYON CREEK RD	SW CARRIAGE OAKS LN	50	N	STRGHT	S-1STOP	REAR	PDO	CLOUDY	WET	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	N to S	NONE	SCHL BUS	STOP	N to S	STOPPED				
1328777	2044	6/4/2009			CANYON CREEK RD	SW CARRIAGE OAKS LN	130	N	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DAYLIGHT	CURB	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	AVOIDING								
1194080	81530	4/11/2006			ELLIGSEN RD			UN	UNK	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1376195	82571	7/23/2010			ELLIGSEN RD		0	UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	SLOW DN				
1270111	85221	11/28/2007	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAWN		OTHR IMPROPER DRIVING	PSNGR CAR	TURN-R	S to E	NONE	UNKNOWN	TURN-R	S to E	STP TURN				
1290384	3158	6/13/2008	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1290958	82273	6/17/2008	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1294838	4156	8/1/2008	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		S	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE											
1300892	7301	10/10/2008			ELLIGSEN RD	NB BEAV-TUALATIN HY	0	SE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	TURN-R	SW to E	NONE	PSNGR CAR	TURN-R	SW to E	STP TURN				
1315250	80093	1/6/2009	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		S	INTER	S-OTHER	TURN	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE											
1319927	80463	2/3/2009	141	12.96	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	GRADE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		INATTENTION											
1319703	80726	2/24/2009	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1323458	81298	4/4/2009	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1340027	6934	8/21/2009	141	12.96	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1343931	6940	9/20/2009	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1350708	5814	11/3/2009	141	12.97	ELLIGSEN RD	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1368204	81459	5/3/2010	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1370803	81745	5/25/2010	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		DISREGARD TRAF SIG											
1398853	84626	12/4/2010	141	12.95	ELLIGSEN RD	NB BEAV-TUALATIN HY		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1368533	1972	4/25/2010	141	13.14	ELLIGSEN RD	NB EF BEAV-TUAL C1		W	CURVE	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAYLIGHT	POLE-TRAF SIGNAL	DEFECTIVE BRAKES											
1183267	80251	1/16/2006			ELLIGSEN RD	SW ARGYLE AVE	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1247035	82673	6/26/2007			ELLIGSEN RD	SW ARGYLE AVE	30	S	ALLEY	ANGL-STP	ANGL	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	W to E	EXIT DWY	PSNGR CAR	STOP	N to S	STOPPED				
1249066	4691	8/13/2007			ELLIGSEN RD	SW ARGYLE AVE	0	W	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1292347	82500	7/1/2008			ELLIGSEN RD	SW ARGYLE AVE	150	S	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	E to N	EXIT DWY	PSNGR CAR	STRGHT	S to N	NONE				
1315860	80362	1/30/2009			ELLIGSEN RD	SW ARGYLE AVE	0	S	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	TURN-R	W to S	NONE				
1182947	80074	1/4/2006			ELLIGSEN RD	SW CANYON CREEK RD	0	CN	INTER	S-1TURN	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		DISREGARD TRAF SIG	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1285044	2038	4/14/2008			ELLIGSEN RD	SW CANYON CREEK RD	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1293391	82819	7/27/2008			ELLIGSEN RD	SW CANYON CREEK RD	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1372462	82056	6/15/2010			ELLIGSEN RD	SW CANYON CREEK RD	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1396320	5578	10/20/2010			ELLIGSEN RD	SW CANYON CREEK RD	300	E	GRADE	OTH	NCOL	INJ	CLEAR	DRY	DARK-ST LIGHTS		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE								
1206263	83553	4/26/2006			ELLIGSEN RD	SW PARKWAY AVE	100	N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	W to N	EXIT DWY	PSNGR CAR	STRGHT	N to S	NONE				
1205380	83228	8/4/2006			ELLIGSEN RD	SW PARKWAY AVE	90	N	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAWN		IMPROPER LANE CHANGE	TRUCK	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1210479	83702	9/6/2006			ELLIGSEN RD	SW PARKWAY AVE	0	E	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1252940	83320	8/1/2007			ELLIGSEN RD	SW PARKWAY AVE	100	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1274048	436	1/21/2008			ELLIGSEN RD	SW PARKWAY AVE	30	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STP/L TRN				
1274047	432	1/21/2008			ELLIGSEN RD	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	U-TURN	W to W	TRN A/RED				
1293382	3987	7/30/2008			ELLIGSEN RD	SW PARKWAY AVE	40	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1326126	5541	5/14/2009			ELLIGSEN RD	SW PARKWAY AVE	200	N	STRGHT	S-1STOP	SS-O	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	FOLLOW TOO CLOSE	MTRCYCLE	STRGHT	S to N	PASSING	PSNGR CAR	STOP	S to N	STP/L TRN				
1355132	6809	12/29/2009			ELLIGSEN RD	SW PARKWAY AVE	500	N	ALLEY	S-1STOP	REAR	PDO	SNOW	SNOW	DAYLIGHT		FOLLOW TOO CLOSE	TRUCK	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to W	STP/L TRN				
1394534	90150	1/12/2010	141	12.86	ELLIGSEN RD	SW PARKWAY AVE		W	INTER	ANGL-STP	TURN	PDO	CLOUDY	WET	DAYLIGHT		FATIGUE											
1357675	80431	2/8/2010			ELLIGSEN RD	SW PARKWAY AVE	75	N	ALLEY	BIKE	TURN	INJ	FOG	DRY	DARK-NO ST LIGHTS		NON-MOTORIST - NOT VISBL	PSNGR CAR	TURN-L	S to W	NONE								
1375973	82524	7/21/2010	141	12.86	ELLIGSEN RD	SW PARKWAY AVE		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG											
1399734	7387	12/30/2010	141	12.95	ELLIGSEN RD	SW PARKWAY AVE		UN	INTER	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING											
1184720	214	1/11/2006			ELLIGSEN RD	SW PARKWAY CENTER DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	DUSK		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1252939	83294	8/2/2007			ELLIGSEN RD	SW PARKWAY CENTER DR	0	S	INTER	S-OTHER	TURN	INJ	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	OTHR IMPROPER DRIVING	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	TURN-R	W to S	NONE				
1272820	80224	1/15/2008			ELLIGSEN RD	SW PARKWAY CENTER DR	0	S	INTER	ANGL-OTH	TURN	PDO	CLEAR	ICE	DAWN	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	STOP	S to N	STP/L TRN				
1324806	81366	4/15/2009			ELLIGSEN RD	SW PARKWAY CENTER DR	0	S	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	W to S	NONE	TRUCK	TURN-R	W to S	NONE				
1345669	83990	10/23/2009			ELLIGSEN RD	SW PARKWAY CENTER DR	290	W	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1257973	4094	9/21/2007			FRENCH PRAIRIE DR	ARBOR LAKE DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	NW to SE	NONE	PSNGR CAR	TURN-L	SE to SW	NONE				
1319068	779	2/27/2009			FRENCH PRAIRIE DR	CHARBONNEAU DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	E to S	NONE				
1376032	2505	7/17/2010			FRENCH PRAIRIE DR	CHARBONNEAU DR	150	S	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	ENTR DWY	PSNGR CAR	STRGHT	S to N	NONE				
1267040	5416	12/6/2007			FRENCH PRAIRIE DR	MILEY RD	0	CN	INTER	FIX OBJ	FIX	PDO	RAIN	WET	DARK-ST LIGHTS	SUBSEQ OVERTURN	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE								
1184265	208	1/13/2006			FRENCH PRAIRIE DR	MOLALLA BEND RD	50	E	CURVE	S-1STOP	REAR	PDO	RAIN	WET	DARK-NO ST LIGHTS		OTHER	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	PRKD-P	W to E	PAR PARK				
1344264	3829	10/11/2009			FRENCH PRAIRIE DR	MOLALLA BEND RD	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT	POLE-UTILITY	NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1313011	2989	8/8/2008			FRENCH PRAIRIE DR	SW ARMITAGE DR	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	N to E	NONE				
1354950	1632	5/3/2009			FRENCH PRAIRIE DR	SW FOUNTAIN LAKE DR	50	W	ALLEY	PRKD MV	BACK	PDO	CLEAR	WET	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	N to W	EXIT DWY	PSNGR CAR	PRKD-P	W to E	PAR PARK				
1227896	2550	6/21/2006			N OF TOWN CENTER LP W	SW PARKWAY AVE	1000	NW	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DARK-NO ST LIGHTS	MEDIAN BARRIER	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	NW to SE	NONE								
1242153	1601	4/20/2007			NB BEAV-TUALATIN HY	BOECKMAN RD	0	S	INTER	FIX OBJ	FIX	INJ	CLOUDY	DRY	UNKNOWN	TREE/STUMP	TOO FAST FOR COND	PSNGR CAR	TURN-L	E to S	NONE								
1348505	83962	10/21/2009	141	13.05	NB EF BEAV-TUAL C1	SW PARKWAY AVE		W	CURVE	S-1STOP	REAR	PDO	RAIN	WET	DARK-ST LIGHTS		FOLLOW TOO CLOSE											
1252538	2843	7/8/2007	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	PREV COL
1252947	3065	7/18/2007	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1253786	3719	8/28/2007	1	999.99	PACIFIC HY I-5		0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	NW to S	NONE	UNKNOWN	STRGHT	N to S	NONE				
1281694	1137	3/21/2008	1	999.99	PACIFIC HY I-5		0	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1287878	1942	5/20/2008	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE											
1307939	4873	12/15/2008	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	FIX OBJ	FIX	PDO	UNKNOWI	UNKNOWN	DAYLIGHT	CUT SLOPE/DITCH	TOO FAST FOR COND											
1335030	2658	7/21/2009	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1343073	3264	9/1/2009	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE											
1343228	3308	9/3/2009	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE											
1352264	5158	11/17/2009	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-STRGHT	REAR	INJ	CLOUDY	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE											
1368942	1590	5/13/2010	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1370282	1694	5/20/2010	1	284.5	PACIFIC HY I-5		0	UN	STRGHT	OTH OBJ	FIX	INJ	RAIN	WET	DAYLIGHT	FOREIGN OBJECT	TOO FAST FOR COND											
1370302	1697	5/20/2010	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE											

General Data			Highway		Street Names		From Intersection		Overall								Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1380683	2959	7/29/2010	1	999.99	PACIFIC HY I-5		0	UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE											
1226182	85417	12/14/2006	1	286	PACIFIC HY I-5	BOONES FERRY FR		N	GRADE	S-1STOP	REAR	PDO	UNKNOWI	UNKNOWN	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1190720	80935	3/9/2006	1	285.89	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	SNOW	SNOW	DAWN		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	SKIDDED	PSNGR CAR	STOP	S to N	STOPPED				
1202762	82700	6/29/2006	1	285.93	PACIFIC HY I-5	NB BEAV-TUALATIN HY		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	SEMI TOW	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1213344	3532	8/25/2006	1	285.85	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1226703	4356	10/17/2006	1	284.77	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	CLOUDY	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1226706	4690	11/2/2006	1	285	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	INJ	RAIN	WET	DARK-ST LIGHTS	REFER OTHER ACDT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1226707	4659	11/2/2006	1	285	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DARK-ST LIGHTS	REFER OTHER ACDT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	SKIDDED	PSNGR CAR	STOP	N to S	STOPPED				
1226158	87628	12/14/2006	1	285.37	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAWN		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1241166	235	1/17/2007	1	999.99	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	FOG	ICE	DARK-ST LIGHTS	GUARDRAIL	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE								
1241167	90234	1/17/2007	1	999.99	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	INJ	FOG	ICE	DARK-ST LIGHTS	GUARDRAIL	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	SKIDDED								
1231846	808	2/8/2007	1	286	PACIFIC HY I-5	NB BEAV-TUALATIN HY		N	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAWN	WIRE BARRIER	OTHER	PSNGR CAR	STRGHT	S to N	CROS MED								
1237004	80979	3/2/2007	1	286.02	PACIFIC HY I-5	NB BEAV-TUALATIN HY		N	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1237202	1015	3/7/2007	1	999.99	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1252946	3054	7/18/2007	1	285.18	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DAYLIGHT	WIRE BARRIER	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	SKIDDED								
1266964	3114	7/22/2007	1	285.67	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	SS-O	INJ	CLOUDY	DRY	DAYLIGHT	FORCED BY IMPACT	SPEEDING	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	STOPPED
1253207	3292	8/2/2007	1	285.68	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	DEFECTIVE BRAKES	PSNGR CAR	STRGHT	S to N	CROS MED								
1269663	4804	11/1/2007	1	285.28	PACIFIC HY I-5	NB BEAV-TUALATIN HY		UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1269711	4971	11/16/2007	1	285.86	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	PREV COL
1269955	8131	12/28/2007	1	999.99	PACIFIC HY I-5	NB BEAV-TUALATIN HY		UN	GRADE	S-STRGHT	SS-O	PDO	RAIN	WET	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1301473	4370	11/12/2008	1	285.5	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND												
1338859	2878	8/9/2009	1	285.66	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1352068	4705	12/5/2009	1	285.73	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE												
1361875	653	2/24/2010	1	285	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	WET	DAYLIGHT	WHEEL CAME OFF	OTHER												
1368439	1520	5/7/2010	1	285.86	PACIFIC HY I-5	NB BEAV-TUALATIN HY		UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1369923	1638	5/19/2010	1	285.64	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAWN	MEDIAN BARRIER	IMPROPER LANE CHANGE												
1376534	2606	7/27/2010	1	285.77	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE												
1385268	3325	9/16/2010	1	285.65	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	OTH	PDO	CLEAR	DRY	DAYLIGHT	TIRE FAILURE	TIRE FAILURE												
1387574	82312	11/7/2010	1	284.89	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	BRIDGE	FIX OBJ	FIX	PDO	RAIN	WET	DAWN	MEDIAN BARRIER	TOO FAST FOR COND												
1398238	4450	11/24/2010	1	285	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1398435	4563	12/1/2010	1	285.87	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	CURVE	S-1STOP	REAR	PDO	UNKNOWI	UNKNOWN	DAWN		FOLLOW TOO CLOSE												
1398826	4639	12/6/2010	1	285	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAWN	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1399398	4684	12/9/2010	1	285.65	PACIFIC HY I-5	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1292802	3862	7/24/2008	141	13.14	PACIFIC HY I-5	NB EF BEAV-TUAL C1		SE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1344096	6939	9/25/2009	1	285.98	PACIFIC HY I-5	NB EF BEAV-TUAL C1		UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1186767	547	1/21/2006	141	12.84	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	CURVE	FIX OBJ	FIX	INJ	CLOUDY	WET	DARK-NO ST LIGHTS	GUARDRAIL	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	OTHER								
1207214	4702	8/12/2006	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1213440	83562	8/28/2006	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	REFER OTHER ACDT	FOLLOW TOO CLOSE	UNKNOWN	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1213443	9562	8/28/2006	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1212244	5686	9/27/2006	141	13.06	PACIFIC HY I-5	NB EF BV-TUAL HY C2		SE	CURVE	OTH	NCOL	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		CARELESS	SEMI TOW	STRGHT	NW to SE	NONE								
1236216	1361	3/7/2007	1	286.16	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	ANGL-OTH	ANGL	INJ	CLOUDY	WET	DAYLIGHT	VEH TOWED/TOWING	TOO FAST FOR COND	PSNGR CAR	STRGHT	SE to NW	OTHER	SEMI TOW	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	PREV COL
1252533	82916	7/12/2007	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1246349	4015	7/13/2007	1	286.21	PACIFIC HY I-5	NB EF BV-TUAL HY C2		N	GRADE	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	TRUCK	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN	PSNGR CAR	STRGHT	S to N	PREV COL
1265850	6943	11/13/2007	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	WET	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	SEMI TOW	STOP	S to N	PREV COL
1284821	81292	4/3/2008	1	286.17	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1295078	7265	7/23/2008	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	IMPROPER LANE CHANGE												
1295336	4236	8/11/2008	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-STRGHT	REAR	PDO	CLEAR	DRY	DARK-ST LIGHTS	VEH TOWED/TOWING	FOLLOW TOO CLOSE												
1298504	7279	9/26/2008	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1300909	7304	10/20/2008	1	286.2	PACIFIC HY I-5	NB EF BV-TUAL HY C2		CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		SPEEDING												
1305667	6073	11/5/2008	1	286	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	WET	DAYLIGHT	CUT SLOPE/DITCH	OTHER												
1308214	85070	12/23/2008	1	285.89	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	S-1STOP	REAR	PDO	SNOW	ICE	DAYLIGHT		TOO FAST FOR COND												
1344459	3866	8/10/2009	1	286.19	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	GRADE	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAYLIGHT	TIRE FAILURE	FOLLOW TOO CLOSE												
1344206	6938	9/25/2009	1	286.07	PACIFIC HY I-5	NB EF BV-TUAL HY C2		UN	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	SPEEDING												
1375289	2958	6/18/2010	141	12.97	PACIFIC HY I-5	NB EF BV-TUAL HY C2		SE	CURVE	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND												
1376616	3480	7/15/2010	1	285.93	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1379302	7477	8/13/2010	141	13.04	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	CURVE	NON-COLL	NCOL	PDO	CLEAR	WET	DAYLIGHT	JACKKNIFE	OTHR IMPROPER DRIVING												
1398335	6498	11/22/2010	1	285.9	PACIFIC HY I-5	NB EF BV-TUAL HY C2		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND												
1183976	27	1/3/2006	1	284.21	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DARK-ST LIGHTS		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	AVOIDING	PSNGR CAR	STRGHT	S to N	NONE				
1191370	271	1/18/2006	1	284.92	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLOUDY	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	SEMI TOW	STRGHT	S to N	NONE				
1191371	460	1/27/2006	1	284.13	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	CURVE	S-STRGHT	REAR	INJ	RAIN	WET	DARK-ST LIGHTS	TREE/STUMP	SPEEDING	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1191885	433	1/28/2006	1	284.23	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	RAIN	WET	DAYLIGHT	WIRE BARRIER	PHANTOM VEHICLE	PSNGR CAR	STRGHT	S to N	AVOIDING								
1191368	937	3/7/2006	1	284.18	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	RAIN	WET	DAWN		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1202764	2653	6/27/2006	1	285	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DARK-ST LIGHTS	FENCE/BUILDING	FATIGUE	PSNGR CAR	STRGHT	S to N	NONE								
1213705	2893	7/15/2006	1	285.13	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	O-STRGHT	SS-M	INJ	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	PHANTOM VEHICLE	PSNGR CAR	STRGHT	N to S	CROS MED	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	PREV COL
1213707	3196	8/2/2006	1	284	PACIFIC HY I-5	NB ENFR WLSNVL RD		SE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	SKIDDED	PSNGR CAR	STRGHT	S to N	SLOW DN				
1214122	3229	8/4/2006	1	284.89	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1210443	3448	8/18/2006	1	285.38	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1210442	3735	9/8/2006	1	285.83	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE
1213709	3851	9/15/2006	1	285	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1213710	4051	9/30/2006	1	285.18	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		CARELESS	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1226705	5051	11/23/2006	1	284.87	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1241169	29	1/3/2007	1	284.88	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1246884	2219	5/30/2007	1	284.07	PACIFIC HY I-5	NB ENFR WLSNVL RD		SE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	STOP	SE to NW	STOPPED				
1253204	3250	8/3/2007	1	283.93	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN	PSNGR CAR	STRGHT	S to N	PREV COL
1253485	3570	8/16/2007	1	284.07	PACIFIC HY I-5	NB ENFR WLSNVL RD		SE	CURVE	S-STRGHT	REAR	INJ	CLOUDY	DRY	DAYLIGHT	DELINEATOR	INATTENTION	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	STRGHT	SE to NW	SLOW DN				
1269518	5769	12/29/2007	1	284.33	PACIFIC HY I-5	NB ENFR WLSNVL RD		E	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1284758	1436	4/14/2008	1	284.84	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	INJ	RAIN	WET	DAYLIGHT		DROVE LEFT OF CENTER												
1294882	2550	7/9/2008	1	284.88	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1304341	5226	7/19/2008	1	284.23	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	SPEEDING												
1300948	4197	11/3/2008	1	283.99	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	FIX OBJ	FIX	PDO	CLOUDY	WET	DARK-NO ST LIGHTS	WIRE BARRIER	CARELESS												
1301570	4502	11/21/2008	1	284.87	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE												
1321649	817	3/3/2009	1	284.08	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	UNKNOWI	UNKNOWN	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE												
1331354	2210	6/16/2009	1	284.88	PACIFIC HY I-5	NB ENFR WLSNVL RD		UN	STRGHT	ANIMAL	OTH	INJ	CLOUDY	DRY	DAYLIGHT	DEER OR ELK	OTHR IMPROPER DRIVING												
1335086	2786	7/30/2009	1	285.5	PACIFIC HY I-5	NB ENFR WLSNVL RD		UN	STRGHT	OTH OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	TEMP SIGN/BARR	OTHR IMPROPER DRIVING												
1338930	2907	8/7/2009	1	283.88	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1343614	3448	9/14/2009	1	283.89	PACIFIC HY I-5	NB ENFR WLSNVL RD		UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1348124	3808	10/9/2009	1	284.37	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-ST LIGHTS	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1351584	4246	11/6/2009	1	284.07	PACIFIC HY I-5	NB ENFR WLSNVL RD		NE	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1351669	4366	11/15/2009	1	284.79	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLOUDY	WET	DUSK		IMPROPER LANE CHANGE												
1344034	5212	11/26/2009	1	284.87	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1351948	4590	11/28/2009	1	284	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS	PHANTOM VEH	PHANTOM VEHICLE												
1361668	381	2/4/2010	1	285	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	RAIN	WET	DARK-ST LIGHTS	WIRE BARRIER	SPEEDING												
1367370	1360	4/24/2010	1	284.74	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	OTH OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	OBJ FRM OTHR VEH	OTHER												
1368451	1527	5/8/2010	1	284	PACIFIC HY I-5	NB ENFR WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1368971	1596	5/13/2010	1	284.62	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLOUDY	DRY	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND												
1369979	1645	5/19/2010	1	285	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE												
1380717	2963	8/14/2010	1	999.99	PACIFIC HY I-5	NB ENFR WLSNVL RD		UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE												
1388531	4696	12/19/2010	1	284.07	PACIFIC HY I-5	NB ENFR WLSNVL RD		S	STRGHT	PED	PED	FAT	CLOUDY	WET	DARK-ST LIGHTS		NON-MOTORIST - ILLEGALLY IN RDWY												

General Data			Highway		Street Names		From Intersection		Overall								Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1399682	4944	12/24/2010	1	285.39	PACIFIC HY I-5	NB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLOUDY	WET	DAYLIGHT	WIRE BARRIER	CARELESS												
1183155	116	1/7/2006	1	283.9	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	RAIN	WET	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	SEMI TOW	STRGHT	S to N	NONE				
1186420	623	2/10/2006	1	999.99	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1199817	86011	5/26/2006	1	283.6	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1201513	2266	5/26/2006	1	283.63	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	PDO	CLOUDY	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1213700	3395	8/17/2006	1	283.21	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	BRIDGE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	SKIDDED	PSNGR CAR	STOP	S to N	STOPPED				
1213708	4042	9/28/2006	1	284.38	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	GUARDRAIL	SPEEDING	PSNGR CAR	STRGHT	S to N	NONE								
1226698	4641	11/3/2006	1	283.7	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1222348	4872	11/15/2006	1	283.15	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	BRIDGE	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	SKIDDED	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	STOPPED
1226699	5290	12/6/2006	1	283.4	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1237200	976	3/2/2007	1	283.19	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	BRIDGE	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	INATTENTION	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	STOPPED
1237201	978	3/2/2007	1	283.93	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1248364	84160	4/11/2007	1	283.5	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLOUDY	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	STOPPED
1246879	2324	6/5/2007	1	283.48	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1252944	3029	7/20/2007	1	999.99	PACIFIC HY I-5	NB EXTO WLSNVL RD		UN	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1253489	3611	8/22/2007	1	283.21	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1253790	3749	8/26/2007	1	283.72	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1269676	4823	11/3/2007	1	283.63	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	WHEEL CAME OFF	MECHANICAL DEFECT	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	AVOIDING				
1269694	4934	11/9/2007	1	283.92	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1269713	4980	11/15/2007	1	283.23	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	INJ	RAIN	WET	DUSK		IMPROPER LANE CHANGE	SEMI TOW	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1269094	5562	12/16/2007	1	283.72	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	ANIMAL	OTH	PDO	RAIN	WET	DARK-ST LIGHTS	DEER OR ELK	NO CODE	PSNGR CAR	STRGHT	S to N	NONE								
1277349	484	2/1/2008	1	283.73	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	INTER	S-1TURN	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS	VEH TOWED/TOWING	PHANTOM VEHICLE												
1281595	1000	3/10/2008	1	283.11	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	BRIDGE	OTH OBJ	OTH	PDO	CLEAR	DRY	DAYLIGHT	LOAD SHIFTED	OTHER												
1300839	3734	10/2/2008	1	283.85	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLOUDY	WET	DAYLIGHT		IMPROPER LANE CHANGE												
1300954	4199	11/3/2008	1	283.35	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLOUDY	WET	DAWN		CARELESS												
1301573	4513	11/21/2008	1	283.75	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DARK-ST LIGHTS		FOLLOW TOO CLOSE												
1308021	4973	12/20/2008	1	283.82	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	SNOW	ICE	DAYLIGHT		TOO FAST FOR COND												
1321687	822	3/2/2009	1	283.88	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1323264	80762	3/6/2009	1	283.11	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	BRIDGE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1327736	1714	5/10/2009	1	283.41	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAYLIGHT	GUARDRAIL	FATIGUE												
1327761	1732	5/13/2009	1	285.7	PACIFIC HY I-5	NB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1340246	3061	8/20/2009	1	283.39	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1343721	3482	9/16/2009	1	283.5	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	RAIN	WET	DAYLIGHT	SLIPPERY SURFACE	CARELESS												
1351448	4198	11/1/2009	1	283.7	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	OTH OBJ	FIX	PDO	CLEAR	DRY	DARK-ST LIGHTS		101 OTHER												
1352210	5030	12/25/2009	1	283.72	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DARK-ST LIGHTS		IMPROPER LANE CHANGE												
1364404	1119	4/2/2010	1	283.41	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	INJ	CLOUDY	WET	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND												
1369983	1647	5/19/2010	1	283.68	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1372643	1966	6/9/2010	1	283.82	PACIFIC HY I-5	NB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	UNKNOWI	UNKNOWN	DAYLIGHT		FOLLOW TOO CLOSE												
1375241	2370	7/9/2010	1	283.4	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	OTHR IMPROPER DRIVING												
1384795	3290	9/15/2010	1	283.5	PACIFIC HY I-5	NB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		TOO FAST FOR COND												
1387818	3544	9/30/2010	1	283.66	PACIFIC HY I-5	NB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1206996	84571	9/13/2006	1	285.85	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	GRADE	PED	PED	FAT	CLEAR	DRY	DARK-ST LIGHTS		NON-MOTORIST - ILLEGALLY IN RDWY	SEMI TOW	STRGHT	N to S	OTHER								
1222936	5545	12/18/2006	1	285.68	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS	CELLPHONE-POLICE	INATTENTION	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1252362	2746	7/25/2007	1	285.87	PACIFIC HY I-5	SB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	NO YIELD	PSNGR CAR	TURN-R	NW to S	NONE	SEMI TOW	STRGHT	N to S	NONE				
1253008	3163	7/27/2007	1	285.45	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1253481	3535	8/19/2007	1	285.5	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	WIRE BARRIER	FATIGUE	PSNGR CAR	STRGHT	N to S	NONE								
1250443	85076	8/28/2007	1	285.82	PACIFIC HY I-5	SB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	NW to S	NONE	TRUCK	STRGHT	N to S	NONE				
1258018	6479	10/26/2007	1	285.97	PACIFIC HY I-5	SB BEAV-TUALATIN HY		N	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT	GUARDRAIL	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1277920	630	2/10/2008	1	285.18	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	GRADE	S-STRGHT	SS-O	PDO	CLOUDY	DRY	DARK-ST LIGHTS	WIRE BARRIER	IMPROPER LANE CHANGE												
1287862	1727	4/25/2008	1	285.19	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT	FENCE/BUILDING	SPEEDING												
1298415	3613	9/21/2008	1	285.82	PACIFIC HY I-5	SB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	INJ	RAIN	WET	DAYLIGHT		IMPROPER TURN												
1307814	4685	12/3/2008	1	285.68	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	OTH OBJ	OTH	INJ	CLEAR	DRY	DAYLIGHT	TIRE FAILURE	TIRE FAILURE												
1307998	4894	12/14/2008	1	285.13	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	PED	PED	INJ	CLOUDY	ICE	DARK-ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND												
1321908	1081	3/23/2009	1	285.83	PACIFIC HY I-5	SB BEAV-TUALATIN HY		UN	STRGHT	FIX OBJ	FIX	PDO	CLOUDY	DRY	DAYLIGHT	WIRE BARRIER	TIRE FAILURE												
1334798	1819	5/19/2009	1	285.81	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	SS-O	INJ	CLOUDY	WET	DAYLIGHT	FORCED BY IMPACT	SPEEDING												
1330434	82325	5/19/2009	1	285.18	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FELL/JUMPED MV	TOO FAST FOR COND												
1338989	2924	8/7/2009	1	285.16	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	UNKNOWN	DAYLIGHT		FOLLOW TOO CLOSE												
1339898	5196	10/13/2009	1	285	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	SS-O	PDO	CLOUDY	DRY	DAYLIGHT		FATIGUE												
1351595	4251	11/6/2009	1	285.62	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	WIRE BARRIER	TOO FAST FOR COND												
1379807	2912	8/13/2010	1	285.79	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1396522	4089	11/6/2010	1	285.46	PACIFIC HY I-5	SB BEAV-TUALATIN HY		S	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND												
1284281	1873	4/9/2008	1	286.13	PACIFIC HY I-5	SB EF BV-TUAL HY C3		N	GRADE	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAYLIGHT	MEDIAN BARRIER	OTHER												
1295032	7264	7/22/2008	1	286.22	PACIFIC HY I-5	SB EF BV-TUAL HY C3		N	GRADE	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND												
1308271	85133	12/30/2008	1	286.14	PACIFIC HY I-5	SB EF BV-TUAL HY C3		S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DARK-ST LIGHTS	VEH TOWED/TOWING	CARELESS												
1322272	1103	3/10/2009	1	286.3	PACIFIC HY I-5	SB EF BV-TUAL HY C3		N	STRGHT	S-STRGHT	SS-O	INJ	CLOUDY	WET	DAYLIGHT	GUARDRAIL	IMPROPER LANE CHANGE												
1339047	82939	8/1/2009	1	286	PACIFIC HY I-5	SB EF BV-TUAL HY C3		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		TOO FAST FOR COND												
1362469	821	2/17/2010	1	286.29	PACIFIC HY I-5	SB EF BV-TUAL HY C3		N	GRADE	FIX OBJ	FIX	PDO	CLEAR	DRY	DUSK	FENCE/BUILDING	TOO FAST FOR COND												
1396394	5659	10/15/2010	1	286.25	PACIFIC HY I-5	SB EF BV-TUAL HY C3		N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1400067	7252	12/23/2010	1	285.95	PACIFIC HY I-5	SB EF BV-TUAL HY C3		S	STRGHT	S-1STOP	REAR	INJ	CLOUDY	DRY	DARK-NO ST LIGHTS	FORCED BY IMPACT	TOO FAST FOR COND												
1194064	1343	4/4/2006	1	999.99	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	SEMI TOW	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1201512	2632	6/27/2006	1	283.15	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	BRIDGE	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	TRUCK	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1226700	3173	8/1/2006	1	283.75	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1213702	3832	9/14/2006	1	999.99	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	UNKNOWI	UNKNOWN	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN	PSNGR CAR	STRGHT	N to S	PREV COL
1216221	4130	10/4/2006	1	283.81	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	SEMI TOW	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1222350	4457	10/22/2006	1	283.23	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1252369	2819	7/5/2007	1	283.22	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT	MEDIAN BARRIER	IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	SEMI TOW	STRGHT	N to S	NONE				
1269727	5256	11/29/2007	1	283.65	PACIFIC HY I-5	SB ENFR WLSNVL RD		SW	STRGHT	S-STRGHT	SS-O	PDO	RAIN	WET	DUSK		IMPROPER OVERTAKE	UNKNOWN	STRGHT	SW to NE	NONE	PSNGR CAR	STRGHT	SW to NE	NONE				
1284763	1445	4/14/2008	1	284.35	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	MECHANICAL DEFECT												
1294900	2576	7/3/2008	1	283.86	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1295080	2802	7/23/2008	1	283.68	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	MEDIAN BARRIER	FOLLOW TOO CLOSE												
1300880	3823	10/8/2008	1	283.38	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND												
1301370	4202	11/5/2008	1	283.65	PACIFIC HY I-5	SB ENFR WLSNVL RD		NW	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1301372	4203	11/5/2008	1	283.67	PACIFIC HY I-5	SB ENFR WLSNVL RD		NW	INTER	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS	FORCED BY IMPACT	INATTENTION												
1308254	5094	12/26/2008	1	283.63	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	OTH	NCOL	PDO	CLEAR	ICE	DAWN	VEH TOWED/TOWING	TOO FAST FOR COND												
1301519	5156	12/28/2008	1	283.51	PACIFIC HY I-5	SB ENFR WLSNVL RD		UN	TRANS	OTH	NCOL	FAT	CLOUDY	WET	DARK-NO ST LIGHTS	JACKKNIFE	SPEEDING												
1314816	32	1/5/2009	1	283.77	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	CLOUDY	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1334802	2436	7/1/2009	1	283.5	PACIFIC HY I-5	SB ENFR WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1339200	2984	8/14/2009	1	283.67	PACIFIC HY I-5	SB ENFR WLSNVL RD		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD												
1339375	3082	8/18/2009	1	283.66	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	UNKNOWI	UNKNOWN	DAYLIGHT		FOLLOW TOO CLOSE												
1339321	3065	8/20/2009	1	283.56	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-ST LIGHTS	FORCED BY IMPACT	FOLLOW TOO CLOSE												
1343628	3449	9/14/2009	1	283.66	PACIFIC HY I-5	SB ENFR WLSNVL RD		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD												
1351925	4550	11/25/2009	1	283.67	PACIFIC HY I-5	SB ENFR WLSNVL RD		NW	INTER	S-STRGHT	REAR	PDO	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE												
1361707	481	2/6/2010	1	283.38	PACIFIC HY I-5	SB ENFR WLSNVL RD		UN	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	GUARDRAIL	PHANTOM VEHICLE												
1372066	1937	6/7/2010	1	283.37	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	FIX OBJ	FIX	PDO	CLOUDY	WET	DARK-ST LIGHTS	WIRE BARRIER	FATIGUE												
1375220	2368	7/9/2010	1	283.85	PACIFIC HY I-5	SB ENFR WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1381648	3024	8/27/2010	1	283.56	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	S-STRGHT	OTH	INJ	CLEAR	DRY	DAYLIGHT	WHEEL CAME OFF	TIRE FAILURE												
1386764	3462	9/24/2010	1	283.27	PACIFIC HY I-5	SB ENFR WLSNVL RD		S	STRGHT	FIX OBJ	FIX	INJ	RAIN	WET	DAYLIGHT	MEDIAN BARRIER	TOO FAST FOR COND												
1188780	835	2/10/2006	1	286.4	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				

General Data			Highway		Street Names		From Intersection		Overall								Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1193932	1955	4/7/2006	1	286.25	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	GRADE	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	SLOW DN				
1213213	83472	8/21/2006	1	286.43	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	GRADE	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	SEMI TOW	STOP	N to S	STOPPED				
1217041	6314	10/24/2006	1	286.28	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	GRADE	S-STRGHT	SS-O	INJ	CLEAR	DRY	DARK-ST LIGHTS	SUBSEQ OVERTURN	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	N to S	AVOIDING	PSNGR CAR	STRGHT	N to S	NONE				
1217046	6562	11/2/2006	1	286.44	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	GRADE	S-STRGHT	REAR	PDO	RAIN	WET	DARK-ST LIGHTS	SLIPPERY SURFACE	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	SKIDDED	PSNGR CAR	STRGHT	N to S	SLOW DN				
1233646	1121	2/22/2007	1	286.46	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	GRADE	S-STRGHT	REAR	INJ	RAIN	WET	DAYLIGHT	VEH TOWED/TOWING	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	SEMI TOW	STRGHT	N to S	NONE				
1232267	1188	2/27/2007	1	286	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	STRGHT	S-STRGHT	SS-O	INJ	CLOUDY	DRY	DARK-ST LIGHTS		IMPROPER LANE CHANGE	SEMI TOW	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1246720	3797	7/4/2007	1	286.4	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DARK-ST LIGHTS	CUT SLOPE/DITCH	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	PREV COL				
1246721	3818	7/5/2007	1	286.4	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1252535	82941	7/13/2007	1	286.37	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	GRADE	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		SPEEDING	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1250276	5007	8/31/2007	1	999.99	PACIFIC HY I-5	SB EX BEAV-TUAL C1		UN	GRADE	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1268736	7799	12/19/2007	1	286.28	PACIFIC HY I-5	SB EX BEAV-TUAL C1		S	GRADE	S-STRGHT	SS-O	INJ	RAIN	WET	DUSK		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1308284	85152	12/31/2008	1	286.46	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	GRADE	S-1STOP	REAR	PDO	RAIN	WET	DARK-ST LIGHTS		FOLLOW TOO CLOSE												
1335133	82568	7/11/2009	1	286.58	PACIFIC HY I-5	SB EX BEAV-TUAL C1		SW	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CUT SLOPE/DITCH	CARELESS												
1352149	84897	12/18/2009	1	287	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1388625	83595	8/27/2010	1	286.9	PACIFIC HY I-5	SB EX BEAV-TUAL C1		UN	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	UNKNOWN	DAYLIGHT		PHANTOM VEHICLE												
1397919	6275	11/11/2010	1	286.47	PACIFIC HY I-5	SB EX BEAV-TUAL C1		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1191369	325	1/22/2006	1	284.3	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	DRY	DARK-ST LIGHTS	CUT SLOPE/DITCH	INATTENTION	PSNGR CAR	STRGHT	N to S	NONE								
1201514	1992	5/12/2006	1	284.1	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	SEMI TOW	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1213343	3291	8/9/2006	1	284	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1216220	4123	10/4/2006	1	284.89	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1222918	4353	10/17/2006	1	285.3	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	FATIGUE	PSNGR CAR	STRGHT	N to S	NONE								
1226704	4783	11/6/2006	1	284.5	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	SKIDDED	PSNGR CAR	STRGHT	N to S	SLOW DN				
1226701	5340	12/10/2006	1	284	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DARK-ST LIGHTS	CUT SLOPE/DITCH	DEFECTIVE STEERING	PSNGR CAR	STRGHT	N to S	NONE								
1228393	758	2/18/2007	1	284.38	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	PHANTOM VEHICLE	PSNGR CAR	STRGHT	N to S	AVOIDING								
1246881	1933	5/11/2007	1	284.38	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	AVOIDING								
1246882	2032	5/18/2007	1	284.56	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1246880	2400	6/6/2007	1	284.08	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	OTH OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	FOREIGN OBJECT	OTHER	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1247040	2621	6/22/2007	1	285	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1253783	3713	8/28/2007	1	284.1	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	SLOW DN				
1269777	4865	11/2/2007	1	284.88	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-OTHER	TURN	INJ	CLEAR	DRY	DARK-ST LIGHTS		RECKLESS	PSNGR CAR	U-TURN	N to N	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1269724	5095	11/20/2007	1	283.88	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1274782	114	1/7/2008	1	283.86	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE												
1281530	881	3/2/2008	1	284.13	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	FOG	DRY	DAWN	WIRE BARRIER	OTHER												
1281569	954	3/7/2008	1	284.16	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	FENCE/BUILDING	CARELESS												
1287870	1832	5/11/2008	1	284.82	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT	PHANTOM VEH	PHANTOM VEHICLE												
1288337	2007	5/27/2008	1	284.87	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAYLIGHT	FENCE/BUILDING	OTHR IMPROPER DRIVING												
1294887	2560	7/8/2008	1	284.38	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CUT SLOPE/DITCH	FATIGUE												
1294910	2646	7/13/2008	1	284.88	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	OTH	NCOL	INJ	CLEAR	DRY	DAYLIGHT	FELL/JUMPED MV	OTHR IMPROPER DRIVING												
1319972	537	2/6/2009	1	284.77	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-STRGHT	REAR	INJ	CLOUDY	DRY	DARK-ST LIGHTS	WIRE BARRIER	IMPROPER LANE CHANGE												
1327674	1654	5/2/2009	1	284.81	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		TOO FAST FOR COND												
1327775	1757	5/14/2009	1	284	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT	TIRE FAILURE	TIRE FAILURE												
1328028	1906	5/25/2009	1	284.88	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	OTH	PDO	CLEAR	DRY	DAYLIGHT	WHEEL CAME OFF	OTHER												
1334995	2636	7/19/2009	1	285.64	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	CUT SLOPE/DITCH	RECKLESS												
1335075	2763	7/29/2009	1	285.07	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1334877	2807	7/31/2009	1	284.57	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE												
1339411	3088	8/19/2009	1	284	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1339355	3070	8/20/2009	1	284.34	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DARK-ST LIGHTS		IMPROPER LANE CHANGE												
1343267	3323	9/4/2009	1	285.01	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1343540	3417	9/11/2009	1	285	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE												
1360087	98	1/10/2010	1	285	PACIFIC HY I-5	SB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DARK-ST LIGHTS		FOLLOW TOO CLOSE												
1360251	142	1/14/2010	1	285.81	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	GUARDRAIL	PHANTOM VEHICLE												
1360550	173	1/17/2010	1	285	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND												
1376271	2628	7/28/2010	1	284	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1378271	83749	7/30/2010	1	284.68	PACIFIC HY I-5	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT	WIRE BARRIER	IMPROPER LANE CHANGE												
1380028	2920	8/19/2010	1	283.89	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1384970	3304	9/15/2010	1	284.85	PACIFIC HY I-5	SB EXTO WLSNVL RD		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND												
1397728	3286	9/14/2010			REBEKAH ST	JESSICA ST		10 NE	STRGHT	OTH OBJ	FIX	PDO	CLEAR	DRY	DARK-NO ST LIGHTS	MEDIAN BARRIER	DROVE LEFT OF CENTER	PSNGR CAR	STRGHT	SW to NE	NONE								
1194588	1718	4/28/2006			S OF TOWN CENTER LP W	SW PARKWAY AVE		500 SW	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DARK-NO ST LIGHTS	TREE/STUMP	IMPROPER TURN	PSNGR CAR	TURN-L	SE to SW	EXIT DWY								
1236808	1009	3/6/2007			SERENITY WAY	EVERGREEN DR		100 S	STRGHT	PRKD MV	REAR	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	PRKD-P	S to N	PAR PARK				
1190686	1129	3/19/2006			SERENITY WAY	TRANQUIL PL		0 E	INTER	PRKD MV	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		TOO FAST FOR COND	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	PRKD-P	W to E	PAR PARK				
1320369	290	1/23/2009			SW 95TH AVE	BARBER ST		0 CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	OTH BUS	TURN-L	N to E	GO A/STOP	PSNGR CAR	STRGHT	E to W	NONE				
1188460	996	3/9/2006			SW 95TH AVE	FREEMAN DR		100 N	STRGHT	S-1STOP	REAR	INJ	SNOW	SNOW	DAWN	SLIPPERY SURFACE	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1206169	3511	8/24/2006			SW 95TH AVE	FREEMAN DR		100 N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1310907	4995	12/19/2008			SW 95TH AVE	FREEMAN DR		200 S	STRGHT	S-1STOP	REAR	INJ	SNOW	SNOW	DARK-NO ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1399384	4681	12/8/2010			SW 95TH AVE	FREEMAN DR		40 N	STRGHT	S-STRGHT	SS-O	PDO	RAIN	WET	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1251481	3142	7/26/2007			SW 95TH AVE	NIKE ACCESS RD		0 CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	UNKNOWN		NO YIELD	SEMI TOW	TURN-R	N to W	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1244415	1988	5/15/2007			SW 95TH AVE	RIDDER RD		500 W	ALLEY	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	W to E	OTHER	PSNGR CAR	STRGHT	W to E	SLOW DN				
1246210	2444	6/12/2007			SW 95TH AVE	RIDDER RD		50 E	STRGHT	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	SEMI TOW	BACK	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1260038	4420	10/10/2007			SW 95TH AVE	RIDDER RD		100 E	STRGHT	S-1STOP	REAR	PDO	CLOUDY	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1231760	684	1/29/2007			SW 95TH AVE	SW BEAV-TUALATIN HY		0 W	INTER	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1182946	80070	1/4/2006			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		PASSED STOP SIGN	PSNGR CAR	STRGHT	W to E	OTHER	PSNGR CAR	TURN-L	E to S	NONE				
1198893	3017	5/24/2006			SW 95TH AVE	SW COMMERCE CIR		S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1225411	7497	12/8/2006			SW 95TH AVE	SW COMMERCE CIR		300 S	ALLEY	ANGL-OTH	TURN	INJ	CLOUDY	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	EXIT DWY				
1255834	82994	7/16/2007			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1253796	83555	8/22/2007			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	SKIDDED	PSNGR CAR	TURN-L	W to N	GO A/STOP				
1273515	387	1/16/2008			SW 95TH AVE	SW COMMERCE CIR		0 N	INTER	FIX OBJ	FIX	INJ	CLEAR	WET	DARK-NO ST LIGHTS	TREE/STUMP	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE								
1272525	80302	1/22/2008			SW 95TH AVE	SW COMMERCE CIR		0 E	INTER	S-OTHER	SS-O	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER OVERTAKE	FARM TRCTR	TURN-R	S to E	NONE	PSNGR CAR	TURN-R	S to E	PASSING				
1280640	1484	3/17/2008			SW 95TH AVE	SW COMMERCE CIR		300 S	ALLEY	ANGL-STP	TURN	INJ	RAIN	WET	DARK-NO ST LIGHTS		IMPROPER TURN	PSNGR CAR	TURN-R	E to N	EXIT DWY	PSNGR CAR	STOP	N to S	STP/L TRN				
1286116	81823	5/9/2008			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	GO A/STOP	PSNGR CAR	TURN-L	E to S	NONE				
1290413	3171	6/16/2008			SW 95TH AVE	SW COMMERCE CIR		250 S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1290235	82320	6/20/2008			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1291810	3541	7/3/2008			SW 95TH AVE	SW COMMERCE CIR		300 N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1324233	81054	4/2/2009			SW 95TH AVE	SW COMMERCE CIR		950 W	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	EXIT DWY	PSNGR CAR	STRGHT	E to W	NONE				
1336846	2720	6/10/2009			SW 95TH AVE	SW COMMERCE CIR		900 W	CURVE	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	ENT OFFRD	PSNGR CAR	STRGHT	W to E	NONE				
1394107	80357	2/3/2010			SW 95TH AVE	SW COMMERCE CIR		0 CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1365916	1445	3/29/2010			SW 95TH AVE	SW COMMERCE CIR		300 S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	SKIDDED	PSNGR CAR	STOP	S to N	STOPPED				
1375095	2946	6/16/2010			SW 95TH AVE	SW COMMERCE CIR		100 S	STRGHT	S-1STOP	REAR	INJ	UNKNOWN	UNKNOWN	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED	UNKNOWN	STOP	N to S	PREV COL
1233591	1049	2/20/2007			SW 95TH AVE	SW ROSE LN		0 N	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	PHANTOM VEH	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1239007	2466	5/3/2007			SW 95TH AVE	SW ROSE LN		0 N	INTER	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	TRUCK	BACK	S to N	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1288835	82169	6/10/2008			SW 95TH AVE	SW ROSE LN		100 N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	UNKNOWN	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED	UNKNOWN	STOP	N to S	PREV COL
1302968	5499	10/9/2008			SW 95TH AVE	SW ROSE LN		0 S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	UNKNOWN	STOP	S to N	STOPPED				
1331726	82577	7/14/2009			SW 95TH AVE	SW ROSE LN		100 N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	W to N	EXIT DWY				
1348230	4212	8/28/2009			SW 95TH AVE	SW ROSE LN		0 N	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1340000	6935	9/18/2009			SW 95TH AVE	SW ROSE LN		100 E	ALLEY	S-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER OVERTAKE	PSNGR CAR	STRGHT	W to E	PASSING	SEMI TOW	TURN-L	W to N	ENTR DWY				
1399864	85003	12/14/2010			SW 95TH AVE	SW ROSE LN		100 N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1319980	80847	3/4/2009			SW ARGYLE AVE	SW JACK BURNS BLVD		0 CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	GO A/STOP	PSNGR CAR	TURN-L	W to N	GO A/STOP				
1270768	4765	10/29/2007			SW ASH MEADOWS	SW ROGER BLVD		300 NE	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	SE to SW	EXIT DWY	PSNGR CAR	STRGHT	SW to NE	NONE				
1361602	80580	2/18/2010	141	12.56	SW BEAV-TUALATIN HY		1913	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		INATTENTION												

General Data			Highway		Street Names		From Intersection		Overall									Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1184446	80401	1/26/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		W	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1192047	1188	2/27/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-R	SE to NE	NONE				
1192617	81387	4/2/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS	TRAFFIC ISLAND	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-R	SW to E	OTHER				
1201927	81877	5/6/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1205033	4100	7/20/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1213439	83193	8/2/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	TURN	INJ	CLOUDY	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STP TURN				
1216501	84129	10/4/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	TURN-R	SW to SE	NONE	PSNGR CAR	TURN-R	SW to SE	STP TURN				
1222992	85395	12/13/2006	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1235134	80423	1/22/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1235139	80675	2/13/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		NW	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1235156	81094	3/13/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1233796	1991	4/11/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1247030	82366	6/10/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		CN	INTER	FIX OBJ	FIX	INJ	CLOUDY	DRY	DARK-NO ST LIGHTS	TRAFFIC ISLAND	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	SKIDDED								
1253979	83656	8/25/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	TURN-R	S to E	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1263471	84845	11/5/2007	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-OTHER	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1285525	81687	5/2/2008	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG												
1290971	82333	6/23/2008	141	13	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		S	GRADE	OTH OBJ	FIX	INJ	CLEAR	DRY	DAWN	OTHER EQUIPMENT	OTHER												
1320078	80744	2/21/2009	141	12.96	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		S	GRADE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1361631	80598	2/19/2010	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		OTHR IMPROPER DRIVING												
1372524	81957	6/9/2010	141	12.97	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		TOO FAST FOR COND												
1375975	82500	7/17/2010	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		SE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1398605	6811	12/6/2010	141	12.95	SW BEAV-TUALATIN HY	NB BEAV-TUALATIN HY		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG												
1243821	3117	6/4/2007	141	12.84	SW BEAV-TUALATIN HY	NB EF BEAV-TUAL C1		E	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	UNKNOWN	STOP	E to W	STOPPED				
1246197	3979	7/14/2007	141	12.93	SW BEAV-TUALATIN HY	NB EF BEAV-TUAL C1		W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	UNKNOWN	STRGHT	N to S	NONE				
1315365	80117	1/9/2009	141	12.87	SW BEAV-TUALATIN HY	NB EF BV-TUAL HY C2		E	BRIDGE	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1317695	443	1/26/2009	141	13.02	SW BEAV-TUALATIN HY	SB BEAV-TUALATIN HY		SE	CURVE	OTH	NCOL	PDO	CLEAR	DRY	DAYLIGHT	CELLPHONE-POLICE	OTHR IMPROPER DRIVING												
1184123	80138	1/8/2006	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1188614	80987	3/9/2006	1	286.71	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	CURVE	S-1STOP	REAR	PDO	SNOW	SNOW	DAWN		TOO FAST FOR COND	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1191299	81012	3/10/2006	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	SEMI TOW	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1222988	84684	11/2/2006	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-1TURN	TURN	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	TURN-R	NE to W	STP TURN				
1235133	80348	1/16/2007	1	286.63	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	GRADE	PRKD MV	SS-O	PDO	SNOW	ICE	DARK-NO ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	PRKD-P	NE to SW	PAR PARK				
1235158	81165	3/20/2007	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		CN	INTER	S-OTHER	REAR	INJ	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	IMPROPER TURN	SEMI TOW	TURN-R	NE to NW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1247028	82001	5/14/2007	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		INATTENTION	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1250973	5190	9/4/2007	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DUSK		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1267068	83838	9/4/2007	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1280076	1338	3/7/2008	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1294854	7261	5/30/2008	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1288122	82323	6/30/2008	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1291887	3578	7/6/2008	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1307848	84812	12/11/2008	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN												
1334488	2981	6/21/2009	141	12.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-OTHER	TURN	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1334876	82480	7/6/2009	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1331773	82586	7/14/2009	141	12.73	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1341007	3789	8/2/2009	1	286.59	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	CURVE	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	OTHER SIGN	OTHR IMPROPER DRIVING												
1360791	80214	1/18/2010	1	286.68	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	CURVE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	CARELESS												
1359048	310	1/20/2010	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-OTHER	TURN	INJ	RAIN	WET	DARK-NO ST LIGHTS		INATTENTION												
1364625	81172	4/9/2010	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1368605	81556	5/11/2010	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1374334	82269	7/1/2010	1	286.72	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	INTER	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS		TOO FAST FOR COND												
1376627	82673	8/2/2010	1	286.68	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1399500	6955	12/11/2010	1	286.62	SW BEAV-TUALATIN HY	SB EX BEAV-TUAL C1		N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	PHANTOM VEH	PHANTOM VEHICLE												
1183623	80302	1/19/2006	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	NW to SE	NONE	PSNGR CAR	TURN-L	W to NW	NONE				
1196519	81825	5/4/2006	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	SE to NW	NONE				
1208888	5047	8/31/2006	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		NW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	UNKNOWN	STRGHT	NW to SE	NONE	PSNGR CAR	STOP	NW to SE	STOPPED				
1219645	85480	12/19/2006			SW BEAV-TUALATIN HY	SW COMMERCE CIR	0	W	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1240619	81693	4/25/2007	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		N	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1259987	6616	11/1/2007			SW BEAV-TUALATIN HY	SW COMMERCE CIR		N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAWN		TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1268636	85552	12/13/2007	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1269357	85671	12/24/2007	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		SE	INTER	S-1STOP	REAR	PDO	CLEAR	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	STOP	SE to NW	STP/L TRN				
1303440	7315	8/15/2008	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		W	INTER	S-OTHER	TURN	INJ	CLEAR	DRY	DAYLIGHT	VEH TOWED/TOWING	IMPROPER TURN												
1315520	80172	1/14/2009	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD												
1320660	81122	3/27/2009	141	12.63	SW BEAV-TUALATIN HY	SW COMMERCE CIR		CN	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT	PEDALCYCLE INV	FOLLOW TOO CLOSE												
1350103	84167	11/4/2009	141	12.59	SW BEAV-TUALATIN HY	SW COMMERCE CIR		NW	STRGHT	S-STRGHT	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE												
1360594	80682	2/26/2010	141	12.61	SW BEAV-TUALATIN HY	SW COMMERCE CIR		NW	CURVE	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1366623	81371	4/28/2010			SW BEAV-TUALATIN HY	SW COMMERCE CIR	0	W	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1398292	84456	11/24/2010	141	12.59	SW BEAV-TUALATIN HY	SW COMMERCE CIR		NW	STRGHT	S-1STOP	REAR	PDO	CLOUDY	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1184122	80044	1/3/2006	141	999.99	SW BEAV-TUALATIN HY	SW DAY RD		S	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	SKIDDED	PSNGR CAR	STOP	N to S	STOPPED				
1236774	1918	4/10/2007			SW BEAV-TUALATIN HY	SW DAY RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	PSNGR CAR	STOP	W to E	PREV COL
1292652	3821	7/17/2008			SW BEAV-TUALATIN HY	SW DAY RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1363437	967	2/26/2010	141	12.46	SW BEAV-TUALATIN HY	SW DAY RD		N	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1386971	5010	9/23/2010			SW BEAV-TUALATIN HY	SW DAY RD	150	W	STRGHT	S-STRGHT	REAR	PDO	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND	UNKNOWN	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE	SCHL BUS	STRGHT	W to E	PREV COL
1387859	5086	9/23/2010			SW BEAV-TUALATIN HY	SW DAY RD	300	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	SCHL BUS	STOP	W to E	PREV COL
1396170	5506	10/15/2010	141	12.44	SW BEAV-TUALATIN HY	SW DAY RD		N	TRANS	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD												
1397664	6389	11/18/2010			SW BEAV-TUALATIN HY	SW DAY RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	WET	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1286482	1055	3/14/2008			SW BOONES BEND RD	SW CYPRESS POINT	20	E	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	N to W	EXIT DWY	UNKNOWN	STRGHT	E to W	NONE				
1293273	2794	7/23/2008			SW BOONES FERRY RD	4TH ST	100	NE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1398080	4334	11/17/2010			SW BOONES FERRY RD	BARBER ST	800	N	STRGHT	O-STRGHT	SS-M	INJ	RAIN	WET	DUSK		FATIGUE	PSNGR CAR	STRGHT	N to S	NONE	TRUCK	STRGHT	S to N	NONE				
1228380	818	2/26/2007			SW BOONES FERRY RD	BOONES-BOECKMAN CN	75	S	ALLEY	PRKD MV	TURN	PDO	SNOW	WET	DARK-ST LIGHTS		TOO FAST FOR COND	PSNGR CAR	TURN-R	S to E	ENTR DWY	PSNGR CAR	PRKD-P	E to W	PAR PARK				
1249640	2936	7/13/2007			SW BOONES FERRY RD	BOONES-BOECKMAN CN	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1281256	870	3/4/2008			SW BOONES FERRY RD	BOONES-BOECKMAN CN	50	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STP/L TRN				
1282829	1395	4/8/2008			SW BOONES FERRY RD	BOONES-BOECKMAN CN	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	N to E	GO A/STOP				
1370631	1661	5/17/2010			SW BOONES FERRY RD	BOONES-BOECKMAN CN	142	S	STRGHT	O-STRGHT	HEAD	INJ	RAIN	WET	DAWN		CARELESS	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1396643	4105	11/5/2010			SW BOONES FERRY RD	FREEMAN RD	500	N	ALLEY	ANGL-OTH	TURN	INJ	CLOUDY	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	MOTRHOME	TURN-L	W to N	EXIT DWY				
1376355	82636	7/29/2010			SW BURNS WAY	SW CANYON CREEK RD	300	W	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	S to W	EXIT DWY	PSNGR CAR	STRGHT	W to E	NONE				
1399833	4785	12/11/2010			SW CHURCHILL	SW WILLAMETTE WAY W	85	W	ALLEY	PRKD MV	BACK	PDO	RAIN	WET	DARK-NO ST LIGHTS		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	N to S	EXIT DWY	PSNGR CAR	PRKD-P	W to E	PAR PARK				
1272358	69	1/4/2008			SW COURTSIDE DR	TENNIS CT	0	CN	INTER	ANGL-OTH	ANGL	INJ	RAIN	WET	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1359550	407	2/5/2010			SW DAY BREAK ST	SW MORNINGSIDE AVE	47	W	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DARK-NO ST LIGHTS	TREE/STUMP	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE								
1212248	84548	10/27/2006			SW DAY RD	SW GRAHAMS FERRY RD	0	CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	UNKNOWN		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	EXIT DWY	PSNGR CAR	STRGHT	S to N	NONE				
1214696	6433	10/27/2006			SW DAY RD	SW GRAHAMS FERRY RD	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1245314	3611	6/25/2007			SW DAY RD	SW GRAHAMS FERRY RD	0	N	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STP/L TRN				
1302581	7319	8/20/2008			SW DAY RD	SW GRAHAMS FERRY RD	0	E	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1309592	6860	12/15/2008			SW DAY RD	SW GRAHAMS FERRY RD	0	E	INTER	S-1STOP	REAR	INJ	SNOW	ICE	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	SKIDDED	PSNGR CAR	STOP	E to W	STOPPED				
1357128	259	1/19/2010			SW DAY RD	SW GRAHAMS FERRY RD	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	EXIT DWY				
1399456	84348	11/18/2010			SW GRAHAMS FERRY RD	ARBOR LAKE DR	1120	W	ALLEY	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		DROVE LEFT OF CENTER	PSNGR CAR	TURN-R	S to E	EXIT DWY	PSNGR CAR	STRGHT	E to W	NONE				
1184237	80470	1/30/2006			SW GWEN DR	SW JACK BURNS BLVD	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	S to W	EXIT DWY	PSNGR CAR	STRGHT	W to E	NONE				
1198678	82181	5/22/2006			SW GWEN DR	SW JACK BURNS BLVD	0	N	INTER	S-OTHER	TURN	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	TURN-R	N to W	OTHER	PSNGR CAR	TURN-L	N to E	STP TURN				
1201568	82522	6/18/2006			SW GWEN DR	SW JACK BURNS BLVD	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLOUDY	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	S to N	GO A/STOP				
1282697	1354	4/9/2008			SW MEMORIAL DR	JESSICA ST	600	NE	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	WET	DAYLIGHT	FENCE/BUILDING	TOO FAST FOR COND	PSNGR CAR	STRGHT	SW to NE	NONE								

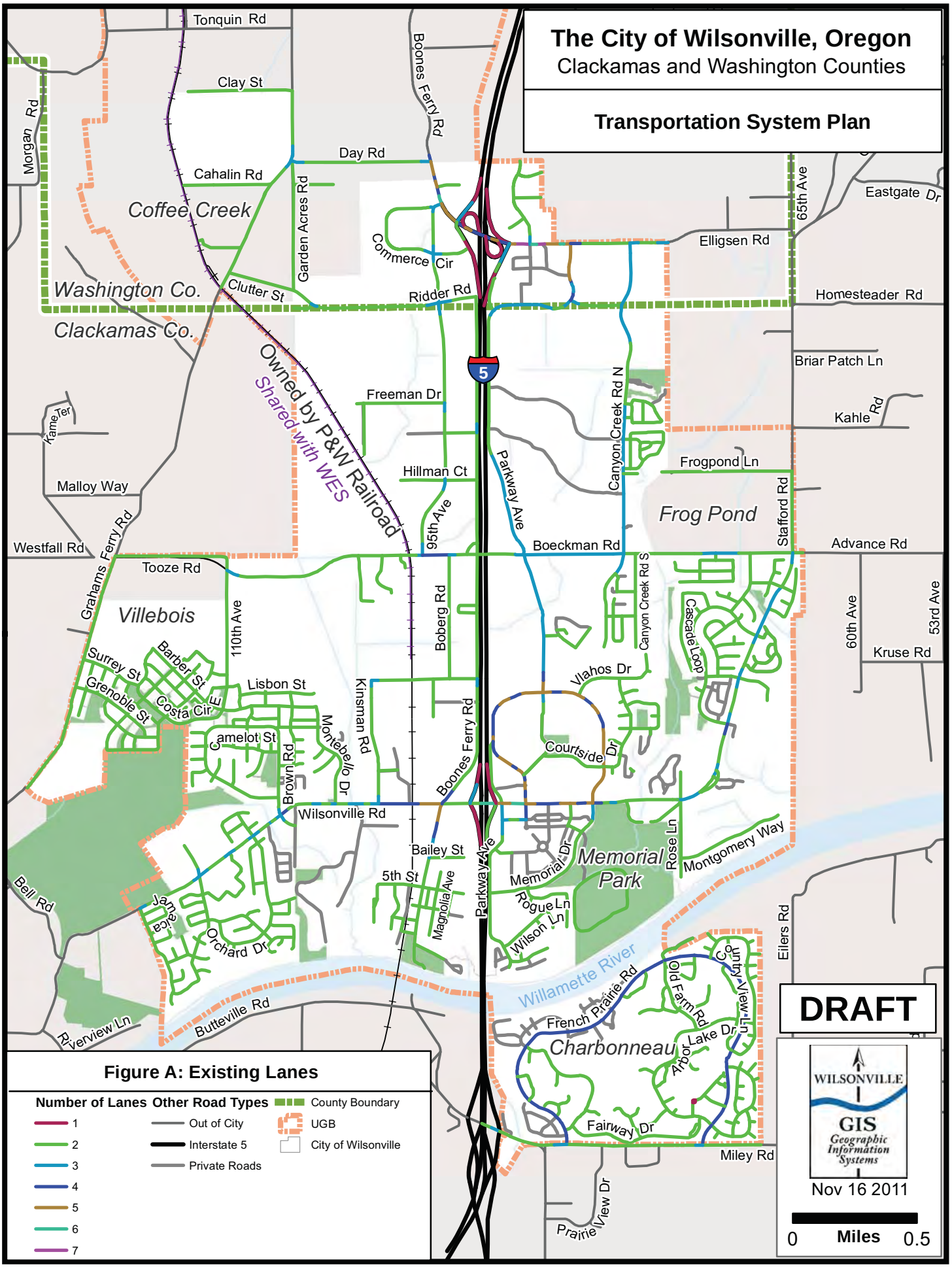
General Data			Highway		Street Names		From Intersection		Overall									Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1286253	1875	5/16/2008			SW MEMORIAL DR	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		PASSED STOP SIGN	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	N to S	NONE							
1267297	280	1/19/2007			SW METOLIUS LN	SW PARKWAY AVE	20	E	STRGHT	FIX OBJ	FIX	PDO	CLEAR	ICE	DAYLIGHT	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE								
1245027	2147	5/24/2007			SW PARKWAY AVE	BOECKMAN RD	100	W	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAWN		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	ENTR DWY							
1264500	5003	11/13/2007			SW PARKWAY AVE	BOECKMAN RD (Mentor Dwy)	300	N	CURVE	FIX OBJ	FIX	PDO	FOG	WET	DARK-NO ST LIGHTS	HYDRANT	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE								
1339102	3297	9/3/2009			SW PARKWAY AVE	BOECKMAN RD	60	SE	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	STOP	SE to NW	STOPPED							
1339549	3410	9/10/2009			SW PARKWAY AVE	BOECKMAN RD (In-Focus Dwy)	1320	N	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	FENCE/BUILDING	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	AVOIDING								
1343914	3778	10/6/2009			SW PARKWAY AVE	BOECKMAN RD (Gillespie Dwy)	1000	NW	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT	CURB	NO YIELD	PSNGR CAR	TURN-L	E to SE	EXIT DWY	PSNGR CAR	STRGHT	SE to NW	NONE							
1369464	1550	5/10/2010			SW PARKWAY AVE	BOECKMAN RD (In-Focus Dwy)	1168	N	ALLEY	ANGL-STP	TURN	INJ	RAIN	WET	DAYLIGHT		IMPROPER TURN	OTH BUS	TURN-L	N to E	ENTR DWY	PSNGR CAR	STOP	E to W	STOPPED							
1372006	1977	6/10/2010			SW PARKWAY AVE	BOECKMAN RD (Mentor Dwy)	150	NW	CURVE	S-OTHER	REAR	PDO	CLEAR	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	NW to SE	NONE	PSNGR CAR	STRGHT	NW to SE	SLOW DN							
1295640	2980	8/8/2008			SW PARKWAY AVE	N OF TOWN CENTER LP W	1000	N	STRGHT	S-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	BACK	S to S	NONE							
1310759	4948	12/16/2008			SW PARKWAY AVE	N OF TOWN CENTER LP W	300	N	STRGHT	O-1STOP	HEAD	PDO	SNOW	ICE	DAYLIGHT	SLIPPERY SURFACE	OTHER	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1200120	2109	5/23/2006			SW PARKWAY AVE	PARKWAY LP	30	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED	PSNGR CAR	STOP	N to S	STOPPED				
1257375	4144	9/25/2007			SW PARKWAY AVE	SW ASH MEADOWS	100	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED							
1354848	2835	8/3/2009			SW PARKWAY AVE	SW MAIN ST	100	S	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	POLE-UTILITY	CARELESS	PSNGR CAR	STRGHT	S to N	NONE								
1371131	1736	5/24/2010			SW PARKWAY AVE	SW PRINTER PKY	826	S	ALLEY	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STP/L TRN							
1305100	83604	9/21/2008			SW PARKWAY AVE	SW SALISH LN	75	N	GRADE	FIX OBJ	FIX	PDO	CLOUDY	DRY	DAYLIGHT	OTHER WALL	MECHANICAL DEFECT	PSNGR CAR	STRGHT	E to W	EXIT DWY								
1312962	2775	7/22/2008			SW PARKWAY AVE	SW WILSON LN	150	N	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CURB	SPEEDING	PSNGR CAR	STRGHT	N to S	NONE								
1222975	7810	12/18/2006			SW PARKWAY CENTER DR	SW BURNS WAY	0	W	INTER	ANGL-OTH	TURN	PDO	UNKNOWI	ICE	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	TURN-R	N to W	ENTR DWY	PSNGR CAR	STOP	W to E	STOPPED							
1235129	80224	1/11/2007			SW PARKWAY CENTER DR	SW BURNS WAY	200	S	CURVE	FIX OBJ	FIX	INJ	CLEAR	ICE	DAYLIGHT	TREE/STUMP	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE								
1236739	1759	3/29/2007			SW PARKWAY CENTER DR	SW BURNS WAY	300	S	CURVE	PRKD MV	BACK	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	N to S	PAR PARK	PSNGR CAR	PRKD-P	S to N	PAR PARK							
1392063	3933	8/8/2010			SW PARKWAY CENTER DR	SW HEATHER PL	0	N	INTER	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	OTHER	PSNGR CAR	TURN-L	W to N	NONE								
1399857	85059	11/24/2010			SW PARKWAY CENTER DR	SW HEATHER PL	0	CN	INTER	S-OTHER	TURN	PDO	CLOUDY	WET	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	U-TURN	E to E	NONE							
1269370	87899	12/20/2007			SW PARKWAY CENTER DR	SW PARKWAY AVE	250	SW	CURVE	FIX OBJ	FIX	PDO	CLOUDY	DRY	DARK-NO ST LIGHTS	PHANTOM VEH	PHANTOM VEHICLE	PSNGR CAR	STRGHT	NE to SW	AVOIDING								
1326387	1831	5/19/2009			SW PARKWAY CENTER DR	SW PARKWAY AVE	20	NE	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	HYDRANT	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	NE to SW	NONE								
1339086	3287	9/2/2009			SW PARKWAY CENTER DR	SW PARKWAY AVE	0	SW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STP/L TRN							
1356770	200	1/19/2010			SW PARKWAY CENTER DR	SW PARKWAY AVE	2540	N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	EXIT DWY							
1398881	4648	11/19/2010			SW PARKWAY CENTER DR	SW PARKWAY AVE	50	SW	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED							
1376521	2602	7/27/2010			SW PARKWAY CT	S OF TOWN CENTER LP W	500	S	STRGHT	O-STRGHT	SS-M	PDO	CLEAR	DRY	DAYLIGHT	ANML INTERFERED	INATTENTION	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	N to S	NONE							
1278272	698	2/14/2008			SW PRINTER PKY	SW PARKWAY AVE	1000	E	CURVE	O-1STOP	SS-M	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	OTH BUS	STRGHT	E to W	NONE	PSNGR CAR	STOP	W to E	STOPPED							
1355449	225	1/17/2009			SW ROGUE LN	SW HOLLY LN	0	E	INTER	PRKD MV	REAR	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	S to E	NONE	PSNGR CAR	PRKD-P	W to E	PAR PARK							
1286498	1668	4/30/2008			SW ROGUE LN	SW MEMORIAL DR	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	GO A/STOP	PSNGR CAR	TURN-L	E to S	GO A/STOP							
1219104	85267	12/1/2006			SW SCOTT LN	SW JACK BURNS BLVD	50	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		INATTENTION	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED							
1353292	4384	11/13/2009			SW SURREY ST	SW COSTA CIRCLE	30	E	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	POLE-UTILITY	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE								
1354608	4611	11/27/2009			SW SURREY ST	SW PALERMO ST	100	W	STRGHT	PRKD MV	SS-O	PDO	CLEAR	DRY	DAWN		OTHER	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	PRKD-P	W to E	PAR PARK							
1381521	3010	8/25/2010			SW TOWN CENTER LP E			UN	STRGHT	S-STRGHT	SS-O	PDO	UNKNOWI	UNKNOWN	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	UN to UN	NONE	UNKNOWN	STRGHT	UN to UN	NONE							
1183848	236	1/14/2006			SW TOWN CENTER LP E	BROWN RD	200	N	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED							
1190685	1110	3/16/2006			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	GO A/STOP							
1240201	569	2/3/2007			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1245030	2154	5/24/2007			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1278829	841	2/27/2008			SW TOWN CENTER LP E	SW COURTSIDE DR	0	E	INTER	PRKD MV	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		IMPROPER TURN	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	PRKD-P	W to E	PAR PARK							
1304251	3422	9/9/2008			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1313065	4690	12/3/2008			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	GO A/STOP	PSNGR CAR	STRGHT	S to N	NONE							
1326239	1787	5/15/2009			SW TOWN CENTER LP E	SW COURTSIDE DR	1320	E	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DUSK	ANML INTERFERED	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE								
1329532	2192	6/14/2009			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	NONE							
1371243	1761	5/21/2010			SW TOWN CENTER LP E	SW COURTSIDE DR	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		CARELESS	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1212183	4443	10/21/2006			SW TOWN CENTER LP E	SW PARKWAY AVE	20	E	STRGHT	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	NONE								
1246217	2465	6/14/2007			SW TOWN CENTER LP E	SW PARKWAY AVE	40	N	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CURB	IMPROPER TURN	PSNGR CAR	TURN-R	E to N	NONE								
1272614	198	1/11/2008			SW TOWN CENTER LP E	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER TURN	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1283209	1568	4/23/2008			SW TOWN CENTER LP E	SW PARKWAY AVE	0	CN	INTER	O-1TURN	TURN	INJ	CLOUDY	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE							
1286250	1873	5/16/2008			SW TOWN CENTER LP E	SW PARKWAY AVE	50	E	STRGHT	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	BACK	S to E	EXIT DWY	PSNGR CAR	STRGHT	E to W	NONE							
1310775	4953	12/16/2008			SW TOWN CENTER LP E	SW PARKWAY AVE	150	W	STRGHT	S-1STOP	REAR	PDO	SNOW	ICE	DARK-NO ST LIGHTS	SLIPPERY SURFACE	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	PSNGR CAR	STOP	W to E	STOPPED				
1310746	4941	12/16/2008			SW TOWN CENTER LP E	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	ICE	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1194573	1695	4/26/2006			SW TOWN CENTER LP E	VLAHOS DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1313050	3406	9/8/2008			SW WILLOW CREEK DR	SW LANDOVER DR	0	S	INTER	O-1STOP	HEAD	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		DROVE LEFT OF CENTER	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	S to N	STP/L TRN							
1286495	1361	4/9/2008			SW YOSEMITE ST	SW CAMELOT ST	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	GO A/STOP	PSNGR CAR	STRGHT	E to W	NONE							
1199238	1786	5/2/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	W to N	GO A/STOP							
1196818	1943	5/8/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	NONE							
1203286	3058	7/25/2006			TOWN CENTER LP W	CITIZENS DR	100	S	STRGHT	BIKE	OTH	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE								
1207988	3665	9/2/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	BACK	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED							
1208097	3716	9/6/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT	POLE-UTILITY	NO YIELD	PSNGR CAR	STRGHT	E to W	STP TURN	PSNGR CAR	STRGHT	N to S	NONE							
1214360	4622	11/3/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	TURN	INJ	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	ENTR DWY							
1221488	5683	12/31/2006			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	S to N	NONE							
1237667	604	2/5/2007			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	N to S	NONE							
1240432	1646	4/21/2007			TOWN CENTER LP W	CITIZENS DR	100	N	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED							
1253659	3451	8/13/2007			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	S to W	NONE								
1263228	4605	10/20/2007			TOWN CENTER LP W	CITIZENS DR	500	S	CURVE	FIX OBJ	FIX	PDO	RAIN	WET	DAYLIGHT	MEDIAN BARRIER	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE								
1286494	1950	5/21/2008			TOWN CENTER LP W	CITIZENS DR	150	S	STRGHT	ANGL-OTH	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	S to W	EXIT DWY	PSNGR CAR	STRGHT	E to W	NONE							
1292866	2699	7/16/2008			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1317526	587	2/12/2009			TOWN CENTER LP W	CITIZENS DR	150	N	STRGHT	S-STRGHT	SS-O	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	STRGHT	W to E	NONE							
1355657	5061	12/28/2009			TOWN CENTER LP W	CITIZENS DR	113	N	STRGHT	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	E to S	EXIT DWY							
1381530	3011	8/25/2010			TOWN CENTER LP W	CITIZENS DR	0	E	INTER	ANGL-STP	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	N to E	ENTR DWY	PSNGR CAR	STOP	E to W	STOPPED							
1397231	4263	11/14/2010			TOWN CENTER LP W	CITIZENS DR	0	CN	INTER	ANGL-OTH	TURN	INJ	CLOUDY	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	E to S	EXIT DWY	PSNGR CAR	STRGHT	S to N	NONE							
1276627	2808	2/8/2008			TOWN CENTER LP W	DWY W OF SW PARKWAY AVE	150	W	ALLEY	S-1TURN	TURN	PDO	CLEAR	WET	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	E to N	ENTR DWY	PSNGR CAR	STRGHT	E to W	NONE							
1188456	985	3/9/2006			TOWN CENTER LP W	PARK PL	0	CN	INTER	O-1TURN	TURN	INJ	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	N to S	NONE							
1189209	970	3/9/2006			TOWN CENTER LP W	PARK PL	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	N to E	NONE							
1303290	3221	8/23/2008			TOWN CENTER LP W	PARK PL	200	SE	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	NW to SE	NONE	PSNGR CAR	TURN-R	SW to SE	EXIT DWY							
1310780	4954	12/16/2008			TOWN CENTER LP W	PARK PL	300	NW	STRGHT	S-1STOP	REAR	PDO	CLEAR	ICE	DAYLIGHT	SLIPPERY SURFACE	OTHER	PSNGR CAR	STRGHT	NW to SE	NONE	PSNGR CAR	STOP	NW to SE	STOPPED	PSNGR CAR	STOP	NW to SE	PREV COL				
1355821	4937	12/17/2009			TOWN CENTER LP W	PARK PL	400	NW	ALLEY	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	TURN-L	NE to SE	EXIT DWY							
1356153	14	1/2/2010			TOWN CENTER LP W	PARK PL	411	NW	ALLEY	ANGL-OTH	TURN	INJ	CLOUDY	WET	DARK-ST LIGHTS	VEH OBSCURE VIEW	NO YIELD	PSNGR CAR	TURN-L	NE to SE	EXIT DWY	PSNGR CAR	STRGHT	SE to NW	NONE							
1356256	47	1/5/2010			TOWN CENTER LP W	PARK PL	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	NE to SE	NONE	PSNGR CAR	STRGHT	SE to NW	NONE							
1272610	345	1/21/2008			TOWN CENTER LP W	SW MAIN ST	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	S to N	GO A/STOP	PSNGR CAR	TURN-L	W to N	GO A/STOP							
1293924	2663	7/14/2008			TOWN CENTER LP W	SW MAIN ST	0	E	INTER	BIKE	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE								
1315458	157	1/11/2009			TOWN CENTER LP W	SW MAIN ST	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1329076	2078	6/6/2009			TOWN CENTER LP W	SW MAIN ST	100	W	STRGHT	PED	PED	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE								
1183867	296	1/19/2006			TOWN CENTER LP W	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STRGHT	NW to SE	NONE							
1184325	408	1/26/2006			TOWN CENTER LP W	SW PARKWAY AVE	200	NE	STRGHT	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	SE to SW	NONE	PSNGR CAR	STRGHT	SW to NE	NONE							
1184573	595	2/7/2006			TOWN CENTER LP W	SW PARKWAY AVE	50	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED							
1249639	2932	7/13/2007			TOWN CENTER LP W	SW PARKWAY AVE	100	NW	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	TURN-L	NE to SE	NONE							
1257360	3971	9/11/2007			TOWN CENTER LP W	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE							
1309135	4623	11/30/2008			TOWN CENTER LP W	SW PARKWAY AVE	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE							
1356986	282	1/22/2010			TOWN CENTER LP W	SW PARKWAY AVE	0	CN	INTER	O-1TURN	TURN	INJ	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE							
1375839	2441	7/14/2010			TOWN CENTER LP W	SW PARKWAY AVE	200	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE							
1376493	2657	7/30/2010			TOWN CENTER LP W	SW PARKWAY AVE	100	W	ALLEY	BIKE	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	EXIT DWY								
1383776	3205	9/7/2010			TOWN CENTER LP W	SW PARKWAY AVE	37	S	ALLEY	ANGL-OTH	TURN	PDO	CLOUDY	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	EXIT DWY	PSNGR CAR	STRGHT	S to N	NONE							
1286492	1286	4/3/2008			TOWN CENTER LP W	SW PARKWAY CT		W	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CURB	OTHR IMPROPER DRIVING	MTRCYCLE	STRGHT	W to E	NONE								
1397870	4250	11/13/2010			VILLEBOIS DR S	BARBER ST	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DUSK		NO YIELD	PSNGR CAR	STRGHT	SE to NW	NONE	PSNGR CAR	TURN-L	NE to SE	GO A/STOP							
1271317	4378	10/1/2007			VILLEBOIS DR S	SW LAUSANNE ST	50	NE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED							
1211945	4344	10/16/2006			WILSONVILLE RD		150	E	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DARK-NO ST LIGHTS	TRAFFIC ISLAND	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE								

General Data			Highway		Street Names		From Intersection		Overall									Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1278818	838	1/22/2008			WILSONVILLE RD		0	CN	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1321957	1107	3/5/2009			WILSONVILLE RD			UN	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CUT SLOPE/DITCH	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE								
1236884	1278	3/31/2007			WILSONVILLE RD	BOECKMAN RD	52	W	STRGHT	FIX OBJ	FIX	INJ	RAIN	WET	DARK-ST LIGHTS	CUT SLOPE/DITCH	TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE								
1332223	2689	7/23/2009			WILSONVILLE RD	BOECKMAN RD	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1398393	4354	11/18/2010			WILSONVILLE RD	BOECKMAN RD	0	CN	INTER	ANGL-OTH	ANGL	INJ	RAIN	WET	DARK-ST LIGHTS	FORCED BY IMPACT	PASSED STOP SIGN	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	W to E	GO A/STOP	PSNGR CAR	STOP	E to W	PREV COL
1399007	4720	12/11/2010			WILSONVILLE RD	BOECKMAN RD	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLOUDY	DRY	DARK-ST LIGHTS		PASSED STOP SIGN	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1237668	557	2/1/2007			WILSONVILLE RD	BOONES-BOECKMAN CN	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DUSK		NO YIELD	PSNGR CAR	STOP	S to N	STP/L TRN	PSNGR CAR	STRGHT	N to S	NONE				
1249685	3084	7/19/2007			WILSONVILLE RD	BROWN RD	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	SW to N	NONE				
1281919	1090	3/17/2008			WILSONVILLE RD	BROWN RD	100	N	STRGHT	O-1STOP	BACK	PDO	CLEAR	DRY	DAWN		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	S to N	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1305603	3747	10/2/2008			WILSONVILLE RD	BROWN RD	500	NE	CURVE	FIX OBJ	FIX	PDO	RAIN	WET	DUSK	GUARDRAIL	TOO FAST FOR COND	PSNGR CAR	STRGHT	SW to NE	NONE								
1317154	368	1/31/2009			WILSONVILLE RD	BROWN RD	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	SW to S	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1330633	2263	6/19/2009			WILSONVILLE RD	BROWN RD	1000	NE	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	TOO FAST FOR COND	PSNGR CAR	STRGHT	SW to NE	NONE								
1347101	84093	8/23/2009			WILSONVILLE RD	BROWN RD	100	N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1336307	3112	8/23/2009			WILSONVILLE RD	BROWN RD	100	SW	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1340425	3565	9/24/2009			WILSONVILLE RD	BROWN RD	100	NE	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1246369	2559	6/18/2007			WILSONVILLE RD	CEDAR POINTE DR	300	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STP/L TRN				
1201525	1804	5/2/2006			WILSONVILLE RD	KINSMAN RD	500	W	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	EXIT DWY				
1208100	3719	9/7/2006			WILSONVILLE RD	KINSMAN RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1232312	1589	4/19/2007			WILSONVILLE RD	KINSMAN RD	150	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1259848	4400	10/9/2007			WILSONVILLE RD	KINSMAN RD	500	E	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	SEMI TOW	STRGHT	E to W	NONE				
1263259	4638	10/25/2007			WILSONVILLE RD	KINSMAN RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	SEMI TOW	STOP	W to E	STP/L TRN				
1263874	4882	11/6/2007			WILSONVILLE RD	KINSMAN RD	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	PSNGR CAR	STOP	W to E	PREV COL
1285779	1755	5/13/2008			WILSONVILLE RD	KINSMAN RD	100	N	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	SEMI TOW	STOP	N to S	STOPPED				
1288703	2148	6/7/2008			WILSONVILLE RD	KINSMAN RD	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1304975	3576	9/15/2008			WILSONVILLE RD	KINSMAN RD	0	E	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1331540	2501	7/7/2009			WILSONVILLE RD	KINSMAN RD	100	W	STRGHT	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE								
1331980	2634	7/19/2009			WILSONVILLE RD	KINSMAN RD	200	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1335044	2670	7/22/2009			WILSONVILLE RD	KINSMAN RD	300	E	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	N to E	EXIT DWY				
1340565	5199	8/5/2009			WILSONVILLE RD	KINSMAN RD	200	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1336882	3208	8/31/2009			WILSONVILLE RD	KINSMAN RD	150	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED	PSNGR CAR	STOP	E to W	PREV COL
1352261	4217	11/2/2009			WILSONVILLE RD	KINSMAN RD	100	N	CURVE	FIX OBJ	FIX	INJ	CLEAR	DRY	DARK-NO ST LIGHTS	SUBSEQ OVERTURN	TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE								
1384443	3263	9/13/2010			WILSONVILLE RD	KINSMAN RD	304	E	ALLEY	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	ENTR DWY	PSNGR CAR	STOP	N to S	PREV COL
1396881	4166	11/8/2010			WILSONVILLE RD	KINSMAN RD	500	E	STRGHT	ANIMAL	OTH	PDO	CLOUDY	UNKNOWN	DARK-NO ST LIGHTS	DEER OR ELK	OTHER	PSNGR CAR	STRGHT	W to E	NONE								
1205296	2988	7/17/2006			WILSONVILLE RD	KOLBE RD	200	N	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1236885	1215	3/21/2007			WILSONVILLE RD	KOLBE RD	0	E	INTER	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE								
1257986	4128	9/23/2007			WILSONVILLE RD	KOLBE RD	50	NW	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1282594	1294	4/3/2008			WILSONVILLE RD	KOLBE RD	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1292160	2473	7/2/2008			WILSONVILLE RD	KOLBE RD	0	CN	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1185438	853	2/27/2006			WILSONVILLE RD	MEADOWS LP	50	SW	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DAYLIGHT	HOLE/RDWY EDGE	TOO FAST FOR COND	PSNGR CAR	STRGHT	SW to NE	NONE								
1200785	2377	6/9/2006			WILSONVILLE RD	MEADOWS LP	50	SW	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1254505	3569	8/16/2007			WILSONVILLE RD	MEADOWS LP	200	SW	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	CUT SLOPE/DITCH	OTHER	PSNGR CAR	STRGHT	NE to SW	NONE								
1339455	3393	9/10/2009			WILSONVILLE RD	MEADOWS LP	200	N	STRGHT	PED	PED	INJ	CLEAR	DRY	DAYLIGHT	CURB	TOO FAST FOR COND	PSNGR CAR	TURN-L	S to W	NONE								
1339640	3426	9/11/2009			WILSONVILLE RD	MEADOWS LP	200	NW	STRGHT	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STOP	SW to NE	STOPPED								
1393440	3954	10/28/2010			WILSONVILLE RD	MEADOWS LP	30	NE	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	NE to SW	NONE	UNKNOWN	STOP	NE to SW	STOPPED				
1398487	4367	11/19/2010			WILSONVILLE RD	MEADOWS LP	0	SE	INTER	PED	PED	INJ	CLEAR	DRY	DAWN		NO YIELD	PSNGR CAR	TURN-R	SE to NE	NONE								
1316192	210	1/16/2009			WILSONVILLE RD	MEADOWS PKY	100	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1340503	3575	9/22/2009			WILSONVILLE RD	MEADOWS PKY	200	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1365859	1273	4/16/2010			WILSONVILLE RD	MEADOWS PKY	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	N to E	NONE				
1188429	874	3/1/2006			WILSONVILLE RD	MONTEBELLO DR	200	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1254512	3678	8/27/2007			WILSONVILLE RD	MONTEBELLO DR	100	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1281920	1092	3/16/2008			WILSONVILLE RD	MONTEBELLO DR	1000	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1286009	1811	5/8/2008			WILSONVILLE RD	MONTEBELLO DR	50	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1288642	2119	6/3/2008			WILSONVILLE RD	MONTEBELLO DR	100	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1305246	3664	9/26/2008			WILSONVILLE RD	MONTEBELLO DR	150	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED	PSNGR CAR	STOP	E to W	PREV COL
1307729	86558	11/26/2008			WILSONVILLE RD	MONTEBELLO DR	60	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1355729	5043	12/26/2009			WILSONVILLE RD	MONTEBELLO DR	200	W	STRGHT	FIX OBJ	FIX	PDO	CLEAR	DRY	DUSK	CURB	INATTENTION	PSNGR CAR	STRGHT	W to E	NONE								
1356495	129	1/13/2010			WILSONVILLE RD	MONTEBELLO DR	300	W	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1362990	881	3/16/2010			WILSONVILLE RD	MONTEBELLO DR	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	SLOW DN				
1373511	2177	6/25/2010			WILSONVILLE RD	MONTEBELLO DR	0	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	CARELESS	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED	PSNGR CAR	STOP	E to W	PREV COL
1386071	3399	9/21/2010			WILSONVILLE RD	MONTEBELLO DR	105	E	STRGHT	S-STRGHT	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1193658	1386	4/2/2006	1	283.94	WILSONVILLE RD	NB ENFR WLSNVL RD		E	INTER	S-1STOP	REAR	PDO	CLEAR	WET	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1200126	1816	5/1/2006	1	283.94	WILSONVILLE RD	NB ENFR WLSNVL RD		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1222349	4598	10/31/2006	1	283.89	WILSONVILLE RD	NB ENFR WLSNVL RD		NW	GRADE	FIX OBJ	FIX	PDO	CLEAR	DRY	DAYLIGHT	FENCE/BUILDING	TOO FAST FOR COND	PSNGR CAR	STRGHT	SE to NW	NONE								
1266965	4539	10/18/2007	1	283.94	WILSONVILLE RD	NB ENFR WLSNVL RD		CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1264561	4999	11/13/2007	1	283.94	WILSONVILLE RD	NB ENFR WLSNVL RD		E	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1298265	3420	9/9/2008	1	283.95	WILSONVILLE RD	NB ENFR WLSNVL RD		E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DUSK		FOLLOW TOO CLOSE												
1364555	1150	4/6/2010	1	283.88	WILSONVILLE RD	NB ENFR WLSNVL RD		E	INTER	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT	PED INVOLVED	FOLLOW TOO CLOSE												
1370604	1643	5/19/2010	1	283.95	WILSONVILLE RD	NB ENFR WLSNVL RD		E	STRGHT	S-1STOP	SS-O	PDO	RAIN	WET	DAYLIGHT	FORCED BY IMPACT	IMPROPER LANE CHANGE												
1201516	2491	6/19/2006	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		SW	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1210441	4021	9/28/2006	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	SKIDDED	PSNGR CAR	STOP	SW to NE	STOPPED				
1217212	5100	11/21/2006	1	283.93	WILSONVILLE RD	NB EXTO WLSNVL RD		CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1246883	1836	5/2/2007	1	283.87	WILSONVILLE RD	NB EXTO WLSNVL RD		SW	GRADE	S-1STOP	REAR	INJ	CLOUDY	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1246885	2405	6/6/2007	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		SW	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STP/L TRN				
1288350	2019	5/28/2008	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		SW	INTER	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE												
1298544	3692	9/30/2008	1	283.94	WILSONVILLE RD	NB EXTO WLSNVL RD		CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG												
1361372	80471	1/29/2010	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1362423	886	3/17/2010	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		S	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1365097	1252	4/15/2010	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		S	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1389941	3694	10/12/2010	1	283.88	WILSONVILLE RD	NB EXTO WLSNVL RD		S	INTER	BIKE	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD												
1197247	2051	5/19/2006			WILSONVILLE RD	ORCHARD DR	100	SW	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1308135	4307	11/9/2008			WILSONVILLE RD	ORCHARD DR	1020	SE	STRGHT	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	SUBSEQ OVERTURN	FATIGUE	PSNGR CAR	STRGHT	NW to SE	NONE								
1335701	3035	8/16/2009			WILSONVILLE RD	ORCHARD DR	500	SW	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	MTRCYCLE	STOP	SW to NE	STOPPED				
1354159	4379	11/13/2009			WILSONVILLE RD	ORCHARD DR	100	SW	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	SW to NE	NONE	PSNGR CAR	STOP	SW to NE	STOPPED				
1183999	183	1/11/2006			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	O-1TURN	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1184579	616	2/8/2006			WILSONVILLE RD	REBEKAH ST	200	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1205739	3373	8/15/2006			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1236886	1017	3/7/2007			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER TURN	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1253644	3399	8/10/2007			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1259112	4347	10/5/2007			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	E to S	NONE				
1265575	5182	11/24/2007			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DUSK		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1292523	2562	7/8/2008			WILSONVILLE RD	REBEKAH ST	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STP/L TRN				
1307634	4280	11/7/2008			WILSONVILLE RD	REBEKAH ST	50	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1318913	765	2/27/2009			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1319856	824	3/2/2009			WILSONVILLE RD	REBEKAH ST	0	CN	INTER	ANGL-OTH	ANGL	PDO	RAIN	WET	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1339919	3533	9/19/2009			WILSONVILLE RD	REBEKAH ST	20	W	ALLEY	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STP/L TRN				
1352977	4303	11/10/2009			WILSONVILLE RD	REBEKAH ST	0	E	INTER	PED	PED	INJ	CLOUDY	WET	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	N to E	NONE								
1362737	852	3/15/2010			WILSONVILLE RD	REBEKAH ST	50	W	STRGHT	S-1STOP	REAR	INJ	CLOUDY	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1391914	3832	10/20/2010			WILSONVILLE RD	REBEKAH ST	10	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DUSK		INATTENTION	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				

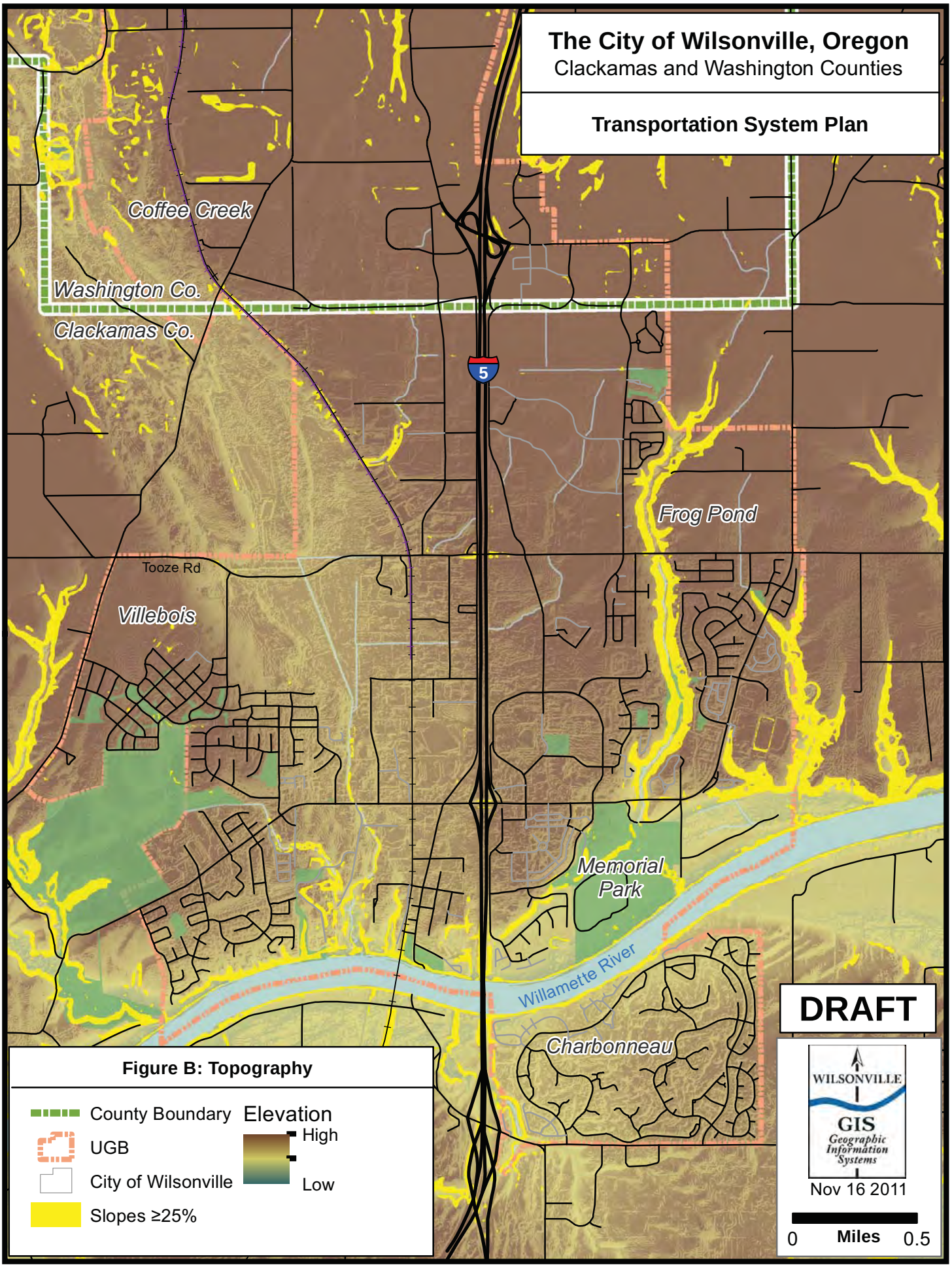
General Data			Highway		Street Names		From Intersection		Overall								Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1183154	129	1/7/2006	1	283.83	WILSONVILLE RD	SB ENFR WLSNVL RD		W	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	SKIDDED	PSNGR CAR	STOP	W to E	STOPPED				
1252547	2996	7/16/2007	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		W	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1252361	2742	7/25/2007			WILSONVILLE RD	SB ENFR WLSNVL RD		W	STRGHT	PRKD MV	SS-O	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE	SEMI TOW	PRKD-P	W to E	PAR PARK				
1252363	2747	7/25/2007			WILSONVILLE RD	SB ENFR WLSNVL RD	100	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	SEMI TOW	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1266966	4576	10/19/2007	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		W	INTER	S-1STOP	REAR	PDO	RAIN	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1301506	4460	11/20/2008	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		W	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	PED INVOLVED	FOLLOW TOO CLOSE												
1334851	2441	7/1/2009	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		W	INTER	S-1STOP	REAR	PDO	UNKNOWI	UNKNOWN	DAYLIGHT		FOLLOW TOO CLOSE												
1376635	2616	7/26/2010	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		E	INTER	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		INATTENTION												
1394116	4013	11/1/2010	1	283.84	WILSONVILLE RD	SB ENFR WLSNVL RD		W	INTER	S-1STOP	REAR	INJ	RAIN	WET	DUSK	PED INVOLVED	FOLLOW TOO CLOSE												
1191372	432	1/28/2006	1	284.26	WILSONVILLE RD	SB EXTO WLSNVL RD		NE	INTER	S-1STOP	REAR	INJ	CLOUDY	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1201515	2276	5/28/2006	1	283.85	WILSONVILLE RD	SB EXTO WLSNVL RD		E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STP/L TRN				
1213704	3384	8/16/2006	1	284.26	WILSONVILLE RD	SB EXTO WLSNVL RD		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED	PSNGR CAR	STOP	N to S	STOPPED
1213706	4050	9/30/2006	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		E	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	NW to E	NONE	PSNGR CAR	TURN-L	NW to E	NONE				
1217252	4745	11/5/2006	1	284.24	WILSONVILLE RD	SB EXTO WLSNVL RD		NE	GRADE	S-1STOP	REAR	INJ	RAIN	WET	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STOP	NE to SW	STOPPED				
1226708	5079	11/21/2006	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		CN	INTER	ANGL-OTH	TURN	INJ	RAIN	WET	DARK-NO ST LIGHTS	CELLPHONE-POLICE	DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	NE to E	NONE				
1319712	743	2/21/2009	1	283.89	WILSONVILLE RD	SB EXTO WLSNVL RD		E	BRIDGE	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1327616	1620	5/5/2009	1	284.25	WILSONVILLE RD	SB EXTO WLSNVL RD		N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1334898	2518	7/10/2009	1	284.25	WILSONVILLE RD	SB EXTO WLSNVL RD		UN	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE												
1343346	3350	9/5/2009	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		W	INTER	FIX OBJ	FIX	PDO	CLOUDY	DRY	DAYLIGHT	MEDIAN BARRIER	TOO FAST FOR COND												
1348795	4107	10/30/2009	1	284.32	WILSONVILLE RD	SB EXTO WLSNVL RD		N	STRGHT	FIX OBJ	FIX	INJ	CLOUDY	DRY	DAYLIGHT	CABLE ACROSS RD	SPEEDING												
1351701	4399	11/13/2009	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		E	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1371841	1883	6/1/2010	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1391501	3789	10/17/2010	1	283.84	WILSONVILLE RD	SB EXTO WLSNVL RD		NE	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE												
1397254	4200	11/10/2010	1	284.26	WILSONVILLE RD	SB EXTO WLSNVL RD		N	INTER	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS		TOO FAST FOR COND												
1185151	613	2/8/2006			WILSONVILLE RD	SW BOONES FERRY RD	100	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	SEMI TOW	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1190827	1134	3/17/2006			WILSONVILLE RD	SW BOONES FERRY RD	300	W	ALLEY	S-1TURN	TURN	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER TURN	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	E to S	ENTR DWY				
1193043	1408	4/6/2006			WILSONVILLE RD	SW BOONES FERRY RD	300	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1203276	3025	7/20/2006			WILSONVILLE RD	SW BOONES FERRY RD	200	N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	W to S	EXIT DWY	PSNGR CAR	TURN-L	E to S	EXIT DWY				
1203280	3036	7/21/2006			WILSONVILLE RD	SW BOONES FERRY RD	0	CN	INTER	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1203278	3034	7/21/2006			WILSONVILLE RD	SW BOONES FERRY RD	300	N	ALLEY	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1203195	3088	7/26/2006			WILSONVILLE RD	SW BOONES FERRY RD	200	N	ALLEY	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	S to W	ENTR DWY				
1212360	4476	10/23/2006			WILSONVILLE RD	SW BOONES FERRY RD	500	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1242154	1350	4/4/2007			WILSONVILLE RD	SW BOONES FERRY RD	75	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1228692	1478	4/6/2007			WILSONVILLE RD	SW BOONES FERRY RD	50	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1244807	2082	5/17/2007			WILSONVILLE RD	SW BOONES FERRY RD	300	N	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	S to W	ENTR DWY				
1244828	2130	5/21/2007			WILSONVILLE RD	SW BOONES FERRY RD	78	SW	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1246224	2491	6/15/2007			WILSONVILLE RD	SW BOONES FERRY RD	200	W	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	EXIT DWY				
1249632	2909	7/11/2007			WILSONVILLE RD	SW BOONES FERRY RD	500	N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	W to N	ENTR DWY	PSNGR CAR	TURN-L	E to S	ENTR DWY				
1254480	3571	8/16/2007			WILSONVILLE RD	SW BOONES FERRY RD	50	W	ALLEY	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	TURN-R	S to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1255846	3741	8/31/2007			WILSONVILLE RD	SW BOONES FERRY RD	0	CN	INTER	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	SEMI TOW	TURN-L	N to E	NONE	SCHL BUS	TURN-L	N to E	NONE				
1258778	4266	10/2/2007			WILSONVILLE RD	SW BOONES FERRY RD	50	S	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1260936	4742	10/31/2007			WILSONVILLE RD	SW BOONES FERRY RD	50	E	ALLEY	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	S to E	ENTR DWY	PSNGR CAR	STRGHT	W to E	NONE				
1265723	5218	11/28/2007			WILSONVILLE RD	SW BOONES FERRY RD	500	W	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	EXIT DWY				
1272498	299	1/20/2008			WILSONVILLE RD	SW BOONES FERRY RD	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	WET	DARK-NO ST LIGHTS		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1277535	522	2/5/2008			WILSONVILLE RD	SW BOONES FERRY RD	0	NE	INTER	S-OTHER	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	TURN-R	E to N	NONE	PSNGR CAR	TURN-R	E to N	STP TURN				
1282016	1138	3/21/2008			WILSONVILLE RD	SW BOONES FERRY RD	200	N	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1282144	1214	3/27/2008			WILSONVILLE RD	SW BOONES FERRY RD	50	S	STRGHT	O-1STOP	BACK	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1283440	1638	4/28/2008			WILSONVILLE RD	SW BOONES FERRY RD	50	W	STRGHT	S-1STOP	REAR	INJ	RAIN	WET	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STP/L TRN				
1283465	1652	4/28/2008			WILSONVILLE RD	SW BOONES FERRY RD	50	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1289124	2244	6/12/2008			WILSONVILLE RD	SW BOONES FERRY RD	200	S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	PREV COL
1289204	2250	6/12/2008			WILSONVILLE RD	SW BOONES FERRY RD	600	W	STRGHT	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1302487	5221	6/30/2008			WILSONVILLE RD	SW BOONES FERRY RD	200	W	ALLEY	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	E to S	ENTR DWY				
1304354	3444	9/14/2008			WILSONVILLE RD	SW BOONES FERRY RD	150	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1306424	3969	10/18/2008			WILSONVILLE RD	SW BOONES FERRY RD	500	W	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	S to W	EXIT DWY	PSNGR CAR	STRGHT	W to E	NONE				
1317950	690	2/25/2009			WILSONVILLE RD	SW BOONES FERRY RD	150	E	STRGHT	S-1STOP	REAR	INJ	CLOUDY	WET	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1319884	828	3/2/2009			WILSONVILLE RD	SW BOONES FERRY RD	1000	S	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	SEMI TOW	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1327982	881	3/8/2009			WILSONVILLE RD	SW BOONES FERRY RD	0	W	INTER	S-1STOP	REAR	INJ	CLOUDY	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1320466	1088	3/24/2009			WILSONVILLE RD	SW BOONES FERRY RD	200	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1324143	1543	4/27/2009			WILSONVILLE RD	SW BOONES FERRY RD	600	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1329799	2267	6/19/2009			WILSONVILLE RD	SW BOONES FERRY RD	350	N	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	E to S	ENTR DWY	PSNGR CAR	STRGHT	N to S	NONE				
1331604	2535	7/8/2009			WILSONVILLE RD	SW BOONES FERRY RD	100	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAWN		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1344382	3845	10/12/2009			WILSONVILLE RD	SW BOONES FERRY RD	150	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1348251	3841	10/13/2009			WILSONVILLE RD	SW BOONES FERRY RD	0	E	INTER	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	TURN-L	N to E	NONE				
1357148	328	1/30/2010			WILSONVILLE RD	SW BOONES FERRY RD	100	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1357429	401	2/5/2010			WILSONVILLE RD	SW BOONES FERRY RD	100	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	TRUCK	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1365780	1248	4/15/2010			WILSONVILLE RD	SW BOONES FERRY RD	246	NE	ALLEY	S-STRGHT	SS-O	PDO	UNKNOWI	UNKNOWN	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	NE to SW	NONE	PSNGR CAR	STRGHT	NE to SW	NONE				
1370475	1617	5/14/2010			WILSONVILLE RD	SW BOONES FERRY RD	500	W	ALLEY	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	EXIT DWY				
1371807	1880	6/1/2010			WILSONVILLE RD	SW BOONES FERRY RD	100	N	ALLEY	ANGL-OTH	TURN	INJ	RAIN	WET	DAYLIGHT		IMPROPER OVERTAKE	PSNGR CAR	STRGHT	N to S	PASSING	PSNGR CAR	STRGHT	W to E	EXIT DWY				
1245277	2215	5/30/2007			WILSONVILLE RD	SW HEATHER PL	200	S	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED	PSNGR CAR	STOP	S to N	PREV COL
1315323	116	1/9/2009			WILSONVILLE RD	SW HEATHER PL	60	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1328718	2048	6/4/2009			WILSONVILLE RD	SW HEATHER PL	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	S to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1184275	369	1/21/2006			WILSONVILLE RD	SW MEMORIAL DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1272521	424	1/28/2008			WILSONVILLE RD	SW MEMORIAL DR	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLOUDY	DRY	DAYLIGHT		NO CODE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1290721	2440	6/27/2008			WILSONVILLE RD	SW MEMORIAL DR	100	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1357227	354	1/29/2010			WILSONVILLE RD	SW MEMORIAL DR	50	S	STRGHT	O-1STOP	BACK	PDO	CLEAR	DRY	DARK-ST LIGHTS		OTHR IMPROPER DRIVING	PSNGR CAR	BACK	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1184930	675	2/13/2006			WILSONVILLE RD	SW PARKWAY AVE	200	S	STRGHT	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1269128	5621	12/20/2007			WILSONVILLE RD	SW PARKWAY AVE	75	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1288000	2042	5/29/2008			WILSONVILLE RD	SW PARKWAY AVE	150	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1215112	4864	11/14/2006			WILSONVILLE RD	SW ROSE LN	50	N	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1249641	2937	7/13/2007			WILSONVILLE RD	SW ROSE LN	300	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1305404	3691	9/29/2008			WILSONVILLE RD	SW ROSE LN	50	S	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	S to W	ENTR DWY				
1382635	3116	9/2/2010			WILSONVILLE RD	SW ROSE LN	0	E	INTER	FIX OBJ	FIX	INJ	CLEAR	DRY	DAYLIGHT	TREE/STUMP	FATIGUE	PSNGR CAR	STRGHT	W to E	NONE								
1196499	1858	5/3/2006			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1211596	4290	10/13/2006			WILSONVILLE RD	SW TOWN CENTER LP E	100	N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1220525	5539	12/20/2006			WILSONVILLE RD	SW TOWN CENTER LP E	100	N	STRGHT	O-STRGHT	SS-M	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		DROVE LEFT OF CENTER	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1240181	33	1/4/2007			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	NONE				
1237676	1070	3/11/2007			WILSONVILLE RD	SW TOWN CENTER LP E	200	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1236887	1086	3/13/2007			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DARK-ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-L	S to W	NONE				
1257399	3903	9/8/2007			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	BIKE	ANGL	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE								
1269049	5611	12/20/2007			WILSONVILLE RD	SW TOWN CENTER LP E	0	W	STRGHT	PED	PED	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	S to W	NONE								
1281720	971	3/9/2008			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	N to E	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1287896	1984	5/23/2008			WILSONVILLE RD	SW TOWN CENTER LP E	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1305712	3776	10/4/2008			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	ANGL-OTH	ANGL	INJ	RAIN	WET	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1307285	4193	11/3/2008			WILSONVILLE RD	SW TOWN CENTER LP E	0	N	STRGHT	ANGL-OTH	TURN	PDO	RAIN	WET	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	TURN-R	E to N	NONE	OTH BUS	STOP	N to S	STP/L TRN				
1323800	1482	4/21/2009			WILSONVILLE RD	SW TOWN CENTER LP E	300	E	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1329026	2073	6/7/2009			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1331652	2562	7/11/2009			WILSONVILLE RD	SW TOWN CENTER LP E	100	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1354663	4620	11/30/2009			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	ANGL-OTH	ANGL	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	S to N	NONE				

General Data			Highway		Street Names		From Intersection		Overall								Vehicle 1				Vehicle 2				Vehicle 3			
Crash ID	Serial #	Crash Date	Hwy #	MP	1st Street	2nd Street	Dist.	Dir.	Road Char.	Crash Type	Collision Type	Crash Sev.	Weather	Road Surface	Light	Event 1	Cause 1	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action	Vehicle Type	Vehicle Mvmt	From - To	Vehicle Action
1359388	583	2/18/2010			WILSONVILLE RD	SW TOWN CENTER LP E	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1183572	130	1/7/2006			WILSONVILLE RD	TOWN CENTER LP W	200	W	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1191420	181	1/11/2006			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	ANGL	INJ	RAIN	WET	DAYLIGHT	CELLPHONE-POLICE	DISREGARD TRAF SIG	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1184005	324	1/22/2006			WILSONVILLE RD	TOWN CENTER LP W	10	S	STRGHT	O-1STOP	SS-M	PDO	CLOUDY	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1185426	813	2/24/2006			WILSONVILLE RD	TOWN CENTER LP W	500	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	PREV COL	PSNGR CAR	STOP	E to W	STOPPED
1203650	1484	4/13/2006			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	ANGL	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1208510	3881	9/18/2006			WILSONVILLE RD	TOWN CENTER LP W	50	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1212370	4528	10/26/2006			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	O-1TURN	TURN	INJ	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	TURN-L	E to S	NONE				
1229693	239	1/17/2007			WILSONVILLE RD	TOWN CENTER LP W	20	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	WET	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1237680	1152	3/16/2007			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	TURN-R	N to W	NONE				
1253174	3271	8/4/2007			WILSONVILLE RD	TOWN CENTER LP W	50	N	STRGHT	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-L	W to N	NONE	PSNGR CAR	TURN-L	W to N	NONE				
1258771	4237	9/30/2007			WILSONVILLE RD	TOWN CENTER LP W	50	N	STRGHT	FIX OBJ	FIX	PDO	RAIN	WET	DAYLIGHT	MEDIAN BARRIER	TOO FAST FOR COND	PSNGR CAR	TURN-L	E to S	NONE								
1259798	4383	10/7/2007			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1269616	5718	11/15/2007			WILSONVILLE RD	TOWN CENTER LP W	50	N	STRGHT	S-1STOP	REAR	PDO	RAIN	WET	DUSK		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1267036	5406	12/7/2007			WILSONVILLE RD	TOWN CENTER LP W	50	N	STRGHT	S-STRGHT	SS-O	PDO	RAIN	WET	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				
1272528	323	1/23/2008			WILSONVILLE RD	TOWN CENTER LP W	1320	N	ALLEY	ANGL-OTH	TURN	INJ	CLEAR	DRY	DARK-NO ST LIGHTS		NO YIELD	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	TURN-L	E to S	EXIT DWY				
1278090	675	2/15/2008			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	S-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-L	S to W	NONE	PSNGR CAR	STRGHT	S to N	NONE				
1282010	1133	3/20/2008			WILSONVILLE RD	TOWN CENTER LP W	100	E	STRGHT	S-OTHER	TURN	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	TURN-R	E to N	NONE	PSNGR CAR	TURN-R	E to N	NONE				
1282020	1145	3/21/2008			WILSONVILLE RD	TOWN CENTER LP W	0	N	INTER	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STOP	N to S	STP/L TRN				
1285738	1738	5/1/2008			WILSONVILLE RD	TOWN CENTER LP W	50	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1288915	2186	6/6/2008			WILSONVILLE RD	TOWN CENTER LP W	300	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	TOO FAST FOR COND	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	PSNGR CAR	STOP	W to E	STOPPED
1290560	2409	6/28/2008			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED	PSNGR CAR	STOP	W to E	PREV COL
1292522	2561	7/8/2008			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1305201	3636	8/15/2008			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1304553	3511	9/12/2008			WILSONVILLE RD	TOWN CENTER LP W	100	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	TURN-L	E to S	NONE	PSNGR CAR	STOP	N to S	STOPPED				
1304585	5225	10/28/2008			WILSONVILLE RD	TOWN CENTER LP W	20	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT		OTHR IMPROPER DRIVING	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1308851	4492	11/23/2008			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	ANGL-OTH	TURN	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		IMPROPER LANE CHANGE	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	TURN-R	N to W	NONE				
1332310	2721	7/17/2009			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-STP	TURN	PDO	CLEAR	DRY	DAYLIGHT		TOO FAST FOR COND	PSNGR CAR	TURN-L	S to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1332809	2694	7/23/2009			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	TURN-R	W to S	NONE				
1332806	2819	7/31/2009			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	W to S	NONE	PSNGR CAR	TURN-R	W to S	NONE				
1345880	4013	10/22/2009			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DAYLIGHT		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1344425	4334	11/11/2009			WILSONVILLE RD	TOWN CENTER LP W	50	W	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	FORCED BY IMPACT	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED	PSNGR CAR	STOP	E to W	STOPPED
1354816	4674	12/4/2009			WILSONVILLE RD	TOWN CENTER LP W	200	S	STRGHT	S-1STOP	REAR	PDO	CLEAR	DRY	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	S to N	NONE	PSNGR CAR	STOP	S to N	STOPPED				
1355766	4867	12/15/2009			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	TURN	PDO	RAIN	WET	DARK-NO ST LIGHTS		DISREGARD TRAF CNTRL DEV	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	TURN-R	N to W	NONE				
1355813	4918	12/16/2009			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	S-OTHER	TURN	INJ	CLOUDY	WET	DAYLIGHT		IMPROPER TURN	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	TURN-R	N to W	NONE				
1357005	283	1/22/2010			WILSONVILLE RD	TOWN CENTER LP W	20	W	STRGHT	S-STRGHT	SS-O	PDO	RAIN	WET	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1395031	429	2/8/2010			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	O-1TURN	TURN	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER TURN	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	U-TURN	W to W	NONE				
1359742	630	2/22/2010			WILSONVILLE RD	TOWN CENTER LP W	0	CN	INTER	ANGL-OTH	TURN	PDO	CLEAR	DRY	DAYLIGHT		DISREGARD TRAF SIG	PSNGR CAR	TURN-R	N to W	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1366025	1299	4/19/2010			WILSONVILLE RD	TOWN CENTER LP W	200	E	STRGHT	S-1STOP	REAR	INJ	CLEAR	DRY	DAYLIGHT	CELLPHONE-WITNSS	INATTENTION	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1370665	1691	5/20/2010			WILSONVILLE RD	TOWN CENTER LP W	0	E	INTER	S-1STOP	REAR	INJ	CLOUDY	DRY	DAYLIGHT		INATTENTION	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1371630	1855	6/4/2010			WILSONVILLE RD	TOWN CENTER LP W	40	W	STRGHT	S-1STOP	REAR	PDO	UNKNOWN	UNKNOWN	DARK-NO ST LIGHTS		FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STOP	W to E	STOPPED				
1383646	3193	9/7/2010			WILSONVILLE RD	TOWN CENTER LP W	0	E	INTER	S-1STOP	REAR	PDO	CLOUDY	DRY	DAYLIGHT	ANML INTERFERED	FOLLOW TOO CLOSE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STOP	E to W	STOPPED				
1386821	3469	9/25/2010			WILSONVILLE RD	TOWN CENTER LP W	100	E	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	W to E	NONE	PSNGR CAR	STRGHT	W to E	NONE				
1390014	3704	10/11/2010			WILSONVILLE RD	TOWN CENTER LP W	100	W	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		IMPROPER LANE CHANGE	PSNGR CAR	STRGHT	E to W	NONE	PSNGR CAR	STRGHT	E to W	NONE				
1343423	3756	10/2/2009			WILSONVILLE RD	WILLAMETTE WAY E	300	N	STRGHT	S-STRGHT	SS-O	PDO	CLEAR	DRY	DAYLIGHT		NO YIELD	PSNGR CAR	STRGHT	N to S	NONE	PSNGR CAR	STRGHT	N to S	NONE				

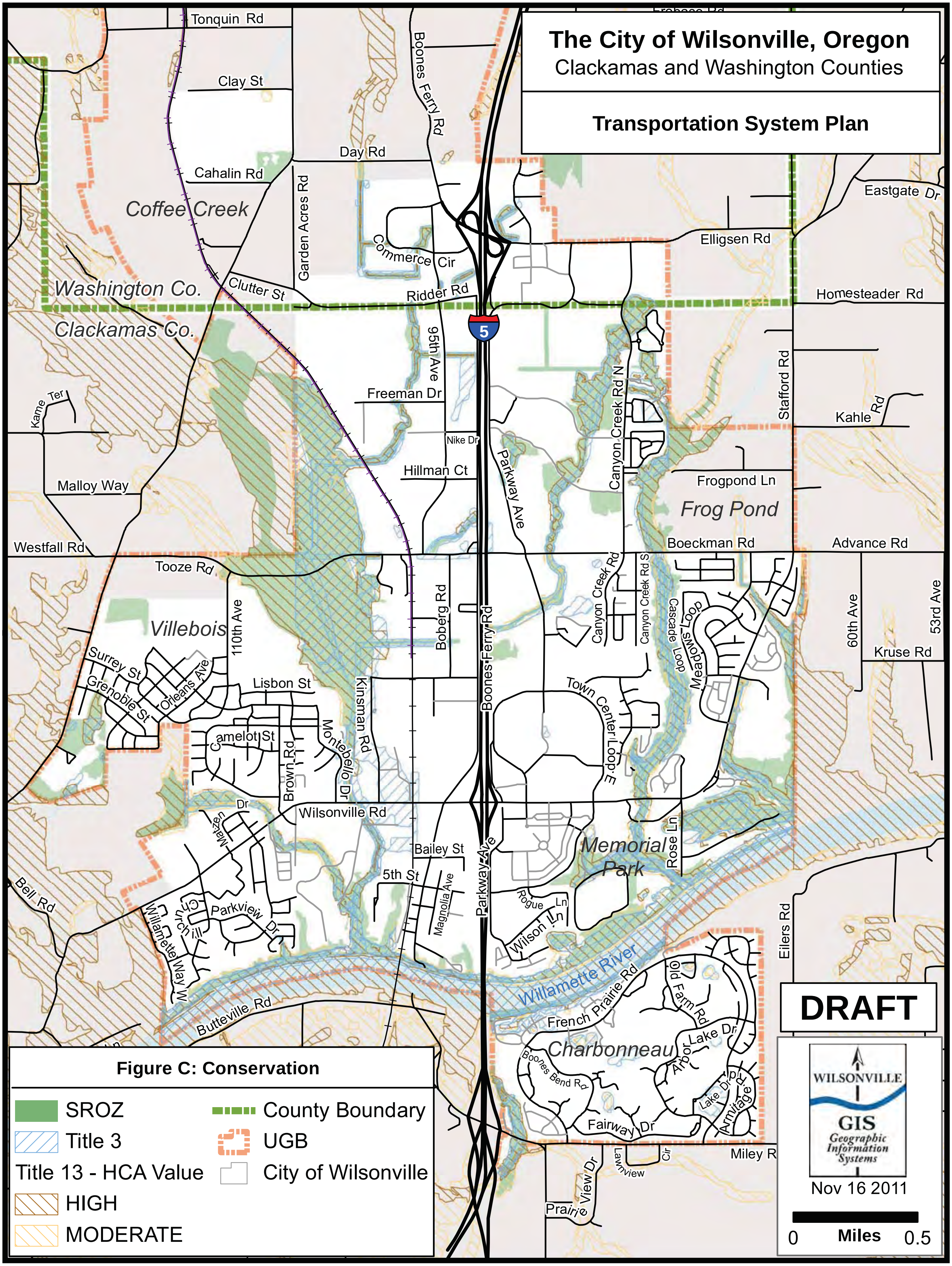
Additional Inventory Figures



M:\Intern2011\TSP_project\TSP_maps\FigureA_Existing_Lanes.mxd



M:\Intern2011\TSP_project\TSP_maps\FigureB_Topography_too.mxd


The City of Wilsonville, Oregon
Clackamas and Washington Counties
Transportation System Plan
Figure C: Conservation
SROZ
Title 3
Title 13 - HCA Value
HIGH
MODERATE
County Boundary
UGB
City of Wilsonville
DRAFT
WILSONVILLE
GIS
Geographic Information Systems
Nov 16 2011
0
Miles
0.5
Coffee Creek
Washington Co.
Clackamas Co.
Villebois
Frog Pond
Memorial Park
Charbonneau
Willamette River
5
Tonquin Rd
Clay St
Cahalin Rd
Day Rd
Boones Ferry Rd
Garden Acres Rd
Commerce Cir
Clutter St
Ridder Rd
Elligsen Rd
Eastgate Dr
Homesteader Rd
95th Ave
Freeman Dr
Nike Dr
Hillman Ct
Parkway Ave
Canyon Creek Rd N
Stafford Rd
Kahle Rd
Frogpond Ln
Kame Ter
Malloy Way
Westfall Rd
Tooze Rd
Boeckman Rd
Advance Rd
Canyon Creek Rd
Canyon Creek Rd S
Cascade Loop
Meadows Loop
60th Ave
53rd Ave
Kruse Rd
110th Ave
Boberg Rd
Surrey St
Grenoble St
Orleans Ave
Lisbon St
Camelot St
Brown Rd
Montebello Dr
Kinsman Rd
Town Center Loop E
Wilsonville Rd
Rose Ln
Matzen Dr
Bailey St
5th St
Magnolia Ave
Rogue Ln
Wilson Ln
Bell Rd
Church Way
Willamette Way W
Parkview Dr
Eilers Rd
Butteville Rd
French Prairie Rd
Old Farm Rd
Lake Dr
Arbor Lake Dr
Boones Bend Rd
Fairway Dr
Armitage Rd
Miley Rd
Lawnview Cir
Prairie View Dr

M:\Intern2011\TSP_project\TSP_maps\FigureD_Floodplain_Wetlands.mxd

Appendix E

FORECASTING METHODOLOGY (DKS, 2011)

DKS Associates
TRANSPORTATION SOLUTIONS

Technical Memorandum

To: Project Management Team

From: Scott Mansur, P.E., Carl Springer, P.E., Mat Dolata, E.I.T.

Date: October 25, 2011

Subject: **Wilsonville Transportation System Plan Update –Forecasting Methodology (Task 3.2)**

Future forecasting is an important step in the transportation planning process and provides estimates of future travel demand. The forecasting methodology that will be used for the Wilsonville Transportation System Plan (TSP) Update will provide turn movement volumes for study intersections in the 2035 TSP horizon year. This memorandum includes projected land use and growth estimates through the 2035 horizon year.

Introduction

The travel demand model developed for the Wilsonville TSP is based on the Metro regional travel demand model. The Wilsonville TSP model applies trip generation and trip distribution data directly taken from the Metro model, but adds additional detail to better represent local travel conditions and routing alternatives within the city.

The Wilsonville TSP model incorporates intersection delay calculations based on detailed intersection geometry and traffic control settings to complete the equilibrium trip assignment. The model also includes additional roadways that may influence local circulation, providing the ability to better evaluate potential neighborhood cut-through traffic. Furthermore, the model disaggregates the regional model's loading of trips onto the travel network.

The result of this approach is an improved traffic volume forecasting tool that dynamically assigns trips to the transportation network using an equilibrium assignment procedure that represents local routing choice more accurately than either a manual assignment, which is not responsive to varying levels of congestion and delay as traffic patterns change, or a regional model, which does not have sufficient detail to represent circulation and routing alternatives at the local level. This resulting model may be referred to as a **mesoscopic sub-area model** and enables a more comprehensive analysis of future conditions and potential TSP alternatives. This approach has been successfully utilized in previous Wilsonville studies[1] as well as other projects within the region.

[1] Brown Road Alternatives Analysis, Barber Street and Kinsman Road Extensions

The following sections of this memorandum detail each component of the travel forecast methodology associated with the Wilsonville TSP model. These components include the roadway network, transportation analysis zones (TAZs), land use, and travel demand.

Roadway Network

The VISUM[2] roadway network included in the Wilsonville TSP model consists of all collector and arterial streets within the Wilsonville Urban Growth Boundary (UGB). The majority of local streets will also be included; however, a limited number of local roadways that do not influence circulation or route choice in the transportation network will be excluded. In addition, the model will include roadways outside of the Wilsonville UGB that influence study area travel[3].

An existing model roadway network was built using NAVTEQ[4] files as the initial base. Then, details were added based on an existing conditions inventory that included posted speeds, traffic control, lane geometries, and number of travel lanes. Many of the elements of the existing conditions inventory will be documented in the Existing Conditions chapter of the TSP. The purpose of the existing conditions network was to configure the 2010 model and act as a base in the development of the future model.

The 2035 future year baseline roadway network was developed to use for the 2035 No-Build analysis, which will be included in the TSP Future Needs Chapter. This network includes new roadways or roadway capacity improvement projects that have identified funding or are included in the financially constrained Metro Regional Transportation Plan. The 2035 future year network may be further adjusted to analyze the various transportation alternatives and improvements that will be considered for the Wilsonville TSP Update.

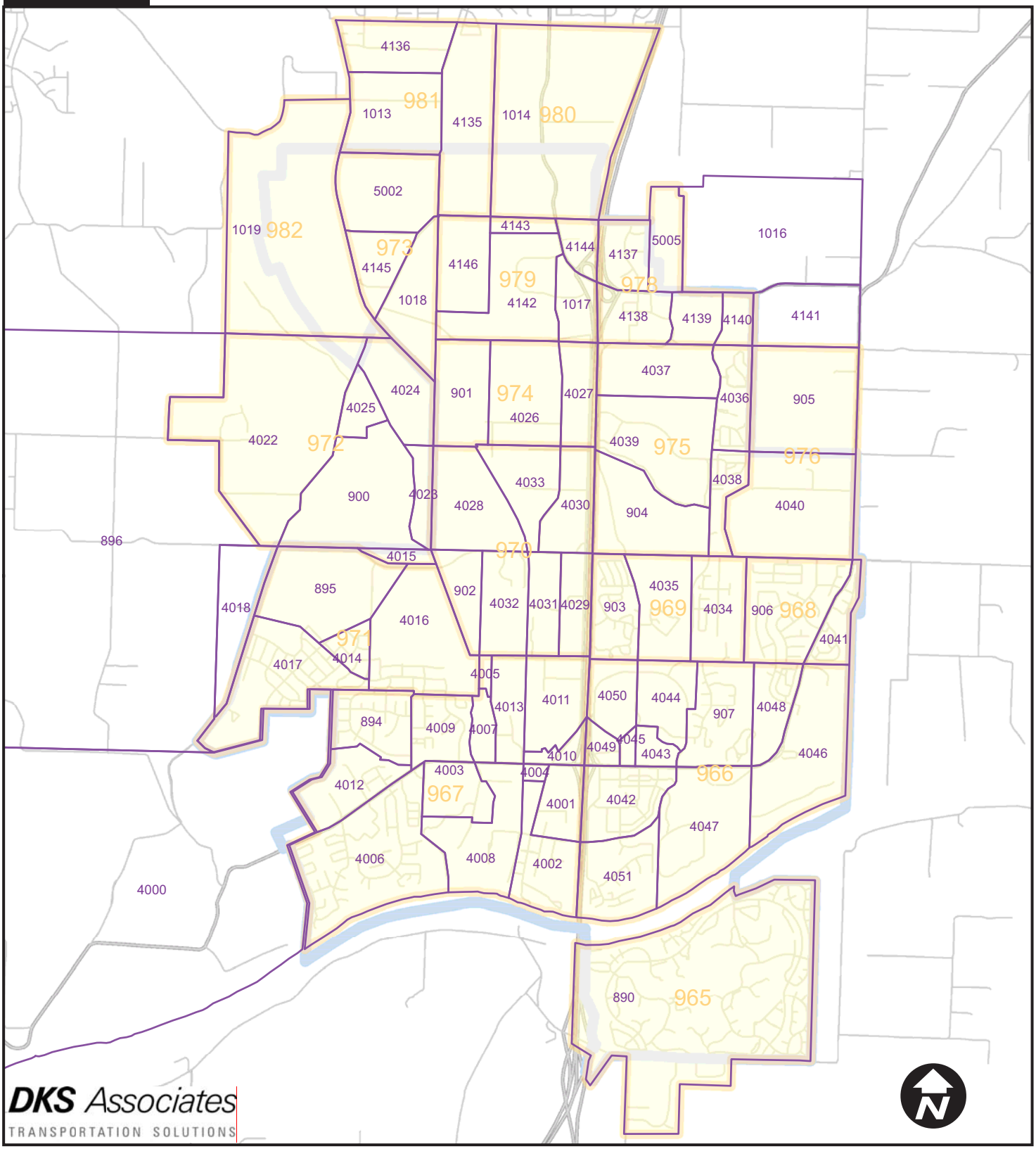
Transportation Analysis Zones

For transportation modeling purposes, Wilsonville and the surrounding areas were divided into transportation analysis zones (TAZs). These TAZs represent the sources of vehicle trip generation within the study area. The Metro travel demand model TAZ boundaries do not align directly with the city limits or the Urban Growth Boundary (UGB). For purposes of identifying land use changes from 2010 to 2035, the model study area is defined by the Metro TAZs that most closely match with the UGB. The 16 Metro TAZs included in the model study area are illustrated in Figure 1. In addition to those 16 Metro TAZs, three other Metro TAZs were included in the model as well. These zones are located adjacent to the UGB and directly influence traffic on roadways in Wilsonville.

[2] VISUM is a transportation travel demand modeling software developed by PTV Vision.
[3] Key external roadway connections include: 65th Avenue, Stafford Road, Johnson Road, Airport Road, Hubbard Cutoff Road, Miley Road, Bell Road, Grahams Ferry Road, Westfall Road, and Tonquin Road.
[4] NAVTEQ provides maps and location data including roadway network shape files used for transportation modeling.

FIGURE 1

URBAN GROWTH BOUNDARY & PROPOSED TRANSPORTATION ANALYSIS ZONES



Legend:
- TAZ_WilsonvilleTSP
- TAZ_Metro
- UGB
- streets

City of Wilsonville in Oregon

For the Wilsonville TSP model, the Metro TAZs were subdivided into 81 smaller zones. These disaggregated zones maintain the boundaries of the 'parent' Metro TAZs, but better represent traffic loading onto the model's more detailed roadway network. The disaggregated TAZ boundaries for the Wilsonville TSP are shown in Figure 1, along with the original Metro TAZ system. The model network also includes external TAZs at each key gateway into and out of the city to account for vehicle trips that enter and exit the model study area.

Land Use

Land use is a key factor affecting the traffic demands placed on Wilsonville's transportation system. The location, density, type, and mixture of land uses have a direct impact on traffic levels and patterns. Existing 2010 land use inventories and future 2035 land use projections are provided by Metro.

The existing 2010 land use inventory approximated the number of households and the amount of retail employment, service employment, and other employment that currently exist in each Metro TAZ. The Metro land use data were then split into the smaller TAZ system identified for the Wilsonville TSP model. Control totals for the 'parent' Metro TAZ were maintained for the sum of the 'child' disaggregated TAZs. The allocation of land use totals between disaggregated TAZs was based on existing aerial photography, tax lot data, and knowledge from previous studies in Wilsonville.

The future 2035 land use projection is an estimate of the amount of each land use that the TAZ could accommodate at expected build-out of vacant or underdeveloped lands assuming Comprehensive Plan designations. The allocation of future growth to Metro TAZs was modified based on input from City of Wilsonville Staff. However, the control total was maintained for the sum of TAZs within the UGB area (as identified in Figure 1). Existing land use estimates and future projections for the UGB area are listed in Table 1.

Table 1: Wilsonville UGB Area Land Use Summary

Land Use	Existing 2010 Land Use	Projected Growth from 2010 to 2035	Projected 2035 Land Use
Households			
Total Households	**8,244**	**4,492**	**12,736**
Employees			
Retail Employees	2,480	1,114	3,594
Service Employees	4,922	4,292	9,214
Other Employees	11,023	8,040	19,063
Total Employees	**18,425**	**13,446**	**31,871**

A full set of detailed land use data by TAZ cannot be provided in this memo due to confidentiality of employment information. However, projected growth for households and employment (retail and other employment) is provided for each model TAZ in the Appendix.

Travel Demand

Future year (2035) travel demand on roadways and at intersections in Wilsonville will be estimated based on the Wilsonville TSP models for 2010 and 2035. Travel demand will be estimated for 30th highest hour conditions for both 2010 and 2035, consistent with the ODOT Analysis Procedures Manual.[5] The purpose of the 2010 model is to calibrate the network in preparation for developing the 2035 model. In addition, the 2010 model will be used as baseline for estimating growth in the 2035 model.

Traffic forecasts will be based on using model post-processing, as identified in the ODOT Procedures Manual. This approach is derived from methodologies outlined in National Cooperative Highway Research Program Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. This process is based on adding the increment of growth identified between the base and future year PM peak travel demand models to 30th highest hour intersection turn movements derived from traffic counts. The method creates future year forecasts that are calibrated to actual data.

The travel demand analysis includes the translation of Metro land use information into motor vehicle trips. This was done for each of the Wilsonville TAZs based on the existing and projected land uses described previously in the Land Use section of this memorandum. This section of the memorandum describes the methodology used to determine how the trips were distributed and assigned to the roadway network.

Trip Generation

Trip quantities for the Wilsonville TSP models were derived directly from Metro's travel demand models for 2010 and 2035. Trip tables were extracted by generating subarea models that match the Wilsonville TSP model boundaries. The initial number of trips in the Wilsonville TSP model was consistent with the Metro travel demand models for both external and internal zones. Trips totals identified for Metro TAZs were split proportionally into the disaggregated TAZ system based on land use data and aggregate Metro model trip rates. The sum of the trips totals for disaggregated 'child' zones equaled the trips for each Metro 'parent' zone. Further refinements to trip generation were made to calibrate the base year Wilsonville model to traffic counts[6]. The growth in demand (difference between 2010 and 2035) identified in Metro's travel demand models was maintained, as identical adjustments to demand were also be applied to the future year model.

---

[5] *Analysis Procedures Manual (APM)*, Oregon Department of Transportation (ODOT) Transportation Planning Analysis Unit (TPAU), Last Updated June 2010.

[6] Two adjustments were performed for base year demand. The first was a special generator representing additional retail traffic generated in the Wilsonville Town Center area. The second was a reduction of traffic volume estimated from rural routes west and northwest of City. These adjustments reflect existing traffic counts and better replicate existing intersection delay, route choices, and traffic circulation within Wilsonville.

Trip Distribution

Trip distribution was performed to estimate how many trips travel between each of the internal and external TAZs. By utilizing trip tables exported directly from the Metro travel demand models, the initial distribution of trips was retained. Relative trip distribution for disaggregated 'child' TAZs reflects the distribution identified for the 'parent' Metro TAZ.

Trip Assignment

Trip assignment involves the determination of the specific travel routes taken for all trips within the transportation network. Both the Wilsonville TSP model and the Metro regional model perform trip assignment using VISUM. Model inputs included the transportation network (i.e., road and intersection locations and characteristics, as determined from maps and field inventories) and a trip distribution table (determined using methodology described previously in this memorandum). Iterated equilibrium assignment was performed using estimated travel times along roadways and delays at intersection movements.[7] The path choice for each trip was based on minimal travel times available between locations in the model. Model outputs included traffic volumes on roadway segments and at intersections.

Calibration

Calibration was performed on the 2010 base year model by comparing model volumes to existing 2010 traffic volumes (i.e., 30th highest hour conditions) at the Wilsonville TSP study intersections and other locations with available count information. A plot comparing the existing traffic counts and the base year model volumes for existing turn movements was analyzed to evaluate the accuracy of the model. The slope of the fitted curve was 1.006, indicating that total model volumes are close to existing counts and verifying that the trip generation is appropriate. Furthermore, the R^2 value of 0.952 exhibits model volume consistency with the target volumes.

The calibration analysis for the 2010 base year model indicates that the model reasonably predicts trip patterns and volumes. Therefore, the 2035 future year model will be expected to reasonably forecast future year traffic volumes for the following reasons:

- The 2035 future year model was created using the 2010 base year model as a starting point.
- Roadway network changes assumed for the future year are not expected to significantly alter travel patterns beyond what is identified in the future Metro travel demand model.
- Future land use projections for the year 2035 were prepared using methodology consistent with the 2010 base year land use estimates.

[7] Roadway travel times were calculated based on distance and travel speed. Intersection movement delays were calculated using Highway Capacity Manual (HCM) methodology for signalized and unsignalized intersections. Detailed lane geometry, traffic control, roadway cross-section, and roadway travel speed information were required for model accuracy.

FIGURE A

HOUSEHOLD GROWTH (2010 TO 2035) BY TRANSPORTATION ANALYSIS ZONE

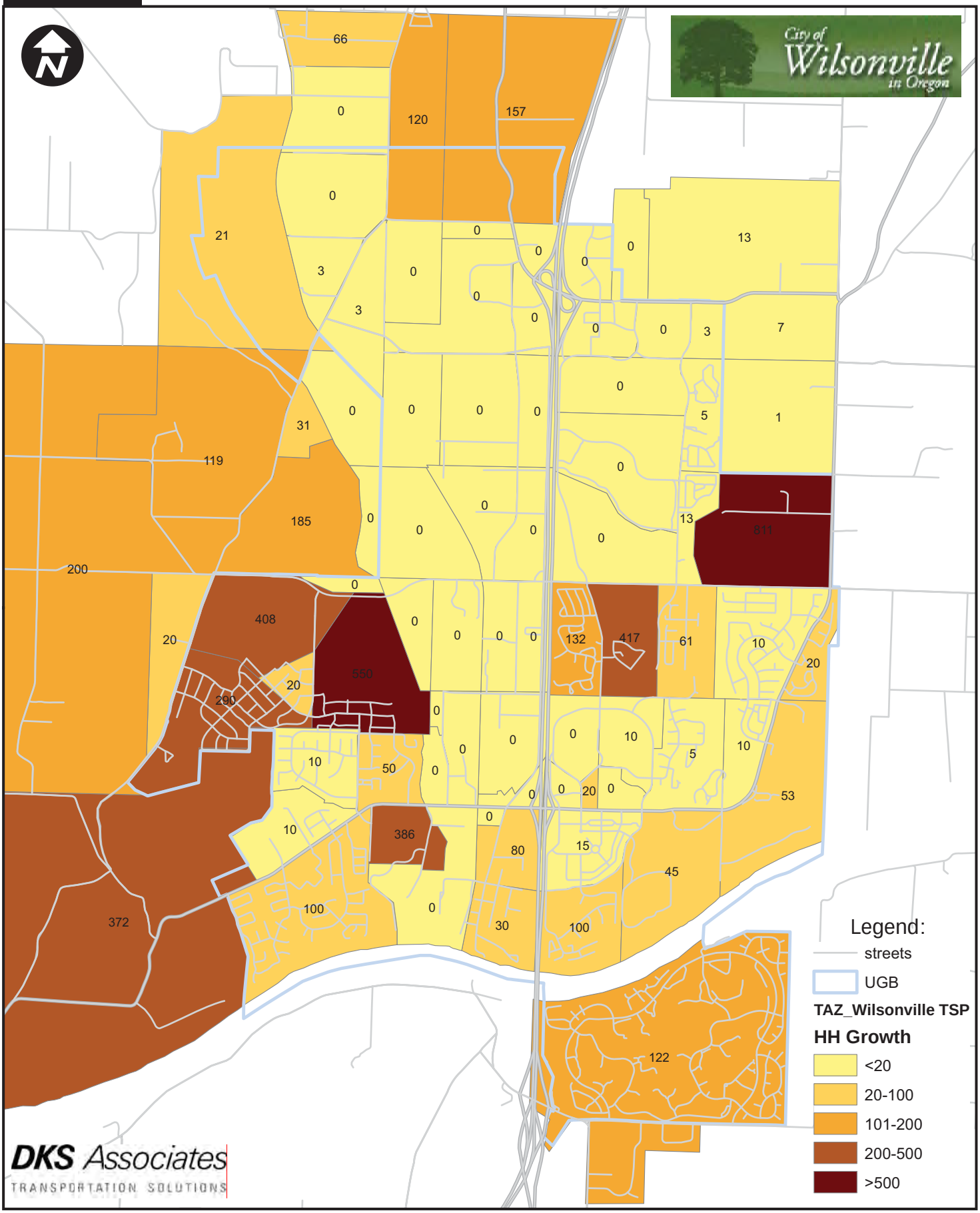


FIGURE B

RETAIL EMPLOYMENT GROWTH (2010 TO 2035) BY TRANSPORTATION ANALYSIS ZONE

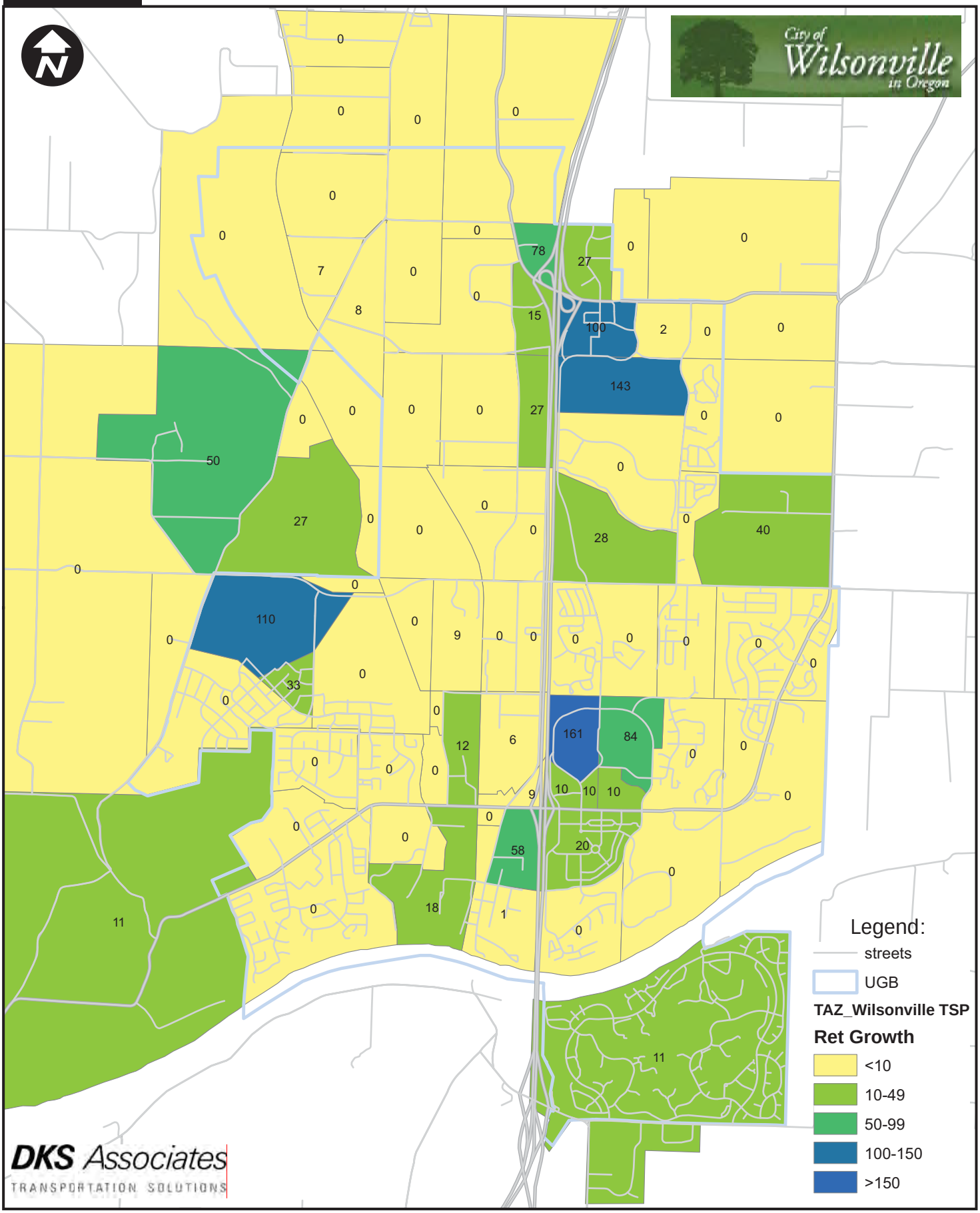
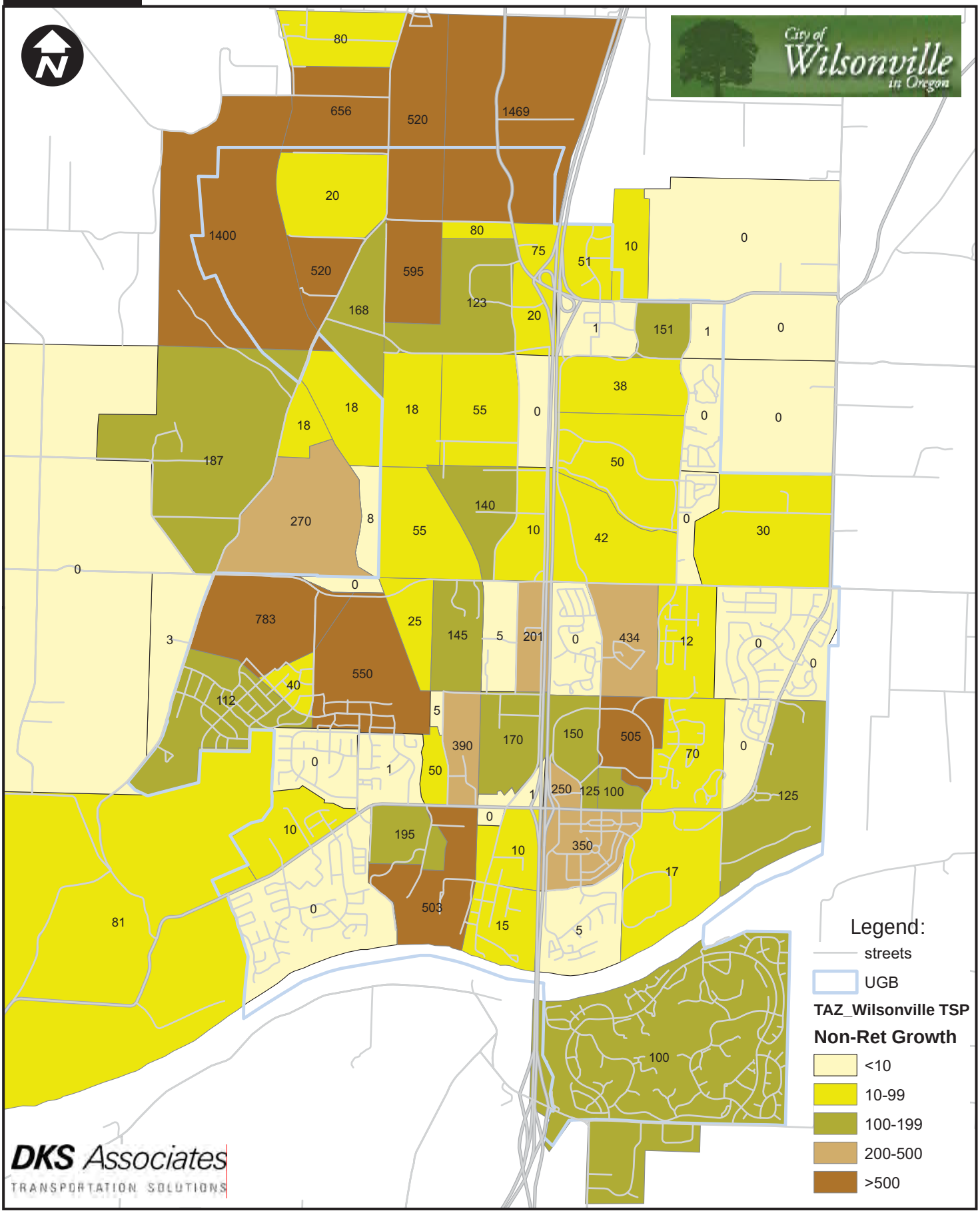


FIGURE C

NON-RETAIL EMPLOYMENT GROWTH (2010 TO 2035) BY TRANSPORTATION ANALYSIS ZONE



Wilsonville TSP Land Use - Growth by TAZ

TAZ	HH Growth	Ret Growth	Non-Ret Growth
890	122	11	100
894	10	0	0
895	408	110	783
896	200	0	0
900	185	27	270
901	0	0	18
902	0	0	25
903	132	0	0
904	0	28	42
905	1	0	0
906	10	0	0
907	5	0	70
1013	0	0	656
1014	157	0	1,469
1016	13	0	0
1017	0	15	20
1018	3	8	168
1019	21	0	1,400
4000	372	11	81
4001	80	58	10
4002	30	1	15
4003	386	0	195
4004	0	0	0
4005	0	0	5
4006	100	0	0
4007	0	0	50
4008	0	18	503
4009	50	0	1
4010	0	9	1
4011	0	6	170
4012	10	0	10
4013	0	12	390
4014	20	33	40
4015	0	0	0
4016	550	0	550
4017	290	0	112
4018	20	0	3
4022	119	50	187
4023	0	0	8
4024	0	0	18
4025	31	0	18
4026	0	0	55
4027	0	27	0
4028	0	0	55

4029	0	0	201
4030	0	0	10
4031	0	0	5
4032	0	9	145
4033	0	0	140
4034	61	0	12
4035	417	0	434
4036	5	0	0
4037	0	143	38
4038	13	0	0
4039	0	0	50
4040	811	40	30
4041	20	0	0
4042	15	20	350
4043	0	10	100
4044	10	84	505
4045	20	10	125
4046	53	0	125
4047	45	0	17
4048	10	0	0
4049	0	10	250
4050	0	161	150
4051	100	0	5
4135	120	0	520
4136	66	0	80
4137	0	27	51
4138	0	100	1
4139	0	2	151
4140	3	0	1
4141	7	0	0
4142	0	0	123
4143	0	0	80
4144	0	78	75
4145	3	7	520
4146	0	0	595
5002	0	0	20
5005	0	0	10

HH = Households
Ret = Retail Employment
Non-Ret = Service & Other Employment
Growth = 2010 to 2035 difference

Appendix F

Transportation System Gaps and Deficiencies (DKS, 2012)

DKS Associates
TRANSPORTATION SOLUTIONS

Technical Memorandum

TO: Project Management Team

FROM: Scott Mansur, P.E., Carl Springer, P.E., Brad Coy, P.E.

DATE: February 9, 2012

SUBJECT: **Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)** P10068-007

The City of Wilsonville's transportation system was reviewed to highlight where the system is not meeting the City's current Transportation System Plan (TSP) policy requirements and where it does not comply with Metro's Regional Transportation Functional Plan (RTFP), which was adopted earlier this year based on a vision of transportation improvement needs through the year 2035. The purpose of the assessment is to help the City of Wilsonville achieve a balanced land use and transportation system that is well-connected, multimodal, safe, and efficient and that serves a variety of needs and provides travel choice.

For each travel mode, a list of expected transportation needs to accommodate future land use growth were noted. To maintain consistency with the approach used for Metro's Regional Transportation Plan (RTP),[1] the needs were categorized as either system gaps or system deficiencies, which are defined in the RTP:

- *"System Gap*. System gaps are defined as missing links or barriers in the 'typical' urban transportation system for any mode that functionally prohibits travel. A gap generally means a connection does not exist at all, but could also be the result of a physical barrier such as a throughway, natural feature, or existing development. A barrier can also be something that prevents an individual or a group from accessing the transportation system, including a lack of information, language, education and/or limited resources."
- *"System Deficiency***.** System deficiencies are performance, design, or operational constraints that limit travel by a given mode. Examples may include unsafe designs, bicycle and pedestrian connections that contain obstacles (e.g., missing ADA---compliant curb ramps, distances greater than 330 feet between pedestrian crossings), low transit frequency, and Throughways with less than six through lanes of capacity or arterials with less than four through lanes that fail to meet performance thresholds defined in RTP Tables 2.4 (Interim Regional Mobility Policy) or 2.5 (Non-SOV Modal Targets)."

The majority of the gaps and deficiencies throughout the City of Wilsonville were identified previously as part of prior planning efforts (i.e., the 2003 Transportation System Plan, 2006 Bicycle

[1] *2035 Regional Transportation Plan*, Metro, June 2010; Page 4-4.

117 Commercial Street NE, Suite 310, Salem, Oregon 97301
(503) 391-8773 | (503) 391-8701 fax
www.dksassociates.com

and Pedestrian Plan, and 2008 Transit Master Plan). Associated improvement projects have already been approved and in some cases have been funded or partially constructed. Two examples of system gaps in Wilsonville are shown in Figure 1 and two examples of system deficiencies in Wilsonville are shown in Figure 2.

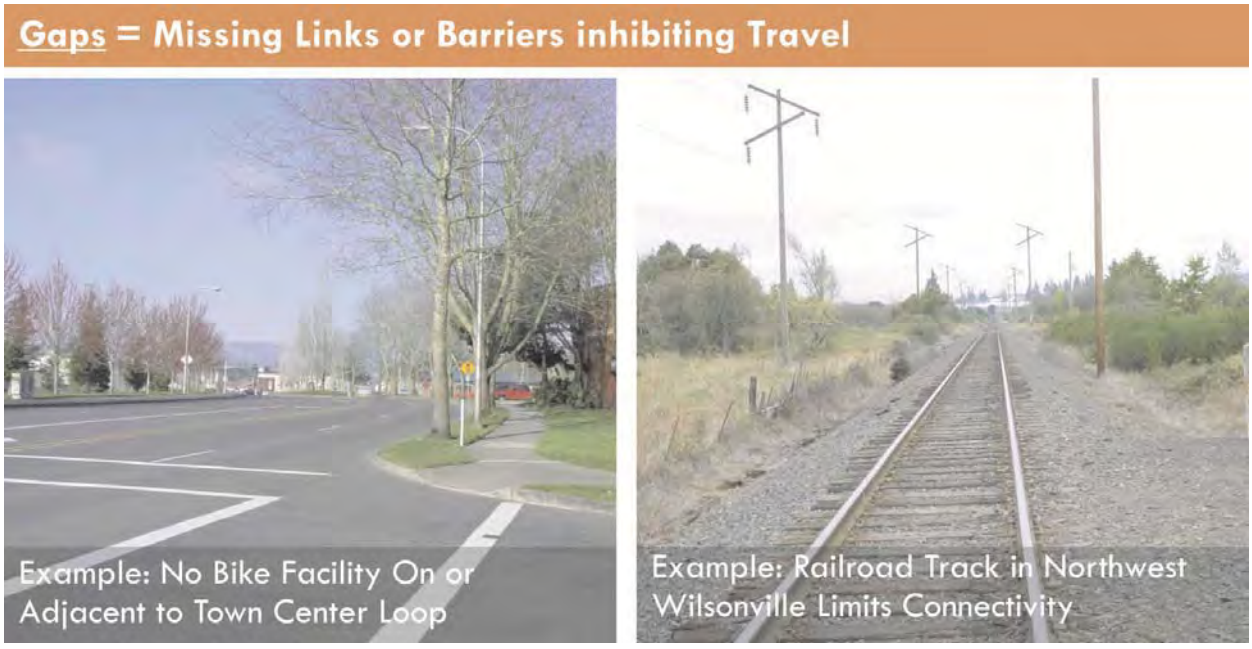


Figure 1: Examples of System Gaps in Wilsonville

Figure 2: Examples of System Deficiencies in Wilsonville

This memorandum reassesses the community's changing needs and identifies areas where improvements are needed to maintain consistency with the new state, regional, and City land use and transportation goals and policies. It also provides information to City policy makers so they are able to provide policy direction to guide the remaining work of this TSP update. The findings in this memorandum will provide the basis for updating the project list for each travel mode, developing other potential system solutions, and prioritizing improvements looking out to the year 2035. These three tasks will all be performed later in the TSP update process.

2035 Land Use Assumptions

Land use development is one of the key contributors that places increased travel demands on Wilsonville's transportation system. The location, density, type, and mixture of land uses have a direct impact on traffic levels and patterns for all travel modes.

Table 1 lists the 2010 and 2035 land use estimates provided by Metro for the City of Wilsonville. The 2035 projections are based on build-out of all vacant and underdeveloped lands within the Urban Growth Boundary (UGB) assuming Comprehensive Plan designations. This includes the build-out of the Villebois, Frog Pond, and Coffee Creek Master Plan Areas. In addition to land use build-out within the City of Wilsonville, Metro assumes some development of the Basalt Creek Master Plan Area as well as other regionally significant developments in the region, particularly west of the City. Figure 3 on the following page provides a summary of the land use growth assumptions, including the locations of development build-out areas.

Table 1: Wilsonville Urban Growth Boundary (UGB) Land Use Summary

Land Use	Existing 2010 Land Use	Projected Growth from 2010 to 2035	Projected 2035 Land Use
Households			
Total Households	**8,244**	**4,492**	**12,736**
Employees			
Retail Employees	2,480	1,114	3,594
Service Employees	4,922	4,292	9,214
Other Employees	11,023	8,040	19,063
Total Employees	**18,425**	**13,446**	**31,871**

Many of the future needs identified in this memorandum will arise as additional development occurs throughout the City. City policies are already in place to ensure that developers contribute to transportation improvement projects as they trigger needs. One important resource for determining appropriate infrastructure contributions is the current TSP. Therefore, to ensure that the City is prepared to respond to the transportation needs of local and regional growth, a 2035 horizon year was used as the basis for the gaps and deficiencies assessment.

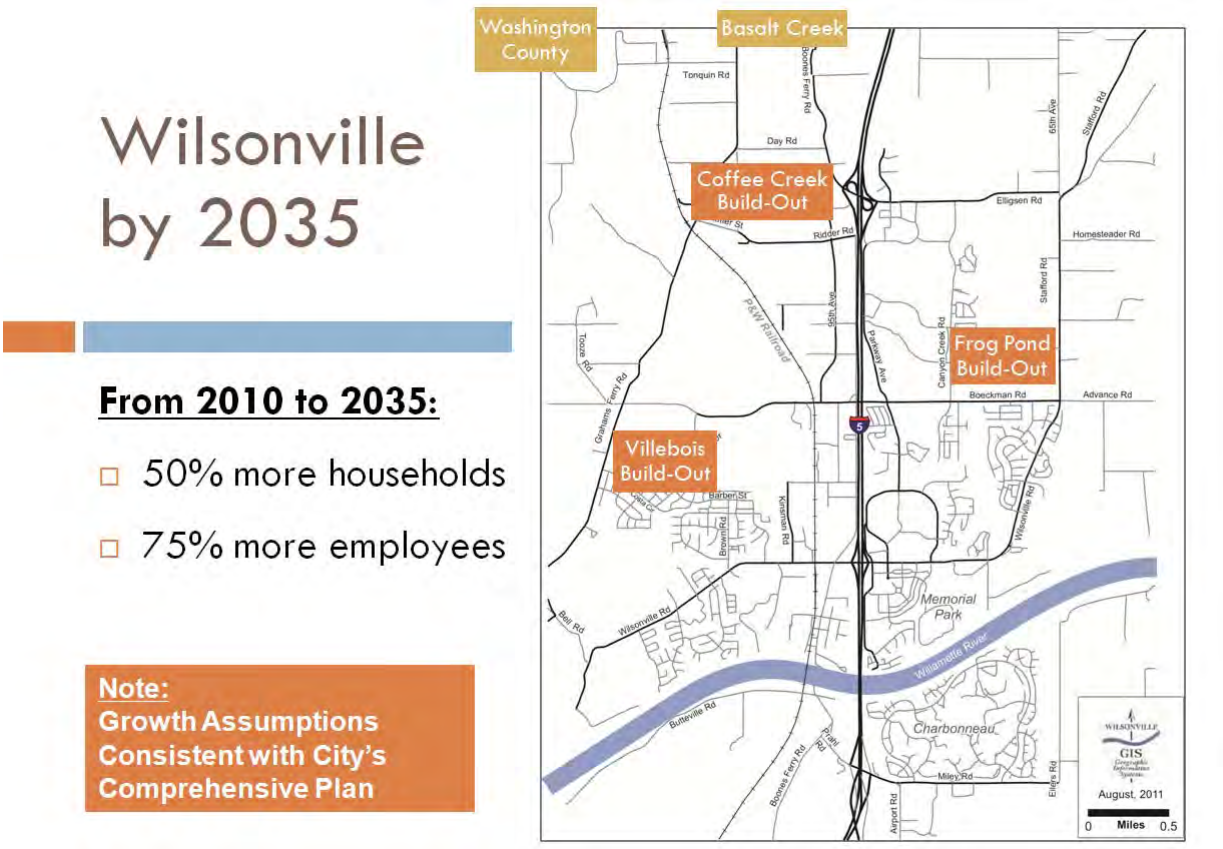


Figure 3: Land Use Growth Assumptions

Street System

The City's street system was reviewed to determine system connectivity gaps, arterial and throughway cross-section deficiencies, and intersection and roadway capacity deficiencies.

System Connectivity Gaps

The Metro RTFP recommends that each City incorporate into its TSP, street connectivity guidelines for a network of major arterial streets at one-mile spacing and minor arterial or collector streets at ½-mile spacing. The guidance does allow for deviations to this spacing based on the presence of significant barriers, which include but are not limited to topography, rail lines, freeways, existing development, and the presence of natural areas.[2] The roadway network spacing guidelines were recommended to support walking, biking, and access to transit, as well as improved connectivity of the arterial roadway system. The City's current TSP already identifies roadway spacing guidelines which are consistent with the Metro RTFP and are shown in Figure 4.

[2] Metro's Regional Transportation Functional Plan (RTFP), Title 1 section 3.08.110(C)

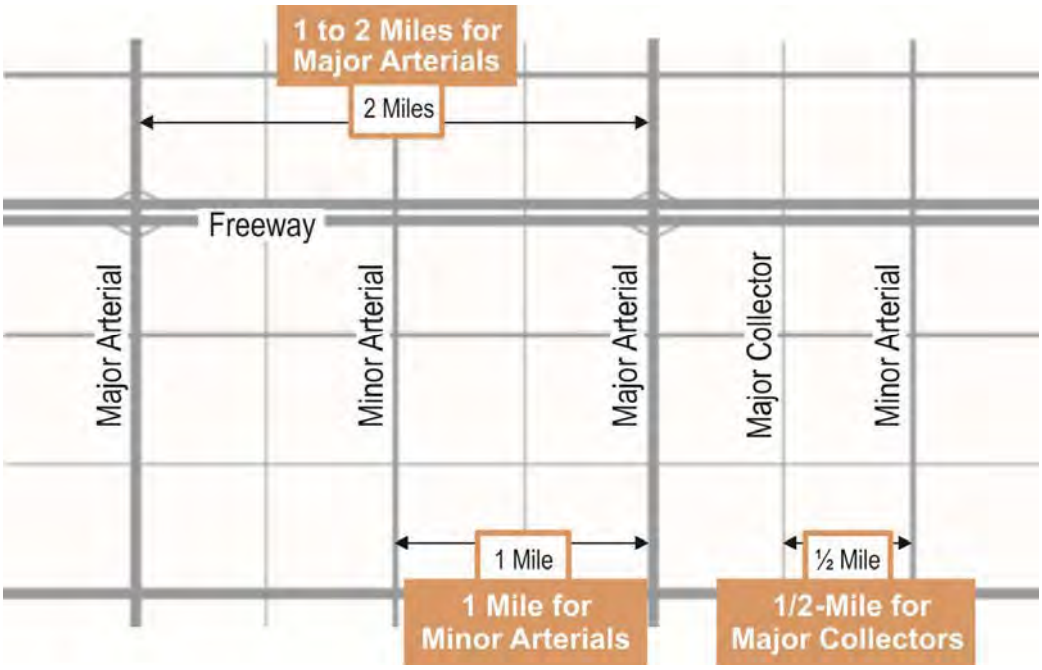


Figure 4: Wilsonville Roadway Spacing Guidelines

Based on the street connectivity guidelines in the RTFP and the City's current TSP, the City of Wilsonville street system was evaluated to identify gaps in the current network. Figure 5 shows the system gaps that currently exist, which are explained below by City quadrant:

- **Northwest Quadrant:** The existing spacing between 95th Avenue and Grahams Ferry Road (north/south) is 0.7 mile to 1.0 mile, which exceeds the recommended 0.5 mile spacing. However, there is a railroad line in this quadrant as well as the Metro Greenspaces Bond Measure acquired lands that would make a future north/south roadway between SW Ridder Road and Boeckman Road problematic. The RFTP provides allowance for a deviation in this quadrant due to these constraints; however, the current TSP identifies the Kinsman Road extension with an at-grade railroad crossing. This new roadway may be reconsidered, with the option of providing a grade-separated railroad crossing.
- **Northeast Quadrant:** The existing spacing between SW Parkway Center Drive/SW Burns Way and Boeckman Road (east/west) is approximately 1-mile, showing the need for a new east/west connector roadway. The City currently owns partial right-of-way along Wiedeman Road, which is a single-lane gravel road that runs east/west for a short distance east of Parkway Avenue. The construction of Wiedeman Road to the City's Collector standard and its extension to Canyon Creek Road and potentially east to Stafford Road is one potential option for improving connectivity in this quadrant.
- **Southwest and Southeast Quadrants:** The system gaps in these two quadrants currently have planned roadway extensions that are in the design phase or are considered imminent or certain due to the critical connectivity needs they satisfy. They will likely be constructed in conjunction with or immediately prior to adjacent land use development.

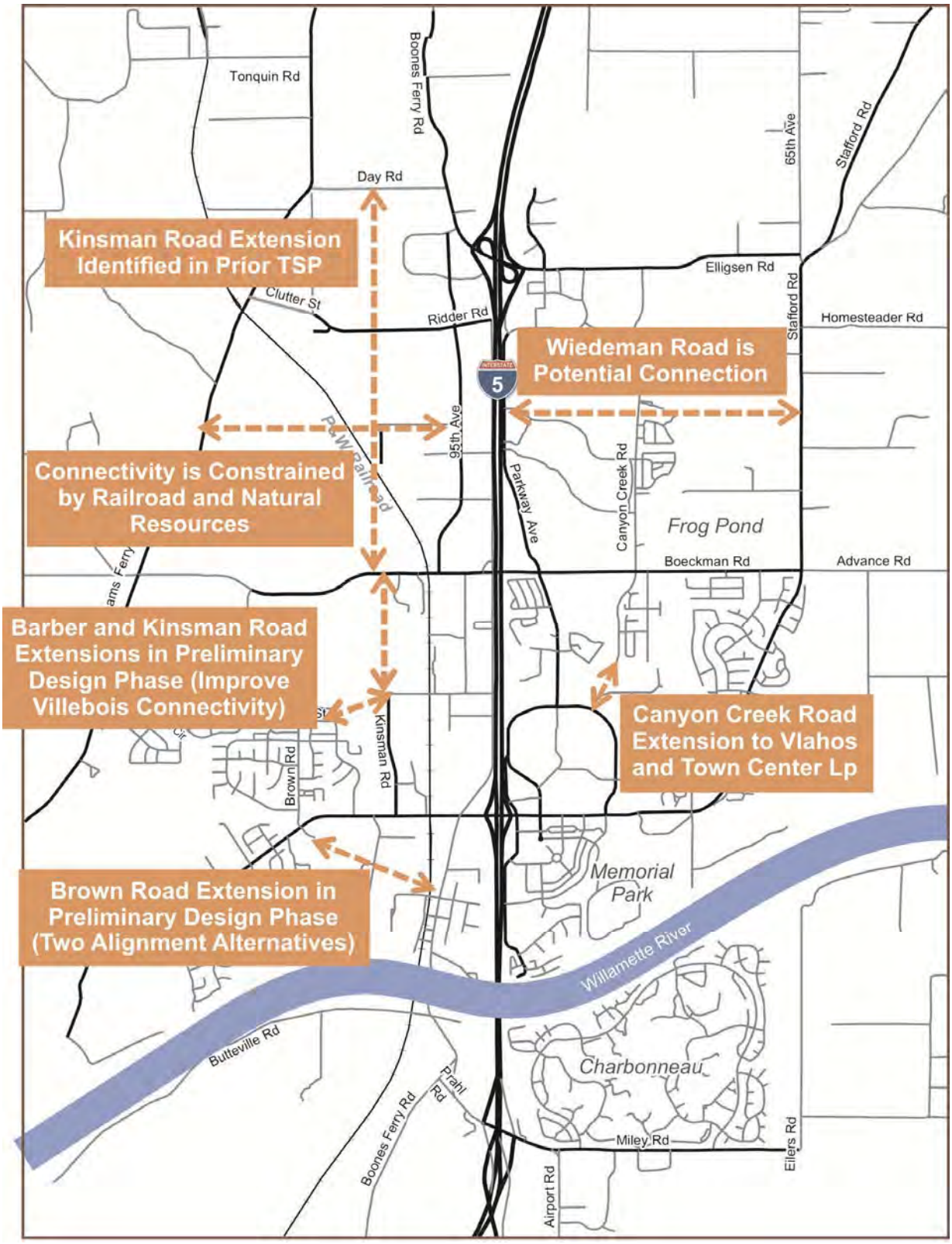


Figure 5: Street System Connectivity Gaps

Arterial and Throughway Cross-Section Deficiencies

The City of Wilsonville's arterial cross-section standards were compared to the Regional Arterial and Throughway Design Concepts, which identify number of travel lanes, presence of bike lanes sidewalks, etc.[3] No cross-section deficiencies were identified.

Intersection and Roadway Capacity Deficiencies

The City's current Transportation System Plan (TSP) identifies roadway extensions, widening, and intersection improvement projects throughout the City. A list of these projects, their current status as of February 2012, and other applicable information are provided in the appendix. The projects that have not yet been completed will be reconsidered as applicable as part of the TSP update.

This memorandum's purpose is to identify gaps and deficiencies for the year 2035. Because future land use growth in undeveloped areas of the City will require key roadway connections, intersection and roadway capacity deficiencies were evaluated for a 2035 Baseline condition, which assumes the completion of those roadway extension or interchange projects under construction, in the design phase, having preliminary design plans, or that are considered to be imminent or certain due to the critical connectivity needs they satisfy. These projects are shown in Figure 6 and include the following:

- I-5/Wilsonville Road interchange improvements (under construction, RTP Projects 10152, 10154, and 10155)
- Barber Street extension from Kinsman Road to Montebello Drive, connecting to Villebois (preliminary design plans, RTP Project 10153)
- Barber Street connection to Grahams Ferry Road (key roadway in Villebois Master Plan Area)
- Villebois Drive connection to Boeckman Road (key roadway in Villebois Master Plan Area)
- Kinsman Road extension from Barber Street to Boeckman Road (preliminary design plans, RTP Project 10130)
- Kinsman Road extension from Ridder Road to Day Road (key roadway in Coffee Creek Master Plan Area, RTP Project 10853)
- Brown Road extension (partial preliminary design plan)
- Canyon Creek Road (majority constructed at time of adjacent residential development)

The traffic volume forecasting methodology is documented in the Forecasting Methodology memorandum,[4] and the resulting 2035 traffic volumes are provided in Figure A in the appendix. Additional appendix materials include Table A, which lists the study intersection[5] performance and applicable mobility standards for the 2035 horizon year, and Figure B, which shows intersections and roadways with performance deficiencies under 2035 land use growth assumptions. In addition, Figure 7 shows the roadway jurisdictions in and around Wilsonville, which affect the applicable mobility standards as well as who will have the ultimate authority over potential improvements.

[3] *2035 Regional Transportation Plan*, Metro, June 2010; Table 2.6.

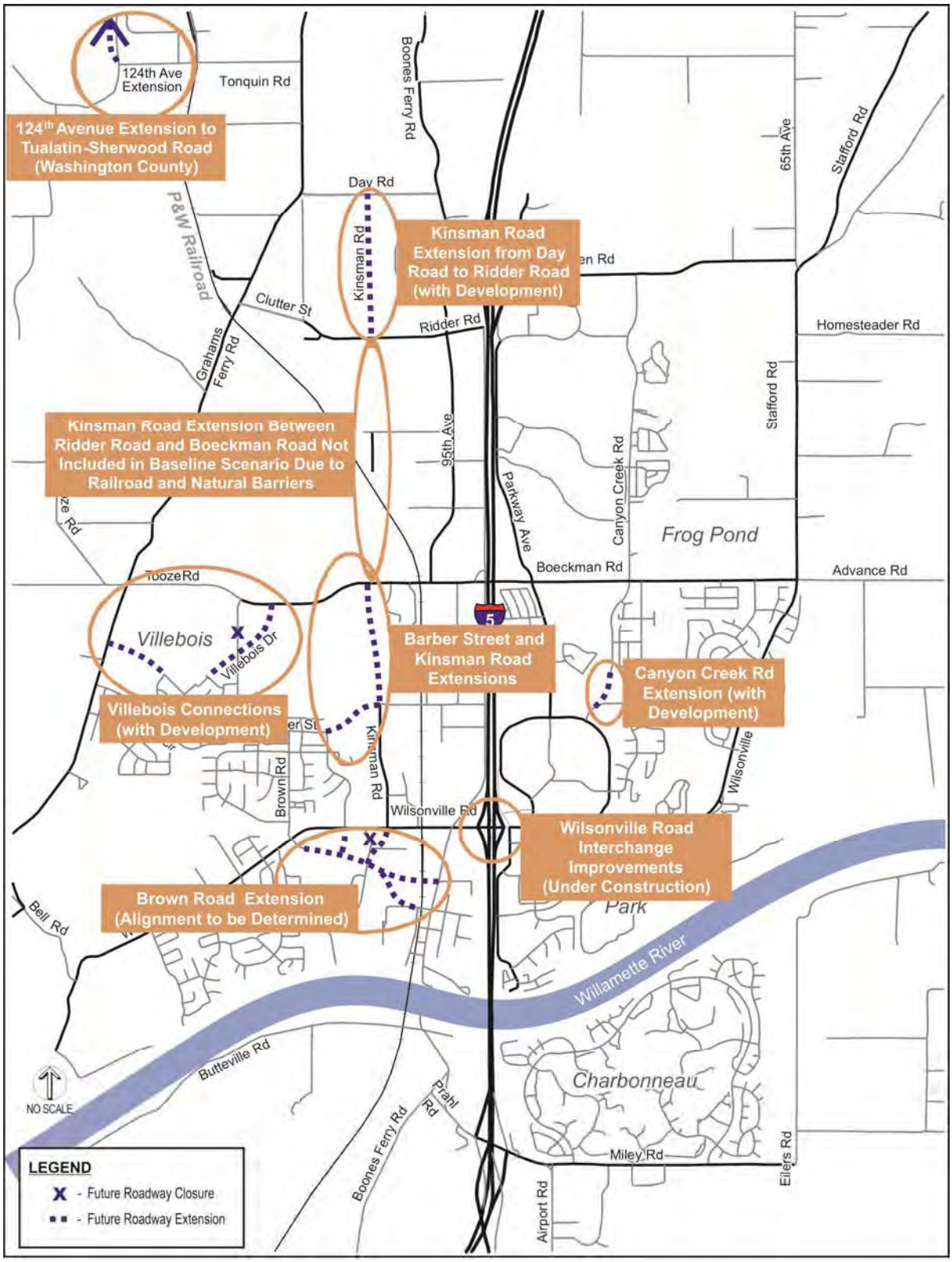


Figure 6: 2035 Baseline Roadway Improvement Assumptions

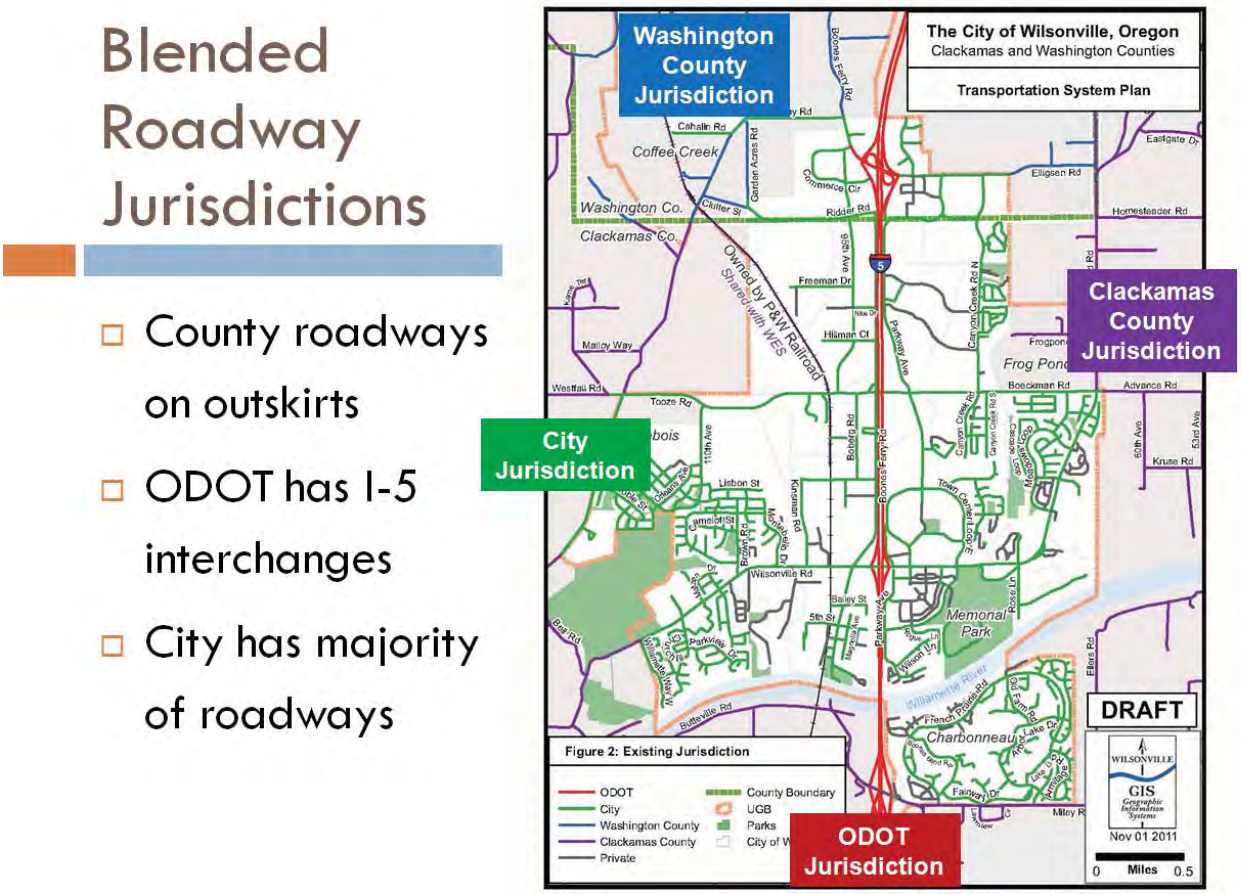
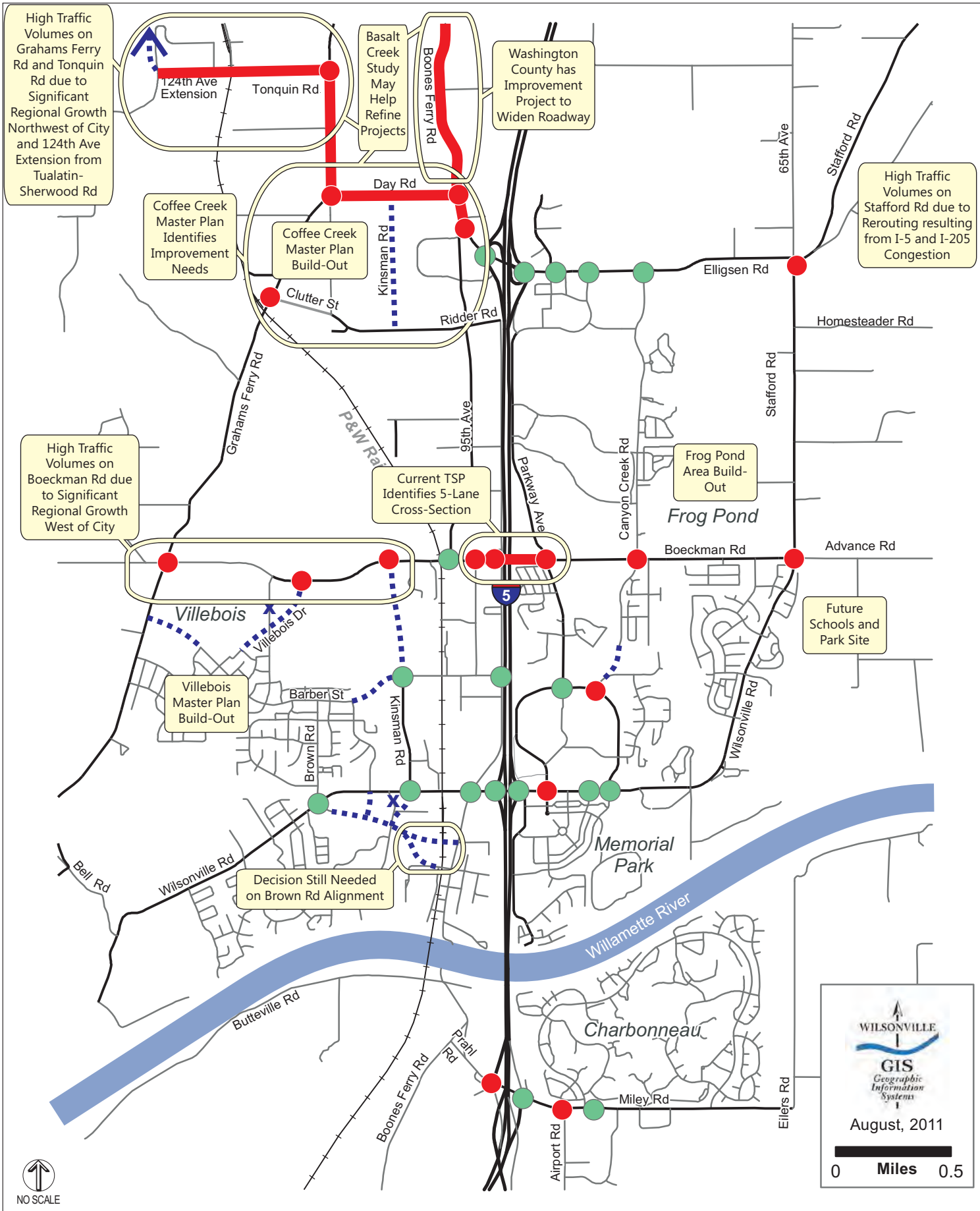


Figure 7: Roadway Jurisdictions In and Around Wilsonville

Intersection and roadway deficiencies are best understood in the context of land use growth and prior planning efforts. Figure 8 identifies the land use growth in and around Wilsonville that was assumed for the 2035 horizon year. It also shows some of the key areas in the City where prior planning work has already identified improvement needs and projects (though it does not identify the roadways in Wilsonville that need to be widened to include turn lanes or upgraded to City standards consistent with their functional classifications). One important area where future development plans are currently being developed is northwest of the City in the Basalt Creek area. A more clear understanding of the level of development of the Basalt Creek area won't be known until after the TSP has been updated; therefore, the City should work with the Basalt Creek project team to ensure that this area's impacts to the City's infrastructure are duly considered.

The primary finding of the operations analysis is that the majority of the intersection and roadway deficiencies in Wilsonville were previously anticipated, and the current TSP and other adopted plans identify improvement projects that were considered appropriate to mitigate the deficiencies. The alternatives analysis that will be performed later in the TSP update process, in conjunction with community public involvement feedback, will help determine any needed project revisions, refinement, and prioritization.



CITY OF WILSONVILLE
Transportation System Plan

2035 Baseline PM Peak Hour Traffic Operations

FIGURE 8

As shown in Figure 8 (and Table A in the appendix), 20 study intersections would not meet adopted mobility standards under the 2035 Baseline scenario (which assumes the completion of the key projects listed on page 7 of this memorandum). Table 2 lists the intersections by jurisdiction. It also lists the current traffic control, improvement need, and roadway improvement projects that have been identified in prior planning work and will be reconsidered as part of the TSP update process.

Table 2: Intersection Capacity Deficiencies and Previously Identified Improvements

Intersection (by Jurisdiction)	Current Traffic Control	Improvement Need	Previously Identified Improvement Projects to Reconsider
City of Wilsonville			
Grahams Ferry Rd/ Day Rd	Signal	Approach capacity (in addition to Day Road expansion)	**Coffee Creek Master Plan:** Add SB left-turn lane (dual lanes); additional eastbound travel lane needed on Day Road
Grahams Ferry Rd/ Clutter Rd	Stop Sign on Side Street	Traffic control upgrade and approach capacity expansion	**Coffee Creek Master Plan Projects T-5, T-6, and T-7:** Add WB and SB left-turn lanes and install signal; realign Clutter Road approximately 500 feet to the north
Grahams Ferry Rd/ Tooze Rd	Two-Way Stop	Traffic control upgrade	**TSP Project S-9:** Install signal
Boeckman Rd/ Villebois Dr	Roundabout	Roundabout expansion or slip lanes	N/A
Boeckman Rd/ Kinsman Rd	Roundabout	Roundabout expansion or slip lanes	**Barber Street and Kinsman Road Extensions Transportation Analysis:** Install single-lane roundabout and acquire right-of-way for future multi-lane roundabout
Boeckman Rd/ Boberg Rd	All-Way Stop	Traffic control upgrade and/or approach capacity	**TSP Project S-21:** Add NB right-turn lane and install signal
Boeckman Rd/ Boones Ferry Rd Access Lp	Stop Sign on Side Street	Traffic control upgrade (in addition to Boeckman Road expansion)	**TSP Project S-24:** Add EB right-turn lane and install signal
Boeckman Rd/ Parkway Ave	Signal	Approach capacity (in addition to Boeckman Road expansion)	**TSP Project S-28:** Add EB and SB right-turn lanes
Boeckman Rd/ Canyon Cr Rd	All-Way Stop	Traffic control upgrade	**TSP Project S-13:** Install signal
Boeckman Rd/ Stafford Rd	All-Way Stop	Traffic control upgrade	**TSP Project S-41:** Install signal
Town Center Lp/ Vlahos Dr	Two-Way Stop	Traffic control upgrade	**TSP Project S-4:** Install signal
Wilsonville Rd/ Town Center Lp W	Signal	Approach capacity	**TSP Project S-29:** Change NB left-through to left only **I-5/Wilsonville Rd IAMP:** Dual SB right-turns

Table 2 continued on next page.

(Continued) Table 2: Intersection Capacity Deficiencies and Previously Identified Improvements

Intersection (by Jurisdiction)	Current Traffic Control	Improvement Need	Previously Identified Improvement Projects to Reconsider
Washington County[a]			
Boones Ferry Rd/Day Rd	Signal	Approach capacity (in addition to Boones Ferry Road and Day Road expansion)	N/A
Boones Ferry Rd/95th Ave	Signal	Approach capacity and queue storage (in addition to Boones Ferry Road expansion); Metro RTP Mobility Corridor #3 identifies intersection spacing issue that causes delay on Boones Ferry Road	**TSP Project S-11:** Add NB right-turn lane (dual rights), EB through pocket, and SB left-turn lane) **Coffee Creek Master Plan:** Add EB right-turn lane (dual rights), WB left-turn lane, and NB left-turn lane (dual lefts) with associated widening of 95th Avenue; also install median on 95th Avenue to modify the Commerce Circle approach to right-in/right-out movements (see TSP Project S-22) **RTP Project 10852:** Construct dual left-turn and right-turn lanes; improve signal synchronization, access management, and sight-distance
Grahams Ferry Rd/Tonquin Rd	Stop Sign on Side Street	Traffic control upgrade and/or approach capacity	**Coffee Creek Master Plan Projects T-10, T-11, and T-12:** Add EB and NB left-turn lanes and install signal
Clackamas County[a]			
Stafford Rd/65th Ave[b]	Stop Sign on Side Street	Traffic control upgrade	**TSP Project S-2:** Add NB left-turn and EB right-turn lanes and install signal; also install signal at the 65th Avenue/Elligsen Road intersection (see TSP Project S-35) **RTP Project 10134:** Improve turn radii, sight distance, and grade differential by combining 65th, Elligsen, and Stafford Rd intersections
Miley Rd/NE Airport Rd[b]	Stop Sign on Side Street	Traffic control upgrade	**TSP Project S-34:** Install signal; adjust lane geometry consistent with widening Miley Rd to four-lanes (see TSP Project W-11)
ODOT[a]			
Miley Rd/I-5 SB Off Ramp[b]	Stop Sign on Side Street	Traffic control upgrade and/or approach capacity	**TSP Project S-19:** Add SB left-turn lane and install signal; also adjust lane geometry consistent with widening Miley Rd to four-lanes (see TSP Project W-11)

[a] The transportation deficiencies at Washington County, Clackamas County, and ODOT jurisdiction intersections should be coordinated with the corresponding agency, and corresponding improvement projects should be included in their transportation plan updates.
[b] Intersection currently exceeds applicable mobility standards (i.e., under 2011 p.m. peak hour conditions).

Roadway capacity improvements are also needed in addition to the intersection improvements. Table 3 lists the roadway capacity needs in Wilsonville (i.e., the roadway segments that would exceed capacity). It also lists the associated roadway improvement projects that have been identified in prior planning work and may be reconsidered as part of the TSP update process. In addition, the Basalt Creek Arterial Transportation study may refine the recommended project list for the I-5/Elligsen Road interchange, Boones Ferry Road, Day Street, and Grahams Ferry Road in north Wilsonville. The roadway capacity improvements listed in Table 3 are expected to be needed at the time that the adjacent areas develop.

Table 3: Roadway Capacity Deficiencies and Previously Identified Improvements

Roadway Segment with Capacity Needs	Current Cross-Section	Previously Identified Improvement Projects to Reconsider
Boones Ferry Road north of 95th Avenue	Typical two-lane roadway; four-lane section for 100 feet north of Day Road	**Coffee Creek Master Plan Project T-9:** Widen Boones Ferry Road north of Day Road to four lanes **Washington County:** Widen Boones Ferry Road to three lanes with bike lanes on both sides and a sidewalk on one side; design will accommodate future five-lane cross-section
	Five-lane roadway with bike lanes on both sides and sidewalk on east side between Day Road and 95th Avenue	**Coffee Creek Master Plan:** Widen Boones Ferry Road south of Day Road to six lanes (i.e., add a third SB through lane that feeds into the I-5 SB Ramp); the SB right-turn lane at 95th Avenue could be converted to a through-right lane
Tonquin Road west of Grahams Ferry Road	Two-lane roadway	Being considered as part of Basalt Creek transportation planning (under Washington County jurisdiction)
Grahams Ferry Road between Day Road and Tonquin Road	Two-lane roadway	Being considered as part of Basalt Creek transportation planning (section north of Clay Street is under Washington County jurisdiction)
Day Road	Three-lane roadway with bike lanes on both sides and sidewalk on south side	**Coffee Creek Master Plan:** No widening specifically identified, but implied by the identification of dual SB left-turn lanes from Grahams Ferry Road onto Day Road **RTP Project 11243:** Reconstruct road to improve structural integrity to accommodate increasing volumes of heavy trucks
Boeckman Road between Boberg Road and Parkway Avenue	Two-lane roadway over bridge structure with bike lanes on both sides	**TSP Project W-4:** Widen to five lanes (includes bridge rebuild); associated improvements also identified at the Boberg Road (S-21), Boones Ferry Ramp (S-24), and Parkway Avenue (S-28) intersections **RTP Project 10132:** Widen Boeckman Road bridge over I-5 to 3 lanes; add bike/pedestrian connections to regional trail system

Public Transit System and Inter-Modal Connections

Wilsonville is home to many large employers such as Xerox, Flir, Rockwell Collins, and others. It will also soon be home to the Oregon Institute of Technology. It's strong employment base and central location between two metropolitan areas (Portland and Salem) results in a strong demand for commuter transportation services and facilities.

As the City's transit provider, South Metro Area Regional Transit (SMART) provides service to Wilsonville's neighborhoods and serves as a connector between multiple transit providers such as TriMet, Salem Cherriots, Canby Area Transit (CAT), and others. It is critical for SMART to provide a transportation hub, frequent commuter service, and convenience for commuters so that it can act as a critical link in the regional transit system. This places a priority on service that connects to regional hubs such as Tualatin Park and Ride, Downtown Portland (MAX-Bus), Clackamas Town Center (Green Line) and Cherriots Transit Center downtown Salem.

Transit Master Plan Projects

The City's 2008 Transit Master Plan identifies transit needs throughout Wilsonville along with numerous projects to meet those needs. A list of these projects, their current status as of February 2012, and other applicable information are provided in the appendix. As the City's transit provider, South Metro Area Regional Transit (SMART) is the City department that is responsible for coordinating and completing these projects. Many of these projects were also included in the Regional Transportation Plan (RTP).

Since 2008, three major transit system improvements have been implemented that provide a backbone to the City's transit service:

- Construction of SMART Central at Wilsonville Station, which is SMART's main transportation hub (includes twelve bus bays, a new facility that includes an operator break room and public restrooms, shelters, and clock tower with security cameras)
- SMART bus routes redesigned to coordinate with WES train departures and arrivals
- Construction and operation of TriMet's Westside Express Service (WES) commuter rail station and 400 space park and ride lot adjacent to the City's SMART Central at Wilsonville Station transit center

Transit Needs

The City can continue to participate with Metro in improving and sustaining the high capacity transit (HCT) system that services the City (i.e., WES Commuter Rail and its connections) by pursuing supportive land uses, high quality pedestrian and bicycle access, management of parking resources, and demonstrated broad-based financial and political support.[6] Four specific needs within the City include ensuring comprehensive service coverage, sufficient bus frequency, safe pedestrian and bicycle access to transit stops, and ongoing public outreach.

[6] *High Capacity Transit (HCT) Expansion Policy Implementation Guidance for the Portland metropolitan region: A guidebook for local implementation*, Metro, July 2011

Comprehensive service coverage can be improved by locating transit stops throughout the City's developed areas so that businesses and residences are within a quarter mile from the nearest transit stop. Currently, as illustrated in Figure 9 (which compares the service coverage documented in the 2008 Transit Master Plan with the existing service coverage), there are only a few areas that are not within a quarter mile of an existing transit stop. These include two of the neighborhoods along the Willamette River (i.e., along Wilson Lane on the east and Willamette Way and Orchard Drive on the west) and the majority of Charbonneau. The Transit Master Plan identified service expansions that would affect these areas, which has not yet been performed, with the exception of the Willamette Way neighborhood. Transit service was previously provided through this neighborhood but was removed based on complaints by neighborhood residents.

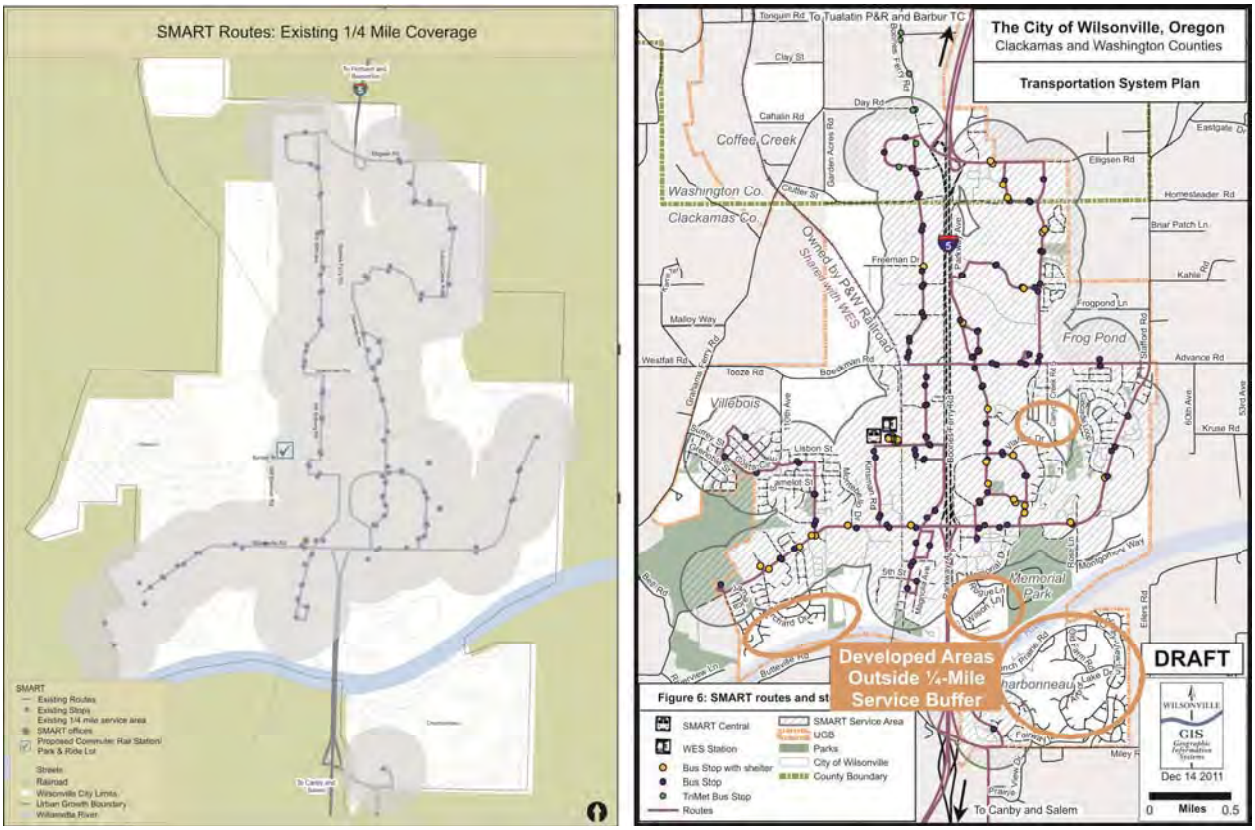


Figure 9: Transit Service Coverage (2008 Transit Master Plan versus Existing[7])

In addition, as the City of Wilsonville grows, the 2008 Transit Master Plan identifies the need for bus service expansion and the construction of transit stop accommodations, specifically in the new development areas of Coffee Creek, Villebois, and Frog Pond. New buses would also be needed to expand coverage and service.

[7] *Wilsonville Transportation System Plan Update – Transportation System Inventory (Task 3.1)*, DKS Associates, November 16, 2011; Figure 6.

Based on direction provided in Metro's RTFP, SMART should continue to give special consideration to the needs of youth, seniors, people with disabilities, and environmental justice populations (including minorities and low-income families) when planning levels of service, transit facilities, and hours of operation. SMART can ensure that it is meeting these considerations by performing employee zip code data analysis and on board surveys. Two areas of particular need are Villebois and Charbonneau. Both areas include environmental justice populations and have requested more frequent transit service.

Transit service would also benefit from complete and safe bicycle and pedestrian networks, with particular emphasis on filling network gaps and improving connections to transit stops (including pedestrian crossings, direct connections to building entrances, and adequate lighting).

Transit stop improvements should be coordinated with adjacent properties, especially at the time of development or redevelopment. In addition, the RTFP indicates that City Code should require commercial development to locate buildings near major transit stops. Pedestrian and bicycle networks that provide access to transit stops and good connectivity to the entire City are important for encouraging increased use of transit, walking, and bicycling, which are complementary travel modes. The primary bicycle and pedestrian system gaps throughout the City are identified later in the Bicycle and Pedestrian System section of this memorandum. In addition, the following transit stops (which are also shown in Figure 10) would benefit from improved amenities in their immediate vicinities:

- Install an enhanced pedestrian crossing on Parkway Avenue at the bus stops adjacent to Pioneer Pacific College and the future location of the Oregon Institute of Technology.[8]
- Install a shelter on Wilsonville Road at Boulder Creek Apartments.
- Install shelters on 95th Avenue at Nike Access Road (both sides) and at Hillman Court (southbound stop).
- Developer to install shelter on Parkway Avenue south of Thunderbird Drive.
- Replace existing shelters with new vandal-resistant, open-air style shelters on Wilsonville Road at Montebello Drive (both sides) and on Wilsonville Road opposite Wilsonville High School.
- Improvements needed at transit stop adjacent to Shari's Restaurant on Park Place just east of Town Center Loop West.

In addition to transit service and stop amenities, many of the projects identified in the 2008 Master Plan consist of ongoing public outreach by SMART to support and encourage transit ridership. On the whole, SMART has been providing the outreach efforts identified. However, keeping up with new technology is an area where improvement is needed. This includes passenger access to 'real time' transit data and improved on-board amenities. Another area that needs improvement is a marketable emergency ride home program.

[8] A prior study by the City (*SW Parkway Avenue Pedestrian Crossing Study*, DKS Associates, July 10, 2008) identified a recommended improvement concept; however, a more cost effective option that should be considered includes the installation of rectangular rapid flashing beacons (RRFBs) instead of an overhead flasher. An improvement at this location will become more important with increased occupancy of the adjacent vacant buildings on the east side of Parkway Avenue.

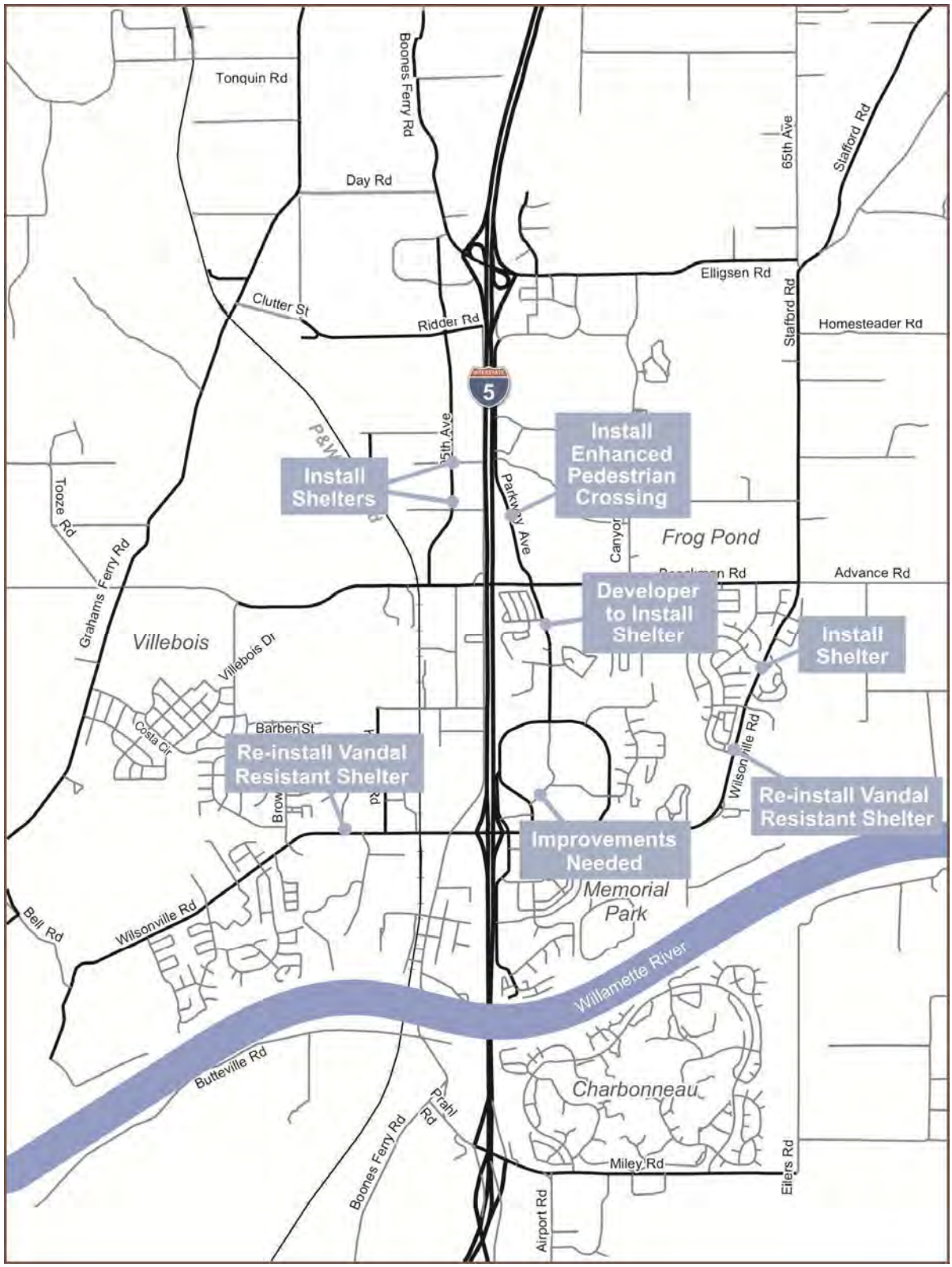


Figure 10: 2035 Baseline Roadway Improvement Assumptions

Some additional transit-related needs include the replacement of older buses, the installation of transit information displays at the transit stations and key bus stops, and continued coordination with TriMet, Salem Cherriots, and Canby Area Transit (CAT) regarding service needs and transfers between providers. Maintaining a quality transit fleet is critical to the transit system, and an updated fleet replacement plan is being developed and will be presented to the City Council for approval in early 2012.The increased use of available technology will also be of benefit in improving the services provided by SMART. Having real-time transit information helps potential riders make more informed travel decisions and can contribute to improved mobility, reliability, safety, and accessibility in and around Wilsonville.

Future Vision

One of the greatest challenges for SMART, as for most smaller-city systems, is how to meet the needs while maintaining or increasing system efficiency. While this is particularly important with the current economic climate, it's also important for the future of SMART and its ability to keep pace with the region. Three areas of focus for envisioning a more efficient future include:

- **Information Technology** – One of the key pieces to understanding how to enhance efficiency is to understand existing performance measures and communicate with passengers quickly as well as enhance integration with regional providers. Key investments in new innovative systems could provide new venues to communicate with passengers, coordinate our service in-real time with other providers and options, and provide an enhance understanding of operational metrics and measures.
- **Developing Hubs (land use/transportation)** – SMART has only marginally been interested in and integrated into long-range city planning. Notwithstanding the traditional ridership benefits of land use/transit integration, there are substantial benefits to the City overall (both in terms of regional support and grant opportunities) to developing key transportation activity centers and then focusing technology, transit service, transportation options, and other associated transportation expenditures to enhance high levels of connectivity, mobility, and "sense of purpose/place" in these area. These hub areas needn't require a significant new planning effort, but could be focused on existing gathering spots (coffee shops, community centers, schools, etc) and other key areas within the community. These areas may require minimal infrastructure improvements, such as a large concrete area for stops, space for zip car or electric car, bike parking, real time information access to internet/fiber optic line, etc.
- **Service Innovation** – Wilsonville offers an opportunity to explore new transportation and service options that can better serve its emerging urban community. While the traditional use of services like car-sharing may not have the densities necessary to succeed, the flexibility and redefinition of transportation provides opportunities for this forward thinking community. The opportunity to test new options and find flexible new services in Wilsonville is high and could provide a key model for the future.

Bicycle and Pedestrian System

Bicycle and pedestrian facilities have the potential to offer complete community connectivity and interrelated opportunities for work, play, shopping, and exercise for residents, employees, and visitors in and between every neighborhood, retail center, employment center, and recreational area in the City. They help reduce traffic congestion, vehicle-miles traveled, and green-house gas emissions, while increasing the vibrancy of communities and improving the health of City residents.

The City's 2006 Bicycle and Pedestrian Master Plan identifies pedestrian and bicycle gaps and deficiencies throughout Wilsonville. Based on an assessment of system needs through 2035, this evaluation is still considered comprehensive. The Master Plan also identifies 70 projects in a hierarchy of both on- and off-street pathway types to fill the gaps and improve the deficiencies. A list of these projects, their current status as of February 2012, and other applicable information are provided in the appendix along with a copy of the projects figure from the 2006 Bicycle and Pedestrian Master Plan.

Of the 70 Bicycle and Pedestrian Master Plan projects, ten have been completed and 15 have been partially completed. In most instances, the completed projects (and portions of the partially completed projects) were constructed along with roadway improvements or the development of fronting parcels. There were also multiple park trail improvements completed, particularly in the Graham Oaks Nature Park. Many of the uncompleted projects will likely not be completed until roadway improvements are constructed or adjacent parcels develop. However, the projects shown in Figure 11 address the most important system gaps and deficiencies and would be beneficial for the City to pursue independent of roadway improvement projects. These same projects are also identified in more detail in Table 4 (deficiencies) and Table 5 (gaps).

Table 4: Bicycle and Pedestrian Deficiencies and Projects to Pursue Independent of Roadway Improvements

Bicycle and Pedestrian Deficiency	Previously Identified Improvement Projects to Reconsider
Improved connectivity to, from, and within Town Center to reduce short auto trips from adjacent neighborhoods and improve pedestrian access to transit	**Bike and Pedestrian Master Plan Project C1:** Retrofit sidewalks with curb ramps and improve existing multi-use and sidewalk facilities as needed within the Town Center area **RTP Project 11343:** Design & construct a variety of pedestrian improvements to enhance access to transit within the Town Center area
East-west connection between Boones Ferry Park and Memorial Park along north bank of Willamette River to improve regional trail network	**Bike and Pedestrian Master Plan Project R4a:** Improve condition of Waterfront Trail/Interstate-5 undercrossing trail by removing Jersey barriers, installing bollards, widening the trail to 10 feet, adding appropriate pedestrian features such as benches, and altering the grade of the path underneath the underpass to make it more easily accessible

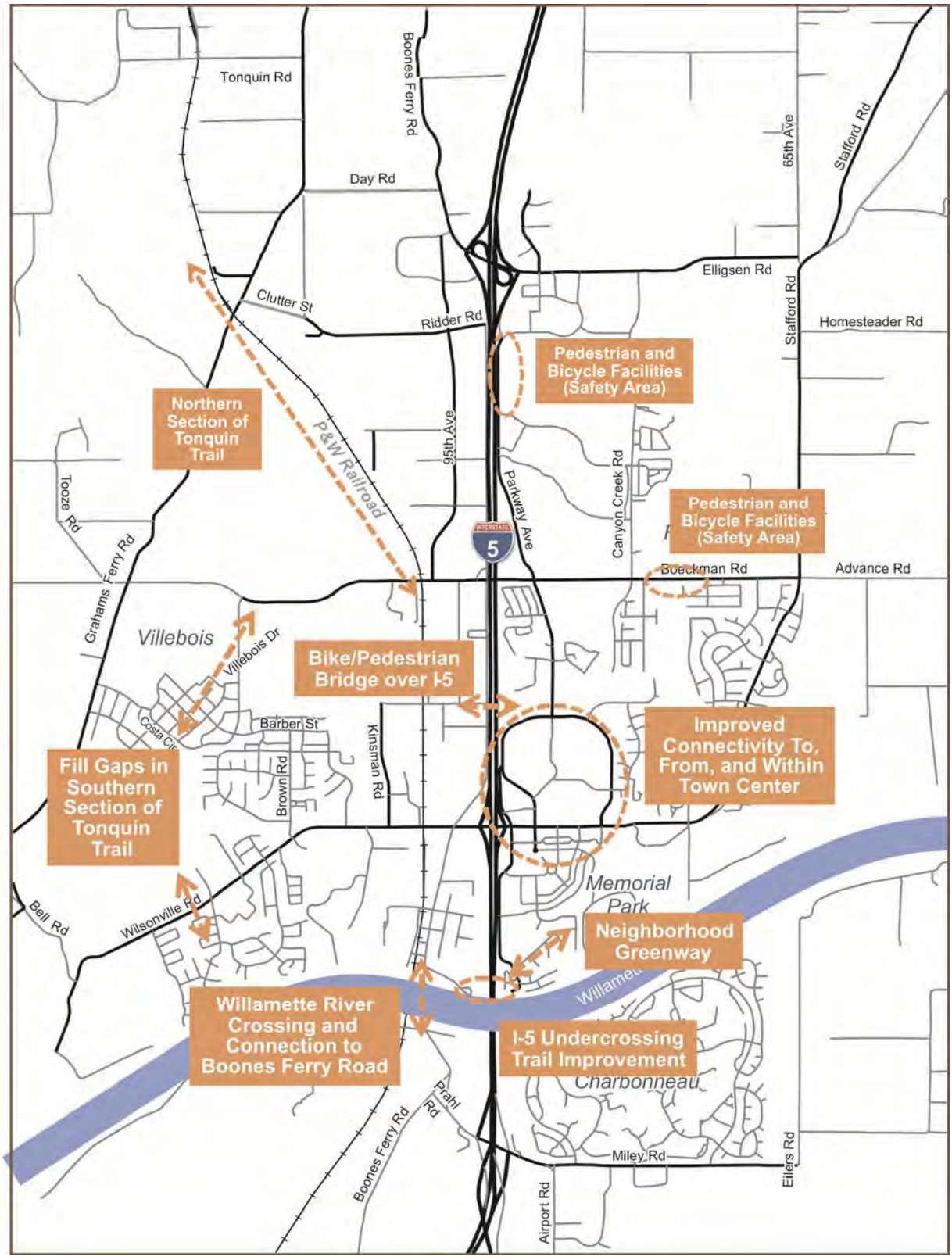


Figure 11: 2035 Stand-Alone Bicycle and Pedestrian Projects

Table 5: Bicycle and Pedestrian Gaps and Projects to Pursue Independent of Roadway Improvements

Bicycle and Pedestrian Need	Previously Identified Improvement Projects to Reconsider
Improved connectivity to, from, and within Town Center to reduce short auto trips from adjacent neighborhoods	**Bike and Pedestrian Master Plan Project C1:** Construct sidewalks where there are current gaps in the Town Center Loop area **Bike and Pedestrian Master Plan Project C2:** Construct shared use path on east side of Town Center Loop West from Wilsonville Road to Parkway Avenue **RTP Project 11343:** Design and construct a variety of pedestrian improvements to enhance access to transit in the Town Center Loop area
East-west connection across Boeckman Creek to fill important system gap	**Bike and Pedestrian Master Plan Project C9**: Construct pedestrian and bicycle facilities on Boeckman Road from Canyon Creek Road to Wilsonville Road; do so in a way that accommodates future widening of Boeckman Road
North-south connection between industrial campuses and Elligsen Road to fill important system gap	**Bike and Pedestrian Master Plan Project C40:** Construct sidewalk on one side and bike lanes on both sides Parkway Avenue from Xerox Drive to Parkway Center Drive; do so in a way that accommodates future widening of Parkway Avenue
North-south connection to all uses in west Wilsonville to fill gap in regional trail network and provide important recreation facility	**Bike and Pedestrian Master Plan Project R1:** Construct portions of Tonquin Trail where there are existing gaps **RTP Project 10092:** Construct shared use path with some on-street portions from Washington/ Clackamas County line to Boones Ferry Landing with connections with west Wilsonville, Coffee Lake Natural Area, Villebois, and the Grahams Oak Natural Area.
East-west connection between Boones Ferry Park and Memorial Park along north bank of Willamette River to fill gap in regional trail network and provide important recreation facility	**Bike and Pedestrian Master Plan Project R4:** Provide neighborhood greenway treatments on roads connecting Waterfront Trail to Memorial Park (Chia Loop, Kalyca Drive, Willamette Bank Drive, and Wilson Lane); options include sharrows, sidewalk improvements, and guide signs
East-west connection across I-5 to connect Town Center and SMART/WES stations	**Bike and Pedestrian Master Plan Project C4:** Construct bicycle/pedestrian bridge over I-5 in the vicinity of Town Center Loop and Barber Street (just north of I-5/Wilsonville Road Interchange)
North-south connection across Willamette River to fill significant gap in regional trail network	**Bike and Pedestrian Master Plan Project R5:** Construct Willamette River Bike and Pedestrian Bridge; various optional locations for this bridge were identified and evaluated in Chapter 6 of the plan; this project is regionally significant and should be coordinated with regional partners; $1.25 million of Federal funding available for Fiscal Year 2012/2013 **RTP Project 10133:** Construct new bridge crossing the Willamette River for use by bicycles, pedestrians, and emergency vehicles; would connect the regional Tonquin Trail to the North Willamette Valley parks and recreation areas
North-south connection to fill gap between current system and future bridge or ferry over Willamette River	**Bike and Pedestrian Master Plan Project C17:** Construct bike lanes and sidewalks on sections of Boones Ferry Road from Bailey Street to Boones Ferry Park where there are gaps or deficiencies; these facilities become critical once ferry starts operating or bridge is constructed over Willamette River

Additional bicycle and pedestrian gaps and deficiencies have also been identified as part of the Safe Routes to School assessment that the City is currently performing in collaboration with the West Linn-Wilsonville School District and each of the City's primary and middle schools. Table 6 lists the identified sidewalk and bicycle gaps and deficiencies along with vehicular barriers.

Table 6: Safe Routes to School Gaps and Deficiencies

Gaps and Deficiencies (by School)	Specific Needs
Boones Ferry Primary	
Sidewalk Gaps	• Missing sidewalk link: Eastern edge of Willamette Way E (school entrance, near track area) just north of Wilsonville Road. • Missing sidewalk link: Western edge of Willamette Way E, south of Chantilly.
Sidewalk Deficiencies	• In parking area, there is no formal sidewalk with physical separation (curb, etc.) along the fire lane, just a painted line. • Walking path from Hazelwood ends in Wood Middle School parking lot with no guided route through parking lot to the school. • Lighted crosswalk beacons similar to those in front of Wood Middle School.
Bicycle Gaps	• Create a biking route all the way to school: Currently, bikers are asked to walk their bikes on the sidewalk once at the school.
Bicycle Deficiencies	• Cover the bike parking for weather protection.
Vehicular Barrier	• Speeding auto traffic on Barber Street from Brown Road to Villebois Drive.
Inza R. Wood Middle School	
Bicycle Gaps	• Bike route needed from Wilsonville Road all the way to the bike racks. This could be located along either side of the main entry driveway; SW edge has existing sidewalk and row of trees, NE edge of driveway is flat and grassy with no vegetation, but a crossing would still be needed to go back to the SW edge of driveway to get to bike racks and school building entrance.
Bicycle Deficiencies	• Cover the bike parking for weather protection.
Boeckman Creek Primary	
Sidewalk Deficiencies	• Small sidewalk from Wilsonville Road to front door of school for combined bicycle and pedestrian travel gets crowded.
Bicycle Gaps	• Create a biking route all the way to school: Currently, bikers are asked to walk their bikes on the sidewalk once at the school. This could potentially be accommodated by widening existing sidewalk along southern edge at entrance road and/or adding a second pathway to the south on the other side of the trees that would route bicyclists away from pedestrians. This could connect to the marked crosswalk and existing bike parking.
Vehicular Barrier	• Traffic patterns crossing immediately in front of the school: Automobiles, buses, pedestrians, and bicyclists. • Add lighted crosswalk beacons at entrance on Wilsonville road to raise awareness.

In addition to the bicycle and pedestrian infrastructure improvements, there is also a need for improved street cleaning and related maintenance at the I-5/Elligsen Road interchange, I-5/Wilsonville Road interchange, and the I-5 Boones Bridge over the Willamette River. These facilities serve as primary connections over the City's two main barriers to pedestrian and bicycle travel, which are Interstate-5 (running north-south and bisecting the City) and the Willamette River (separating the majority of the City with the Charbonneau development and the rural areas to the south). Even though these roadways have a mix of shoulders, sidewalks, or bike lanes, the current funding limitations at ODOT have resulted in lower than desired maintenance levels. Therefore, there is a need for improved cleaning or maintenance agreements between the City of Wilsonville and ODOT to ensure clean and safe conditions for pedestrians and bicyclists on these roadways. These needs were also identified in Chapter 6 of the Wilsonville Bicycle and Pedestrian Master Plan.

Another pedestrian and bicycle need that affects the City of Wilsonville is regional access to the nearby communities. If people are able to travel *to* or *from* the City by foot or bicycle, then they are more likely to travel *within* the City by the same mode. Sidewalks would also be beneficial on roadways that connect to adjacent communities or nearby residences. The following rural roadways on the edges of the City would especially benefit from wider shoulders that would better serve pedestrian and bicyclists traveling to and from the City:

- Advance Road
- Stafford Road
- Grahams Ferry Road
- Bell Road
- Wilsonville Road (sections outside City limits)
- Boones Ferry Road (sections outside City limits)

For example, Washington County is currently designing improvements to Boones Ferry Road north of Day Road. These improvements will include bike lanes in both directions and sidewalks on one side that will provide enhanced connectivity to the rural area between the cities of Wilsonville and Tualatin. The City should coordinate with Clackamas County and Washington County to ensure that needed bicycle and pedestrian improvements on County roadways are identified in their County Transportation System Plan (TSP) updates and that these facilities connect to the City's bicycle and pedestrian systems.

Freight System

The City of Wilsonville currently does not have its own freight plan or designated freight routes, but instead has relied on County and Metro designated routes. As a major employment center and industry hub along Interstate-5 (I-5), the City and its freight community would receive the following benefits from having its own freight plan:

- **Freight Route Improvements:** The plan would ensure an interconnected system of freight routes within and throughout the City and would identify specific freight-related design deficiencies along those routes. By addressing these deficiencies, the City would improve freight reliability.

- **Coordination with Other Modes:** The freight plan would allow improved coordination with other planning efforts, particularly the bicycle and pedestrian planning and Safe Routes to School plans that will be prepared as part of the TSP update. Pedestrians and bicyclists are particularly susceptible to freight conflicts; therefore, they would benefit from planning efforts that ensure adequate transportation facilities for all users or provide separate bike/pedestrian and freight routes where possible.
- **Coordination with Adjacent Jurisdictions:** The freight plan would improve how regional freight traffic travels through the City. The City's freight plan would be a valuable resource that informs neighboring agencies which roadways the City of Wilsonville intends to be used by freight traffic and has designed to accommodate freight needs. This agency coordination will be especially beneficial for regional freight planning and land development near Wilsonville's borders.

The first step of preparing a freight plan involves identifying the City roadways currently used by freight carriers and the freight-related deficiencies and problem locations on these roadways. To obtain this information, surveys were distributed to the freight carriers throughout the City. In addition, a meeting was held with the Allied Waste commercial and residential drivers, who service the entire City and have a particularly extensive understanding of the City's freight needs. City staff was also consulted. Figure 12 identifies the City streets where freight vehicles are present. It also identifies the key gaps and deficiencies that were identified based on the feedback received.

The following additional feedback, which is more general in nature, was also provided by the freight carriers:

- Flashing yellow left-turn arrows at traffic signals are preferable to the typical doghouse style green balls.
- Where possible, it is important to separate trucks from pedestrians and bicycles (especially on roadways and at tight intersection corners).
- There are inconsistent speeds on similar functioning roadways (for example, Boones Ferry Road versus Parkway Avenue).
- When trucks must wait off-site to access busy on-site loading docks, they block traffic.
- Improved loading areas and site access at retail establishments would aid delivery.
- There are limited direct routes exist between north and south Wilsonville.

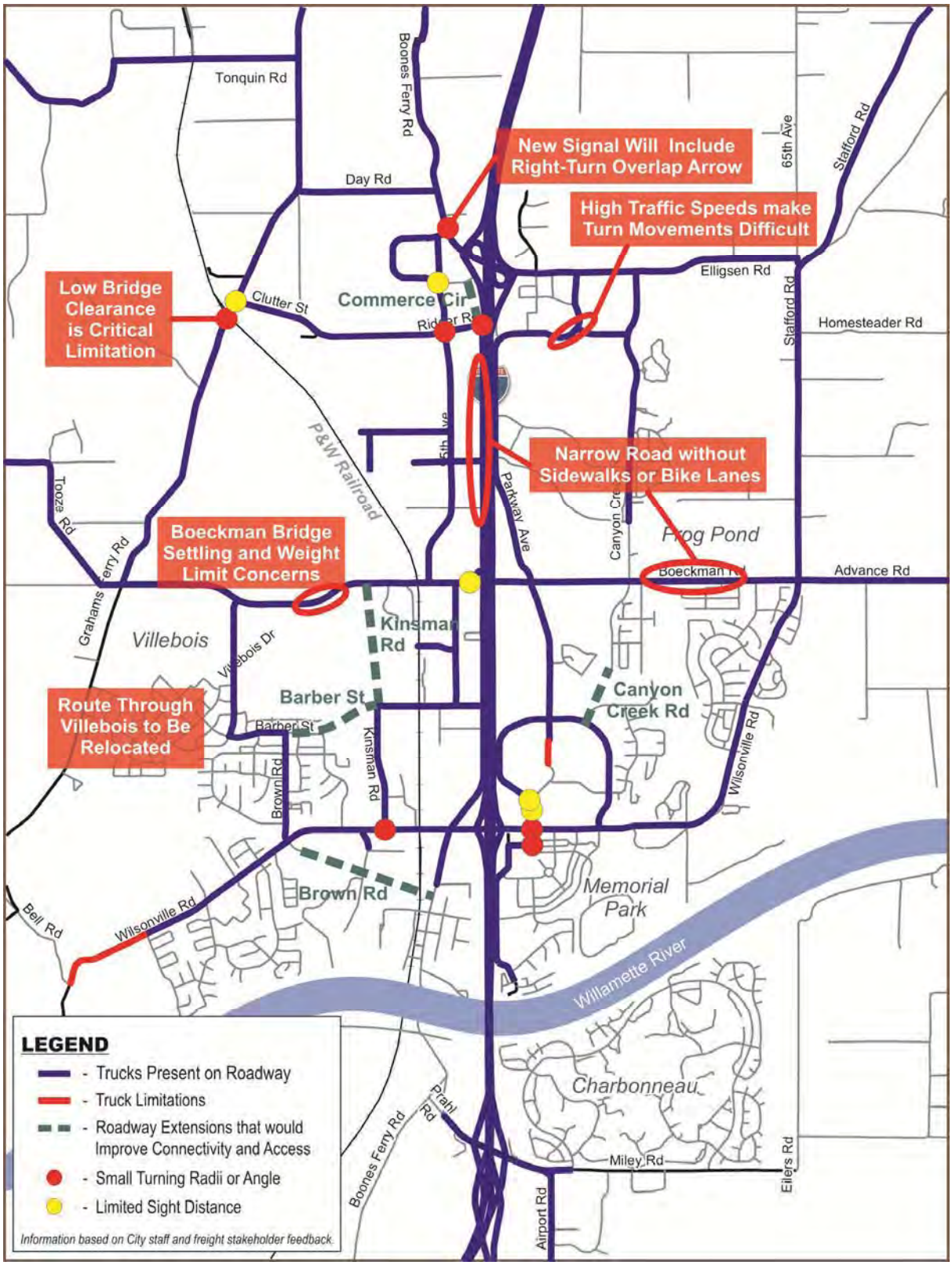


Figure 12: Freight System Gaps and Deficiencies

Rail System

The primary rail system deficiency in Wilsonville that affects the Portland and Western Railroad (PNWR) line is the limited vertical and horizontal clearance experienced on Grahams Ferry Road where it crosses under the existing railroad bridge. This safety deficiency is discussed in the Safety Concerns section of this memorandum.

Another future item that may affect the City of Wilsonville is that ODOT Rail has been studying the feasibility of improving intercity rail service between Eugene and Portland (with the potential for developing a high-speed rail line). The 2010 Oregon Rail Study[9] identifies PNRW's Oregon Electric (OE) line, which runs through Wilsonville, as one of two existing rail alignments that was studied. The other alternative alignment is the Union Pacific Railroad (UPRR) line, which runs through Oregon City and currently carries three daily roundtrip Amtrak passenger trains (two *Cascades* commuter trains during the peak hour hours and the *Coast Starlight* train). The 2010 Oregon Rail Study indicates that the OE line alternative would have many benefits, including attracting more riders, being less expensive to construct, and improving PNRW freight service without risking on-time performance of the passenger trains. The UPRR line would also benefit from the transfer of passenger rail service to the OE line for because it would free up rail capacity on the UPRR line for additional freight service.

ODOT Rail has a policy of not granting new at-grade crossings. Crossings may be relocated (i.e., a new one is provided but only if an old one is removed). Therefore, railroad tracks can pose a significant barrier that is very expensive to fix due to the need to typically go over or under. The primary location in Wilsonville where the railroad contributes to a roadway system gap is in the northwest quadrant (see the prior System Connectivity Gaps section of this memorandum for additional discussion).

Air, Water, and Pipeline Systems

No additional air, water, or pipeline transportation facility gaps or deficiencies have been identified for the City of Wilsonville. However, a high-pressure natural gas mainline pipe exists in the vicinity of the Interstate-5 corridor. The location of this pipeline may impact a project's feasibility or limit available improvement options in its vicinity.

Safety Deficiencies

As previously documented in the Transportation System Inventory memorandum,[10] there are no high-collision locations within the City of Wilsonville. However, various safety-related deficiencies were identified in Wilsonville as part of the current Wilsonville TSP, the Coffee Creek Industrial

[9] *2010 Oregon Rail Study*, ODOT Rail Division, 2010
[10] *Wilsonville Transportation System Plan Update – Transportation System Inventory (Task 3.1)*, DKS Associates, November 16, 2011.

Master Plan,[11] and the Metro RTP Mobility Corridor #3 Needs (Tigard to Wilsonville). A few additional safety needs were also identified.

The safety deficiencies in Wilsonville are listed in Table 7, along with any previously identified improvements. Figure 13 also shows the locations of these safety deficiencies.

Table 7: Safety Deficiencies and Previously Identified Improvements

Safety Deficiency Location	Description of Need	Previously Identified Improvement Projects to Reconsider
Grahams Ferry Road Grade Separated Railroad Crossing; identifies height	Substandard vertical and horizontal clearance on Graham's Ferry Road at the undercrossing of the Portland and Western Railroad	**Coffee Creek Master Plan Safety Project and Metro RTP Mobility Corridor #3 Need:** Reconstruct existing grade-separated under-crossing to City of Wilsonville Minor Arterial standards
Grahams Ferry Road/Clutter Road Intersection	Limited sight distance at the Grahams Ferry Road/Clutter Road intersection due to a combination of the nearby vertical and horizontal curvature, the grade-separated railroad crossing, and adjacent vegetation	**Coffee Creek Master Plan Safety Project:** Realign Clutter Road approximately 500 feet to the north to align opposite Elligsen Way
Boones Ferry Road North of Day Road	Horizontal curvature on Boones Ferry Road north of Day Road does not meet current standards (under Washington County jurisdiction and upcoming project will address this safety need)	**Coffee Creek Master Plan Safety Project:** Realign Boones Ferry Road
Boeckman Road Vertical Curve East of Canyon Creek Road	Non-standard vertical curve (at Boeckman Creek). Along this segment, Boeckman Road is a narrow, two-lane road without shoulders, bike lanes, or sidewalks.	**TSP Project W-4f:** Reconstruct Boeckman Road to current Minor Arterial standards
Parkway Avenue between the Xerox campus and Parkway Center Drive	Parkway Avenue is a narrow, two-lane road without shoulders, bike lanes, or sidewalks creating a gap in the pedestrian and bicycle system.	**Bike and Pedestrian Master Plan Project C40:** Widen to include a sidewalk on one side and bike lanes on both sides
Stafford Road/65th Avenue	High speeds on Stafford Road, closely spaced intersections, congestion, and substandard horizontal curvature on Stafford Road north of 65th Avenue.	No project previously identified
I-5 Boones Bridge over the Willamette River	Narrow northbound shoulder bikeway on I-5 bridge (only current biking option over river)	No project previously identified

[11] *Coffee Creek Master Plan*, Otak and DKS Associates, Adopted by City of Wilsonville on October 15, 2007.

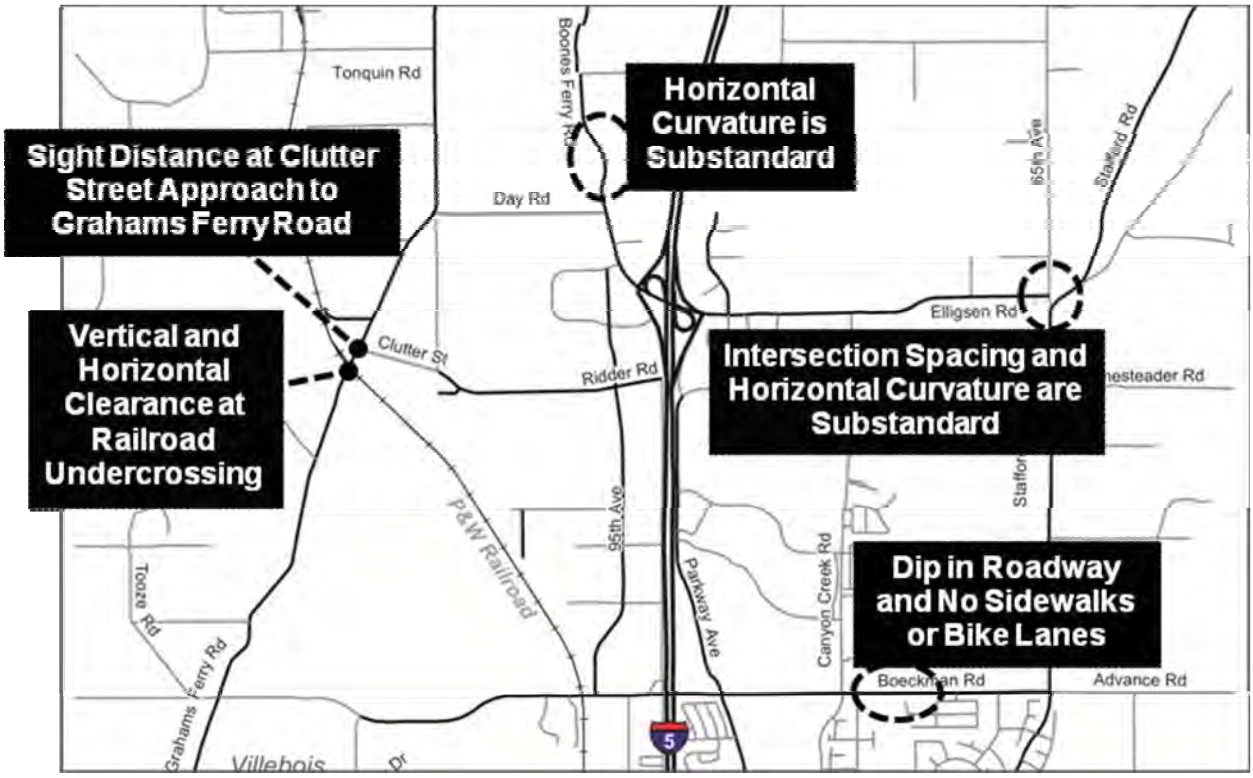


Figure 13: Safety Deficiencies

Access Management Deficiencies

Access management is the term used to describe a broad set of techniques that balance the need to provide safe, efficient, and timely travel with the ability to allow access to individual properties. On facilities such as freeways and arterials, there is generally an emphasis on facilitating the through movement of traffic, with direct property access being a secondary objective. However, for streets of lower functional classification, such as collectors and local streets, the emphasis shifts to prioritize direct property access. By limiting access to higher classification roadways, conflicts between vehicles entering and exiting driveways and vehicles on the major roadway are reduced. There is also a reduction in multi-modal conflicts, which increases safety for pedestrians and bicyclists.

The primary access management technique used by the City of Wilsonville is a case-by-case evaluation of driveways at new developments and when a site redevelops. City staff review the driveway locations to ensure that they meet intersection spacing standards, which vary depending on the roadway's functional classification. Where driveways do not meet spacing standards, City staff may require mitigation treatments, such as restricting turn movements to right-in/right-out or consolidating accesses.

Access management deficiencies for Wilsonville Road near the I-5 interchange were identified as part of the I-5/Wilsonville Road Interchange Area Management Plan (IAMP).[12] The closure of the Parkway Avenue intersection near the I-5 Northbound Ramp has already been performed as part of current interchange improvements. The IAMP also identified current driveways in the vicinity of the Town Center Loop West and Boones Ferry Road intersections that do not meet spacing standards and should be considered for elimination or consolidation with redevelopment.

Transportation System Management and Operations (TSMO)

The City of Wilsonville can improve the performance of its transportation infrastructure through the implementation of Transportation System Management and Operations (TSMO) improvements. TSMO improvements are a set of integrated transportation solutions that incorporate advanced technologies to improve traffic operations. Through a combination of transportation system management (TSM)[13] and transportation demand management (TDM)[14] systems, services, and projects, TSMO helps to achieve transportation goals such as mobility, reliability, safety, and accessibility without requiring the same degree of larger-scale, expensive infrastructure investments that would otherwise be required.

The City of Wilsonville already implements a few TDM measures. For example, it is home to multiple industrial campuses that have incentives for employers to operate with shifts that allow employees to travel to and from work outside of the peak hours. These incentives include reduced transportation system development charges (SDCs) that the employers pay at the time of development or redevelopment due to the lower trip levels that the employers generate during the p.m. peak hour. In addition, the SMART Options Program offers assistance to Wilsonville businesses to help them comply with the DEQ Employee Commute Options Rules. All businesses within the Portland-metro area with 100+ employees reporting to one work site must work to reduce trips to their work site, receive approval from DEQ for a site specific trip reduction plan and survey and monitor progress at least every two years. The SMART Options program offers free assistance with commuter surveys, trip reduction plan creation and monitoring and compliance.

The City also has two coordinated signal corridors (i.e., Wilsonville Road from Kinsman Road to Town Center Loop East and Boones Ferry Road/Elligsen Road from Day Road to Parkway Center Drive) that allow improved traffic flow. If additional traffic signals are installed on Boeckman Road near 95th Avenue and Parkway Avenue, then this corridor may also benefit from signal coordination.

Additional TSM and TDM measures have been identified for the City by Metro and Clackamas County. The Portland Regional TSMO Plan[15] identifies four functional areas of investment. For each functional area, it also identifies improvement needs for Metro Mobility Corridor #3 (Tualatin to Wilsonville). The needs that relate to the City of Wilsonville are summarized below, with additional

[12] *Interchange Area Management Plan; Interstate 5/Wilsonville Road (Exit 283)*, DKS Associates, October 2009
[13] Transportation System Management (TSM) seeks to mitigate congestion by improving the management and operations of the transportation infrastructure.
[14] Transportation Demand Management (TDM) promotes travel options and ongoing programs that result in reduced demand for drive alone trips.
[15] *Portland Regional Transportation System Management and Operations Plan: 2010 – 2020*, Metro, June 2010

details from the plan provided in the appendix and information about how the SMART Options Program addresses some of the needs:

Multimodal Traffic Management

- Arterial Corridor Management for Boones Ferry Road, Elligsen Road, 65th Avenue, Wilsonville Road, and Stafford Road to improve reliability and traveler information along the corridors. Arterial Corridor Management would include communication connection linkage with the ODOT/County Central Signal System as well as other Intelligent Transportation Systems such as Variable Message Signs, CCTV Cameras, Traveler Information and Adaptive Traffic Signal Systems.

Transportation Demand Management

- Provide individualized marketing (e.g., information about local travel options) to targeted neighborhoods in Wilsonville to encourage use of these options
    - Through the SMART Options Program, The City of Wilsonville provides individualized marketing and trip planning to employees and residents of Wilsonville. The most recent and robust individualized marketing campaign targeted all Wilsonville residents during 2011 through the "Discover Wilsonville Program". The final report for this intense effort will be available early 2012.
- Provide rideshare incentives to encourage greater participation in carpooling and vanpooling
    - The SMART Options program is an active partner with the Statewide and Metro-region Drive Less Save More and Drive Less Connect campaign to encourage rideshare and other modes of transportation other than drive alone. SMART Options Programs offer incentives for riding the bus, WES, walking, bicycling and rideshare.
- Negotiate shared parking agreements with public and private parking lots
- Support the Wilsonville SMART Options Outreach Program, which works with Wilsonville area employers and residents to promote transit and other transportation options
- Support car-sharing vehicles (e.g. Zipcar) in Wilsonville Town Center, the future Coffee Lake Creek industrial area, and Villebois
    - The SMART Options Program provides car-sharing information at outreach and information events and has had conversations with Zipcar about the future of car-sharing in Wilsonville. No particular areas of car-sharing demand have been identified, but the City should continue to monitor feedback from residents and businesses.

The Clackamas County Intelligent Transportation System (ITS) Plan[16] also identifies system improvement needs within Wilsonville. Identified projects include the following (with additional details and maps available within the ITS Plan):

- Connect the City of Wilsonville to the Regional Fiber Network via Wilsonville Road
- Connect the following roadways to Clackamas County's fiber network (Clackamas County currently maintains and operates the City of Wilsonville's traffic signals):
    - Wilsonville Road from Willamette Way East to Boeckman Road/Advance Road
    - Elligsen Road/Boones Ferry Road from Day Road to Canyon Creek Road
    - 95th Avenue from Boones Ferry Road to Boeckman Road
    - Boeckman Road from 95th Avenue to Parkway Avenue
    - Boberg Road from Boeckman Road to Barber Street
    - Barber Street from Boberg Road to Kinsman Road
    - Kinsman Road from Barber Street to Wilsonville Road
- Connect the I-5/Elligsen Road and I-5/Wilsonville Road interchanges to ODOT's fiber network
- Install CCTV cameras at the following locations and connect them to the Clackamas County Network:
    - Wilsonville Road/Boones Ferry Road intersection
    - Wilsonville Road/Rebekah Street intersection
    - I-5 Boones Bridge over the Willamette River
- Deploy adaptive signal timing and install video monitoring cameras and vehicle detection equipment (to collect traffic counts and speeds) on Wilsonville Road from Brown Road to Town Center Loop East
- Install video monitoring cameras and vehicle detection equipment (to collect traffic counts and speeds) on Elligsen Road from Day Road to Canyon Creek Road
- Install railroad crossing alert system at Portland and Western at-grade railroad crossings

Transportation Electrification and Compressed Natural Gas Vehicle Charging and Filling System

Within the City of Wilsonville and throughout the Metro area, there is an increasing need to provide infrastructure to support vehicles that use alternative fuels (i.e., electrical and compressed natural gas vehicles). These vehicles help to reduce greenhouse gas emissions and are becoming more popular and affordable. SMART already has a compressed natural gas fueling station that it uses for its bus fleet.

[16] *Clackamas County ITS Plan Update – ITS Action Plan*, DKS Associates, May 2011

The City would also benefit from a citywide electrical vehicle charging system that serves both residential and business users. There are three levels of charging metrics being used:

- Level I has an input voltage of 120 volts and a typical charging time of eight to twelve hours. It can be provided by a standard outlet.
- Level II has an input voltage of 240 volts (similar to a residential clothes dryer) and requires two to four hours for charging. Ideal locations for this level of charging include residential garages, parking lots, public garages, and transit centers.
- Level III has an input voltage of 480 volts and a typical charging time of 20 to 40 minutes. This type of charging station is ideal for rapid charging near high traffic volume locations.

The creation of an electrical charging system in Wilsonville could be pursued from a policy level as well as by installing charging and filling stations at strategic locations. Specific policy needs and charging location recommendations will be refined later in the TSP update process as part of the alternatives analysis, but preliminary options are identified in this memorandum.

Transportation Electrification Policy Implications

The City of Wilsonville can ready itself for the transition to electric transportation by including provisions in residential, commercial, and industrial building codes for supporting the required infrastructure. For example, it would be less expensive to require new buildings and parking lots to have the required electrical wiring and outlets to support future electric vehicle charging stations than it would be to retrofit older buildings and parking lots. By taking this preliminary step in preparing its infrastructure, a smoother transition could be made to alternative fuels for vehicles.

Proposed Charging and Filling System Locations

To facilitate the increased usage of electric vehicles in Wilsonville and throughout the Metro region, it would be beneficial to install Level II (240 volt) and Level III (480 volt) charging stations.

Within the City of Wilsonville, Level II charging stations already exist at City Hall (2 stations) and the Fred Meyer parking lot (2 stations). Additional locations that may be considered for Level II charging stations are the SMART Central transit center and the Town Center. SMART Central currently provides connections to TriMet's Westside Express Service (WES) commuter rail and all of the SMART bus routes. Users who commute to the transit center via electric vehicles could be accommodated by the introduction of vehicle charging stations in the park-and-ride lots. The Wilsonville Town Center is another ideal location for charging stations since it is surrounded by commercial and retail land uses.

The City of Wilsonville could also take advantage of its location at the southern tip of the Portland Metropolitan area to install a Level III (480 volt) fast charging station. The West Coast Green Highway Initiative calls for the installation of Level III DC fast charging locations along the I-5 corridor through British Columbia, Washington, Oregon, and California. This initiative is an effort between the Federal Department of Transportation (DOT) and the DOTs of the previously listed provinces and states. By providing charging stations along the interstate, users of electric vehicles

will no longer be limited to short distance and will be able to more easily travel between metropolitan areas in their electric vehicles. The City of Wilsonville may find it advantageous to pursue funds to install a Level III charging station at a convenient location near one of its two I-5 interchanges. Town Center Loop may be an ideal location due to its proximity to the I-5/Wilsonville Road interchange and nearby amenities, which can serve patrons during the 20 to 40 minutes that they are waiting for their vehicles to charge.

Appendix

2003 Wilsonville Transportation System Plan Motor Vehicle Projects

2008 Wilsonville Transit Master Plan Projects

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects

Level of Service Descriptions

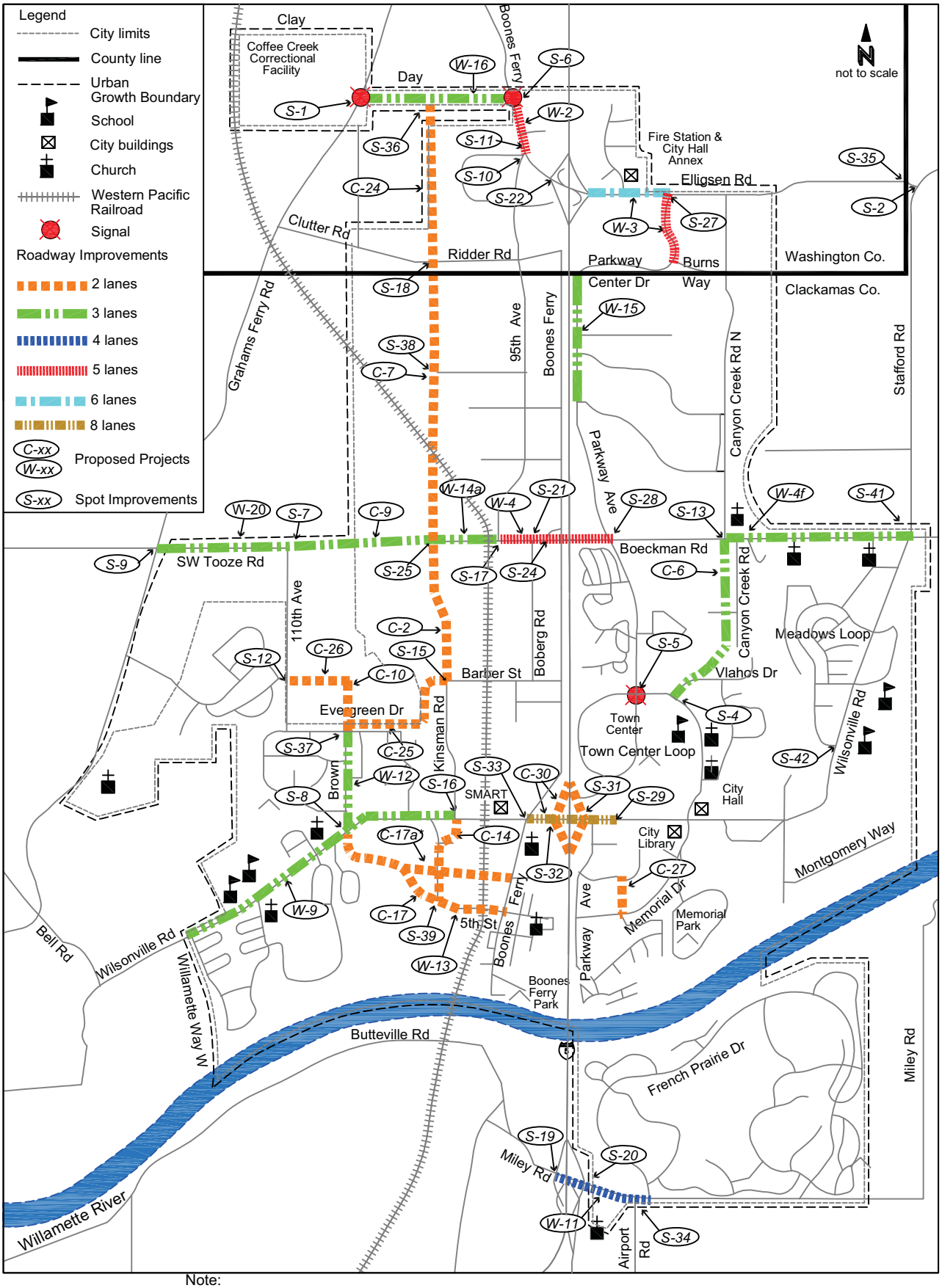
Figure A: 2035 Baseline P.M. Peak Hour Traffic Volumes

Table A: 2035 Baseline HCM Intersection Operations (with Output Reports)

Portland Regional TSMO Plan: Metro Mobility Corridor #3 (Tualatin to Wilsonville)

2035 Regional Transportation Plan (RTP) Project List: Wilsonville

2003 Wilsonville Transportation System Plan Motor Vehicle Projects

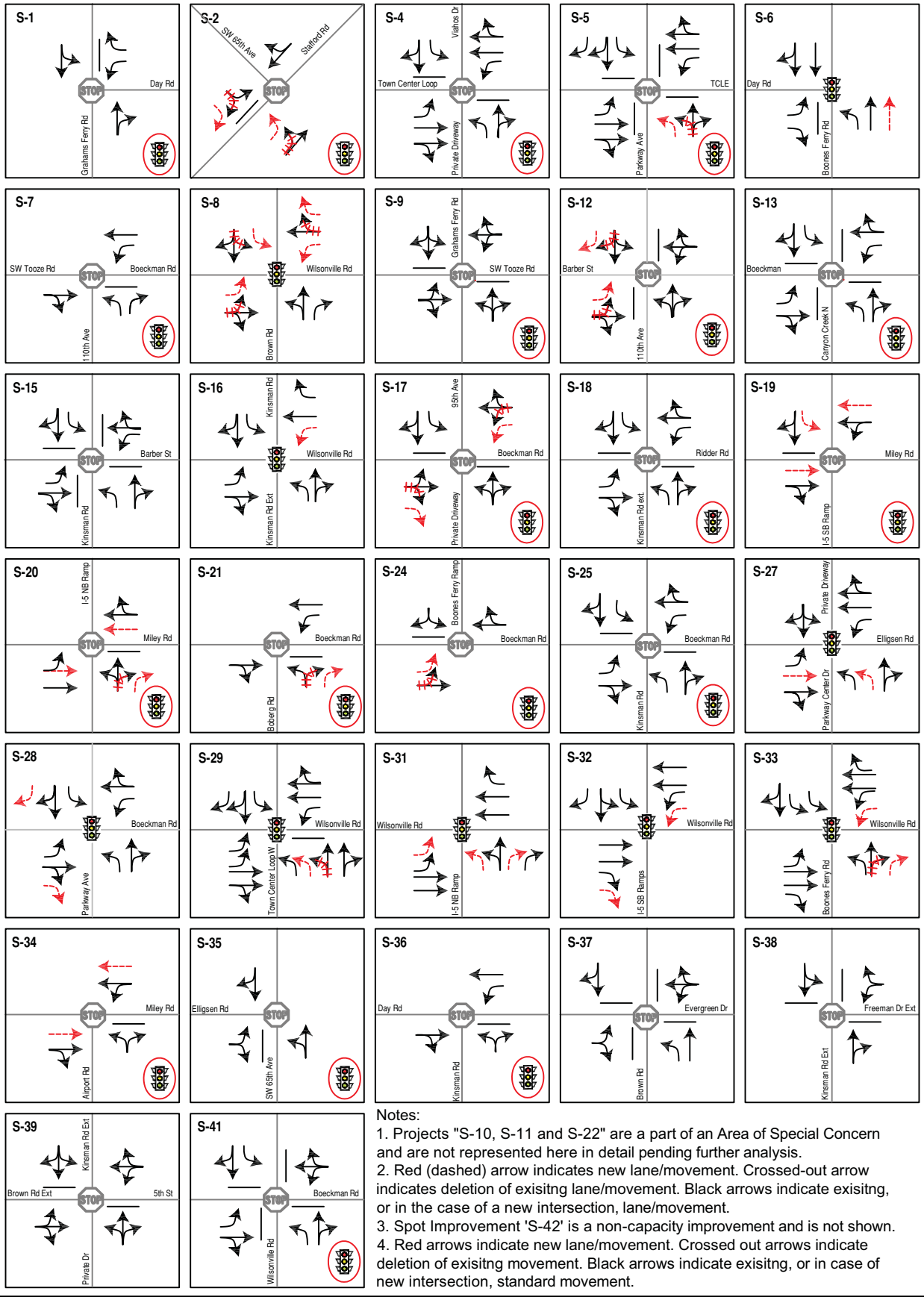


Note:
1. Spot Improvements are detailed in Figure 4.4 (continued.) All improvements are described in Table 4.b. All new 2-lane roads assumed to be 35 mph 4.d, and 4.p through 4.r.
2. C-17a* - Brown Road Extension to Bailey added as alternate route.
3. S-42 is a non-capacity spot improvement project, to be built when warranted.

City of WILSONVILLE in OREGON

Transportation *Systems Plan*

Figure 4.10
2020 Alternative 2
Recomended Roadway Network with Spot Improvements



Notes:

1. Projects "S-10, S-11 and S-22" are a part of an Area of Special Concern and are not represented here in detail pending further analysis.
2. Red (dashed) arrow indicates new lane/movement. Crossed-out arrow indicates deletion of exisitng lane/movement. Black arrows indicate exisitng, or in the case of a new intersection, lane/movement.
3. Spot Improvement 'S-42' is a non-capacity improvement and is not shown.
4. Red arrows indicate new lane/movement. Crossed out arrows indicate deletion of exisitng movement. Black arrows indicate exisitng, or in case of new intersection, standard movement.

Figure 4.10 (continued)
2020 Alternative 2
Roadway Network with Spot Improvements

2003 Wilsonville Transportation System Plan Motor Vehicle Projects (Highlighted Projects are Completed or Under Construction)

Project Number	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
C-2a	Road Extension	Kinsman Road—Phase 1 (Barber Street to Boeckman Road)	Construct two-lane extension	$ 10,365,000	Design	Being designed and awaiting funding; RTP Project 10130
C-2b	Road Extension	Kinsman Road—Phase 2 (Boeckman Road to railroad tracks)	Construct two-lane extension			May not be feasible due to railroad crossing
C-6	Road Extension	Canyon Creek Road (Boeckman Road to Vlahos Drive)	Construct extension	$ 4,500,000	Partially Completed	Northern 700-foot section has been constructed as three-lane section; two-lane section extends another 1/4 mile to the south; still needs additional 700-foot section
C-7	Road Extension	Kinsman Road (railroad tracks to Ridder Road)	Construct two-lane extension	$ 3,800,000	Partially Completed	Section south of Freeman Court has been constructed
C-9	Road Extension	Boeckman Road (future Kinsman Road extension to 110th Avenue)	Construct extension	$ 8,900,000	Completed	Constructed as three-lane extension
C-10	Road Extension	Brown Road (Evergreen Drive to Barber Street alignment)	Construct two-lane extension	$ 1,300,000	Completed	
C-14	Road Extension	Kinsman Road (Wilsonville Road to south Brown Road extension)	Construct two-lane extension	$ 3,100,000		
C-17	Road Extension	Brown Road south (Wilsonville Road to 5th Street or Bailey Street; with intersection at Kinsman Road extension)	Construct two-lane extension	$ 4,500,000		Decision still needed regarding connection to Bailey Street or 5th Street
C-24	Road Extension	Kinsman Road (Ridder Road to Day Road)	Construct two-lane extension	$ 6,000,000		Ammendments to TSP identified in Coffee Creek Master Plan (priority listed as 1-5 years); RTP Project 10853
C-25a	Road Extension	Barber Street (Montebello Drive to north Brown Road extension)	Construct two-lane extension		Completed	Includes a center landscape strip
C-25b	Road Extension	Barber Street (Kinsman Road to Montebello Drive)	Construct two-lane extension		Design	Connection is being designed and awaiting funding; RTP Project 10153
C-26	Road Extension	Barber Street (110th Avenue to future north Brown Road extension)	Construct two-lane extension	$ 1,400,000	Completed	Includes a center landscape strip
C-27	Road Extension	Rogue Lane (Memorial Drive to Holly Lane)	Construct two-lane extension	$ 700,000	Completed	
C-30	Interchange	Wilsonville Road Interchange	Enhancements (3 phases)	$ 31,300,000	Under Construction	Includes ramp improvements, Wilsonville Road widening, and intersection improvements at ramp terminals; improvements at adjacent Wilsonville Road intersections (i.e., Boones Ferry Road and Parkway Avenue) were also recently completed; RTP Projects 10152, 10154, and 10155
W-2	Road Widening	Boones Ferry Road (95th Avenue to Day Road)	Widen to five lanes	Completed	Completed	
W-3a	Road Widening	Elligsen Road (Parkway Avenue to Parkway Center Drive)	Widen to six lanes		Completed	
W-3b	Road Widening	Parkway Center Drive (Elligsen Road to Burns Way)	Widen to five lanes		Completed	Southern 400-foot section (between Argyle Square access and Burns Way) only widened to four lanes
W-4	Road Widening	Boeckman Road (Parkway Avenue to 95th Avenue)	Widen to five lanes (includes bridge rebuild)	$ 13,600,000	Partially Completed	Section between 95th Avenue and Boberg has already been widened; RTP Project 10132

2003 Wilsonville Transportation System Plan Motor Vehicle Projects (Highlighted Projects are Completed or Under Construction)

Project Number	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
W-4f	Road Widening	Boeckman Road (Canyon Creek Road to Wilsonville Road)	Widen; RTP indicates that widening would be to 3 lanes with bike lanes, sidewalks, and connections to regional trail system; also, remove culvert and install bridge	$ 5,800,000	Partially Completed	1,000-foot segment in middle (adjacent to Arbor Crossing subdivision) has been widened to three lanes; this leaves 1/2-mile segment that still needs to be widened, including section with significant elevation drop at the creek; RTP Project 10156
W-9	Road Widening	Wilsonville Road (Railroad tracks to West City Limits)	Widen to three lanes	$ 5,400,000	Completed	
W-11	Road Widening	Miley Road (I-5 SB Ramps to French Prairie Drive W)	Widen to four lanes	$ 2,200,000		
W-12	Road Widening	Brown Road (Wilsonville Road to Evergreen Drive)	Widen to three lanes	$ 1,700,000		
W-13	Road Widening	5th Street (Brown Road extension to Nutting Road)	Widen (includes at-grade railroad crossing with upgrade)	$ 1,700,000		Only needed if Brown Road extension connects to 5th Street
W-14a	Road Extension	Boeckman Road (95th Avenue to future Kinsman Road extension)	Construct three-lane extension	$ 4,300,000	Completed	
W-15	Road Widening	Parkway Avenue (InFocus improvements to Parkway Center Drive)	Widen to three lanes	$ 3,500,000		
W-16	Road Widening	Day Road (Grahams Ferry Road to Boones Ferry Road)	Widen to three lanes	Completed	Completed	
W-20	Road Widening	Tooze Road (110th to Grahams Ferry Road)	Widen	$ 3,800,000	Partially Completed	A three-lane, realigned section was constructed to connect Tooze Road to the new Boeckman Road extension; however, the western 1/4-mile section has not been constructed; RTP Project 10131
S-1	Signalization	Grahams Ferry Road/Day Road intersection	Install signal	W-16	Completed	In addition, there is a new west leg as well as NB and SB left-turn lanes on Day Road
S-2	Signalization	SW 65th Avenue/Stafford Road intersection	Install signal and add NB left-turn lane on Stafford Road and EB right-turn lane on 65th Avenue	$ 400,000	Partially Completed	The NB left-turn lane on Stafford Road has been constructed; also see RTP Project 10134
S-4	Signalization	Town Center Loop E/Vlahos Drive intersection	Install signal	C-6		
S-5	Signalization	Parkway Avenue/Town Center Loop intersection	Install signal and add NB left-turn lane	$ 300,000	Completed	
S-6	Signalization	Boones Ferry Road/Day Road intersection	Install signal and add NB through lane	W-16	Completed	In addition, there is a new east leg as well as a SB left-turn
S-7	Signalization	Boeckman Road-SW Tooze Road/110th Avenue intersection	Install signal and add EB and NB right-turn lanes	C-9	Completed	A traffic signal is no longer needed because a single-lane roundabout was installed 600 feet to the east (will be the new access to the Villebois Master Plan area)
S-8	Turn Lanes	Wilsonville Road/Brown Road intersection	Add EB, WB, and SB left-turn lanes; Add WB right-turn lane	W-9	Completed	SB right-turn lane added instead of left-turn lane
S-9	Signalization	Grahams Ferry Road/Tooze Road intersection	Install signal	W-20		Need to reconsider; left-turn lanes on all approaches identified in Villebois study
S-10	Special Concern	Elligsen Road/I-5 SB Ramp intersection	Part of Area of Special Concern (ASC); not identified pending further analysis	TBD	Design	Additional auxiliary lane added on SB I-5; special concern to be addressed by improvements under design on Boones Ferry Road at 95th Avenue

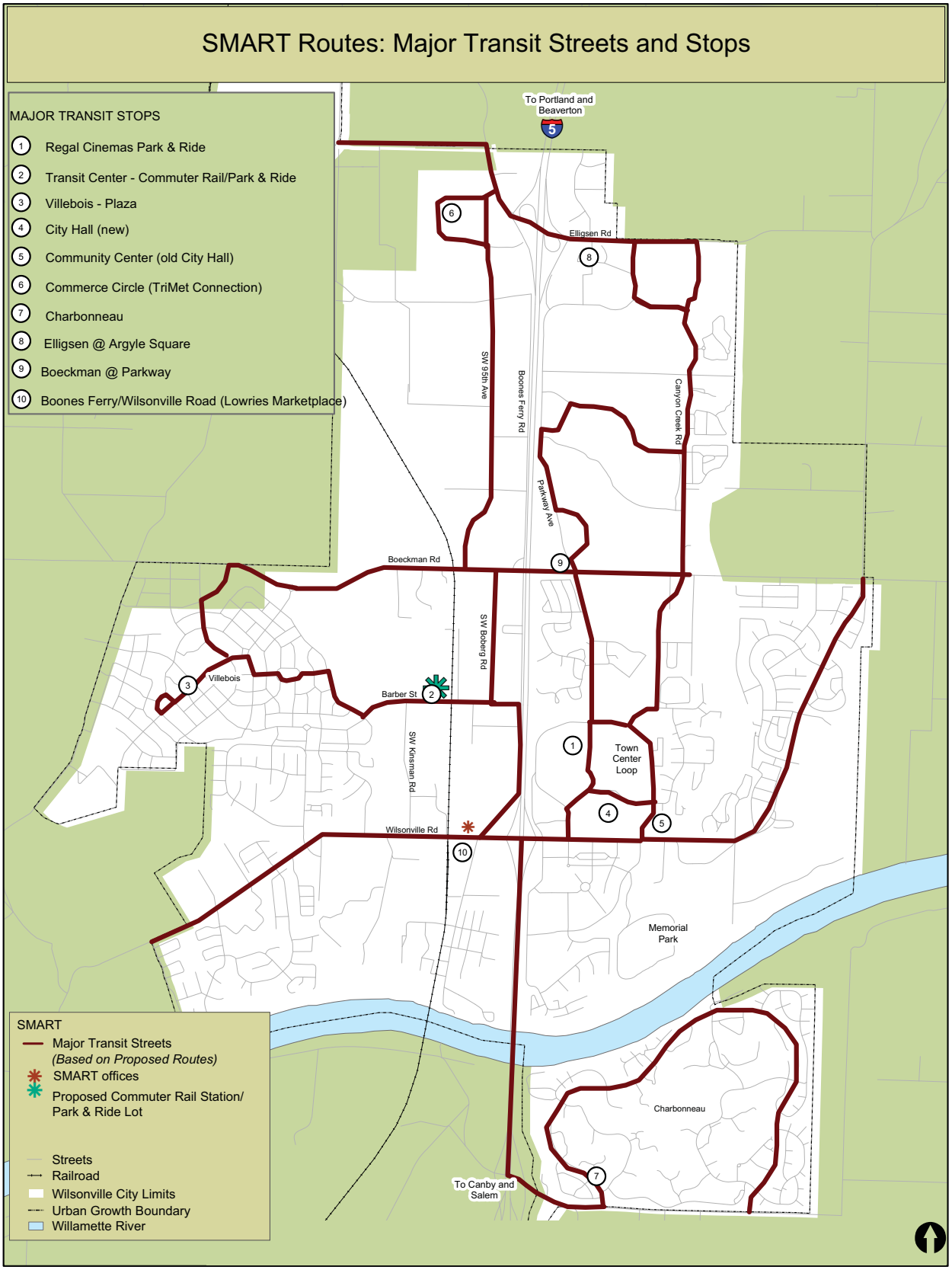
2003 Wilsonville Transportation System Plan Motor Vehicle Projects (Highlighted Projects are Completed or Under Construction)

Project Number	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
S-11	Intersection	Boones Ferry Road-Elligsen Road/95th Avenue intersection	Part of Area of Special Concern (ASC); pending further analysis; identified as additional NB right-turn lane (dual rights), EB through pocket, and SB left-turn lane; improve signal phasing	$ 2,500,000	Out to Bid	Final design plans have been prepared by Mackay Sposito; project is going out to bid; RTP Project 10852
S-12	Signalization	110th Avenue/Barber Street Extension intersection	Install signal; add EB left-turn lane; add SB right-turn lane (make a free right with channelized median)	C-26	Completed	A single-lane roundabout was installed instead
S-13	Signalization	Boeckman Road/Canyon Creek Road N intersection	Install signal	C-6		
S-15	Turn Lanes	Kinsman Road Extension/Barber Street intersection	Add NB left-turn lane	C-2	Completed	A traffic signal was also installed and includes left-turn lanes on all approaches
S-16	Turn Lanes	Wilsonville Road/Kinsman Road intersection	Add WB left-turn lane	C-14	Completed	WB left-turn currently blocked off (no south leg to turn to)
S-17	Signalization	Boeckman Road/95th Avenue intersection	Install signal (some discrepancies in TSP)	W-14a	Completed	Intersection has left-turn lane on all approaches and WB right-turn lane (slightly different than shown in TSP)
S-18	Signalization	Kinsman Road Extension/Ridder Road intersection	Install signal at new intersection	C-24		
S-19	Signalization	Miley Road/I-5 SB Ramps intersection	Install signal; add SB left-turn lane; add EB through lane and convert WB left-turn to a left-through (with roadway widening)	W-11		
S-20	Signalization	Miley Road/I-5 NB Ramps intersection	Install signal; add NB right-turn lane; add WB through lane and convert EB left-turn to a left-through (with roadway widening)	W-11		
S-21	Signalization	Boeckman Road/Boberg Avenue intersection	Install signal; add NB right-turn lane	W-4		Intersection improvement ideas (including two-way stop control) considered as part of the Barber-Kinsman Extension study
S-22	Special Concern	95th Avenue/Commerce Circle North intersection	Part of Area of Special Concern (ASC); not identified pending further analysis		Design	Final design plans have been prepared by Mackay Sposito; project is going out to bid
S-24	Signalization	Boeckman Road/Boones Ferry Ramp intersection	Install signal; add EB right-turn lane	W-4		
S-25	Signalization	Kinsman Road Extension/Boeckman Road intersection	Install signal	C-9		Curb cuts installed, but not traffic signal; currently has ped crossing signal; intersection being considered for a roundabout (see DKS study for Kinsman Road extension)
S-27	Turn Lanes	Elligsen Road/Parkway Center Drive intersection	Add NB left-turn lane and EB through lane (some discrepancies in TSP regarding EB right-turn or through lane); improve signal timing	W-3	Completed	EB geometry includes a right-turn lane and a through-right lane
S-28	Turn Lanes	Parkway Avenue/Boeckman Road intersection	Add EB and SB right-turn lanes and change EB and SB through-right lanes to through lanes only; improve signal phasing	W-14		Additional WB approach lane may be needed (analysis performed in conjunction with Brenchley TIS suggests this needed addition)
S-29	Turn Lanes	Wilsonville Road/Town Center Loop West intersection	Change NB left-through to left only; improve signal phasing	$ 800,000		Identified additional improvements (dual SB rights in addition to other TSP improvements) as part of the IAMP and WIP analysis
S-31	Turn Lanes	Wilsonville Road/I-5 NB Ramps intersection	Add NB right-turn and left-turn lanes and WB through lane	C-30	Under Construction	Add NB left- and right-turn lanes (dual rights), EB left-turn lane (dual lefts), and WB through lane

2003 Wilsonville Transportation System Plan Motor Vehicle Projects (Highlighted Projects are Completed or Under Construction)

Project Number	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
S-32	Turn Lanes	Wilsonville Road/I-5 SB Ramps intersection	Add EB right-turn, WB left-turn, and EB through lanes	C-30	Under Construction	Add SB right-turn lane (dual rights), WB left-turn, and EB through lane
S-33	Turn Lanes	Wilsonville Road/Boones Ferry Road intersection	Add WB left-turn lane to create dual lefts with extra receiving lane on SB leg; add EB through lane or NB right-turn lane (some discrepancies in TSP); improve signal phasing	C-30	Completed	Added NB right-turn lane as well as additional EB through lane (but there is no exclusive EB right-turn lane)
S-34	Signalization	Airport Road/Miley Road intersection	Install signal; additional EB and WB through lanes (with roadway widening)	W-11		
S-35	Signalization	SW 65th Avenue/Elligsen Road intersection	Install signal	$ 300,000		Improvements at this intersection and at 65th Ave/Stafford Road should be considered jointly due to the close spacing; also see RTP Project 10134
S-36	Signalization	Kinsman Road Extension/Day Rd intersection	Install signal at new intersection	C-24		
S-37	Turn Lanes	Brown Road/Evergreen Drive intersection	Add SB left-turn lane	C-10	Completed	Roundabout installed at Brown Road/Barber Street intersection instead
S-38	Intersection	Kinsman Road Extension/Freeman Drive Extension intersection	Construct intersection as part of roadway extensions	Completed	Completed	An 850-foot section of Kinsman Road (primarily south of the intersection towards the RR tracks) was also constructed
S-39	Intersection	Brown Road Extension/Kinsman Road Extension intersection	Construct intersection as part of roadway extensions	C-17		
S-41	Signalization	Boeckman Road/Wilsonville Road intersection	Install signal	W-4f		Advance Rd School Study (DKS, April 2010) also identifies left-turn lanes on all approaches
S-42	Signalization	Wilsonville Road/Meadow Loop intersection	Install signal when warranted (non-capacity improvement at High School)	TBD	Completed	

2008 Wilsonville Transit Master Plan Projects



Map 2. Major Transit Streets and Stops Based on Proposed Routes

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
	Transit Service	Administration (Agency Coordination)	Commuter Rail Operations: Wilsonville will need to begin contributing a portion of WES commuter rail operating cost to TriMet	$ 300,000		Yearly contributions started in 2009 with completion of WES	Contribution may increase starting in 2014; Important negotiations; not automatic increase but potential increase linked to formula; see contract
	Transit Service	City-wide	Ten-Minute Plan: SMART will move to a "pulse" system design, where SMART buses will meet the commuter trains and deliver passengers within 10 minutes of arrival			Completed	
	Transit Service	Route 2X (Service to downtown Portland)	Extend SMART route currently serving TriMet's Barbur Transit Center to downtown Portland to allow people traveling to and from Wilsonville to make direct connections to MAX, Portland Streetcar, and a large number of TriMet bus lines. Fares would be charged for this service; also increase frequency and add express runs	$ 405,000	2012		When funding is available $$; project also included in RTP (11107) with cost of $1,152,000 for ten years
	Transit Service	(service to Villebois)	Provide new shuttle service linking Villebois with commuter rail, Town Center, Murase/Memorial Park, and Memorial Drive; begin service based on demand	$ 365,000	2011		Limited Service implemented in 2009; (four round trips per day during peak hours); RTP Project 11108 specifies new service to West Wilsonville
	Transit Service	(service to Villebois)	Add Saturday service for Villebois shuttle	$ 33,000	2013		RTP Project 11108 specifies new service to West Wilsonville
	Transit Service	(service to Coffee Creek)	Extend route to Coffee Creek Correctional Facility		2008	$$; Service Boundary Issue	Correctional Facility is currently in TriMet's district; annex into City/MART district and direct payroll tax to SMART; RTP Project 11108 specifies new service to West Wilsonville
	Transit Service	(service to Coffee Creek)	Extend route to Coffee Creek Master Plan area; begin service when triggered by new development		2013	$$; Service Boundary Issue	Need to ensure new development becomes part of City/SMART service area and tax revenue is directed to SMART not TriMet; RTP Project 11108 specifies new service to West Wilsonville
	Transit Service	(service to Frog Pond)	Extend route to Frog Pond Master Plan area; begin service when triggered by new development		2017		When funding is available $$
	Transit Service	(service to Charbonneau)	Extend route to make loop around Charbonneau		2010	$$	When funding is available $$
	Transit Service	(service to Canyon Creek)	Provide new route linking Canyon Creek with commuter rail and major employers on eastside of Wilsonville	$ 130,000	2009 or 2011	Completed	
	Transit Service	(service to Villebois)	Extend route to link Villebois with commuter rail, major employers on the eastside of Wilsonville, and Canyon Creek; begin service when development is more complete	$ 207,000	2013 or 2017		There is a demand for this
	Transit Service	(service to Frog Pond)	Extend route to Frog Pond Master Plan area; begin service when triggered by new development		2017	$$	When funding is available $$
	Transit Service	Route 1X (service to Salem)	Adjust SMART route times to meet the train and provide one additional round trip to Salem in the morning and one additional round trip in the evening	$ 70,000	2009	Completed	Completed
	Transit Service	Route 1X (service to Woodburn)	Add stop at Woodburn Park & Ride once it is completed by ODOT		2011	Woodburn Transit Center and Interchange Improvements under construction	Important discussion necessary; adds 10-15 minutes addl time to run which will impact 1X service and current customers; not ideal for SMART; prefer bus stop at off ramp; design similar to Canadian model

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

Updated Feb. 2012

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
	Transit Service	Other nearby communities	Potentially add service to Sherwood, Newberg, and/or other communities if/when need arises and availability of routes		2022		Currently good candidates for vanpools; there is a demand between Sherwood and Wilsonville and a bus system there that is growing; may be potential to link systems; invite Yamhill county system to link to SMART Central@Wilsonville Station; RTP Project 11327 for commuter service to Tualatin and Sherwood ($600,000); RTP Project 11328 for new service to Clackamas Town Center ($3,000,000).
	Transit Facility	Commuter Rail Station	Construct commuter rail station			Completed	Completed
	Transit Facility	Transit Center	Construct SMART transit center adjacent to WES commuter rail station			Completed	Completed
	Transit Facility	Fleet Maintenance Facility and Administrative Offices	Develop comprehensive facilities master plan and construct new facility on Boberg Road adjacent to TriMet's rail maintenance facility	$ 4,000,000		In progress	To be Completed by December 2012; RTP Projects 11111 (Administrative) for $4,000,000 and 11112 (Fleet Services) for $8,000,000
	Transit Service	Buses	Upgrade SMART's bus fleet by replacing older buses; Establish Fleet Replacement Plan			In progress	Anticipate completion of Fleet Replacement Plan by March 2012; fleet replacements are ongoing (need to work with region and at the federal level to ensure SMART receives bus replacement funds from Federal Grants); RTP Project 11109, with cost of $14,000,000 (2008 to 2035)
1.1	Transit Publicity	Bus Stops	Provide signage indicating which routes serve the stop and at what times. Provide route maps at major transit stops		2006/07, ongoing	Completed 2009	Completed; all new bus stop signs, route maps at shelters; January 2009; ongoing updates are required
1.2	Transit Publicity	Administration (Public Outreach)	Create a new bus schedule that can be easily read and understood by passengers of all ages, including a map with points of reference, such as parks, schools, community buildings, Park & Ride lots, and transfer points		2007	Completed 2009	Always room for improvement; but redesign resulted in significant improvements
1.3	Transit Publicity	Administration (Public Outreach)	Send out press releases to publicize schedule changes. Recipients of the press releases could include The Wilsonville Spokesman, the Boones Ferry Messenger, the Wilsonville Chamber of Commerce, Wilsonville TV, schools and employment sites, and various community newsletters. SMART should also provide schedule racks to civic buildings, large businesses, and the Wilsonville Chamber of Commerce and ensure that they are regularly stocked.		ongoing	Ongoing	Ongoing
1.4	Transit Publicity	Administration (Public Outreach)	Publicize services such as Travel Training and SMART Options by creating and distributing brochures and other information.		2006	Ongoing	Ongoing
1.5	Transit Publicity	Administration (Public Outreach)	Provide local publicity for national and regional events such as Bike to Work Month, Walk to School Week, Walk to Lunch, and other commuter challenge events.		ongoing	Ongoing	Ongoing

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
1.6	Transit Publicity	Administration (Public Outreach)	Create one or more transit information kiosks in Wilsonville at locations such as the commuter rail station, the Wilsonville Library, City Hall or the Chamber of Commerce.		2008	Completed	Completed Kiosk at SMART Central@Wilsonville Station; Information is also at City Hall, SMART offices, Chamber of Commerce, Library
1.7	Transit Publicity	Administration (Public Outreach)	Participate in community events to increase general public knowledge of SMART services, connections with other transit systems, and options for carpooling, vanpooling bicycling, and walking.		ongoing	ongoing	ongoing
1.8	Transit Publicity	Administration (Public Outreach)	Update the SMART website to include interactive maps and additional transportation program resources for Wilsonville employers.		2007	Completed	Always room for improvements and updates
1.9	Transit Publicity	Administration (Agency Coordination)	Request neighboring transit systems and ODOT Public Transit Division to include information about SMART on their websites and on their schedules.		ongoing	In progress	Much of this is done but coordination is an ongoing effort
1.10	Transit Publicity	Administration (Public Outreach)	Contact the publishers of mapping resources such as the Thomas Guide, AAA, Mapquest, Google, and the phone book to provide them with locations for the commuter rail station, transit centers, and park & ride lots, and ensure that these locations are shown on maps and websites.		2007, ongoing	Completed 2010	Completed 2010 SMART system is part of Google and Transit Trip Plannig is possible via Google Maps.
1.11	Transit Publicity	Administration (Public Outreach)	Develop and distribute targeted marketing materials to employment sites, schools, new commercial and residential developments, and other groups. These materials should provide an overview of SMART services including: (1) Route schedules, (2) Other transportation options, such as bicycling, carpooling, vanpooling, and telework, (3) Information on SMART's Walk SMART program, and (4) Information of specific interest to the targeted group, whether it be seniors, children, or commuters. Materials for employment sites should include information on telework, flex time, staggered work hours, and parking management programs. Information for new residents and employees should include an invitation to a free trolley tour of Wilsonville.		ongoing	Completed and Ongoing	Completed Discover Wilsonville 2011, Walk SMART and Bike SMART and Options programs complete these objectives every year
1.12	Transit Publicity	Administration (Public Outreach)	Offer specialized travel training for seniors, students, and other interested groups.		ongoing	Ongoing	work with RideConnection's Regional Travel Training Program
1.13	Transit Publicity	Administration (Funding)	Actively pursue funding for a Travel Smart project through Metro's Regional Travel Options funding process or other sources.		2008	Completed	Completed 2011
2.1	Transit Quality	Administration (Agency Coordination)	Coordinate SMART bus route schedules as closely as possible with TriMet, Cherriots, and CAT to ensure that connections are convenient and wait times are minimized.		ongoing	Completed	Completed but ongoing updates
2.2	Transit Quality	Administration (Agency Coordination)	Coordinate with ODOT, Metro, Tri-Met, and the counties of Washington and Clackamas on the development of Park & Ride areas and transfer stations at freeway interchanges and the planned commuter rail station in Wilsonville to ensure that service is coordinated and allows for intermodal connectivity.		ongoing	Accomplished and ongoing	accomplished and ongoing
2.3	Transit Quality	Administration (Public Outreach)	Strive to maintain a record of 85% on-time service on all routes.		ongoing	Accomplished and ongoing	Accomplished and ongoing

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
2.4	Transit Quality	Administration (Public Outreach)	Maintain 100% satisfaction of Dial-A-Ride requests from elderly and disabled passengers.		ongoing	Accomplished and ongoing	Accomplished and ongoing
2.5	Transit Quality	Administration (Public Outreach)	Maintain a record of customer service calls, letters, and e-mail along with resolution or action taken.		2006, ongoing	Accomplished and ongoing	accomplished and ongoing
2.6	Transit Quality	Administration (Public Outreach)	Conduct passenger surveys in English and Spanish on an annual or more frequent basis to assess customer satisfaction, unmet needs, and provision of equitable service.		(no date identified)	Accomplished and ongoing	accomplished and ongoing; conducting ridership surveys as part of NTD reporting but still need to conduct customer satisfaction and unmet needs surveys
2.7	Transit Quality	City-wide	Expand SMART's existing Emergency Ride Home Program to cover commuters who participate in worksite programs as a means to encourage transit, carpooling, vanpooling, bicycling and walking.		2007		Item for discussion
2.8	Transit Quality	Administration (Training)	Provide regular training for bus drivers in customer service, emergency preparedness, cultural sensitivity, and Spanish language.		ongoing	Accomplished and ongoing	Accomplished and ongoing
2.9	Transit Quality	Buses	Increase the number of security cameras to include cameras in the back of buses where feasible.		2007	Completed	Added eight security cameras at transit center in clock tower and also added camera's to all new buses and updated older buses
2.10	Transit Quality	Buses	Inspect and repair all buses on a set maintenance schedule to ensure that there are no breakdowns during service hours. Ensure that buses are kept clean during service and that they are thoroughly cleaned at the end of each day.		ongoing	Accomplished and ongoing	Accomplished and ongoing
2.11	Transit Quality	Bus Stops, Administration (Planning)	Continue to research and implement new technologies which provide improvements in customer service and are cost effective. Examples include real-time customer information displays, automated stop announcements, regional multi-jurisdictional transit scheduling, dispatch, and other technologies.		ongoing	Not completed	Important focus for future; seek funding opportunities and when funding is available implement
2.12	Transit Quality	Administration (Planning)	Research the feasibility and cost-effectiveness of adding passenger amenities, designed to attract new passengers who currently drive.		ongoing		
3.1	Transit Access	Bus Stops	Install bus shelters based on the identified priority list. Update future priority lists on an annual basis.		2006, ongoing		See separate table of priority bus stop shelters
3.2	Transit Access	Bus Stops	Purchase and install seats that attach to the bus pole at all Wilsonville bus stops where the following criteria are met: (1) There is currently no shelter at the bus stop, (2) No bus shelter is anticipated to be built at the location within the next year, (3) No other seating is located adjacent to the bus stop, and (4) Installation of the bus pole seat would not present a safety hazard.		2007, ongoing	Bus stop seats; not completed	$$
3.3	Transit Access	Administration (City Code)	Require each traffic study to include the effects on transit services, circulation, and access for pedestrians and bicyclists on major transit streets.		ongoing	Not completed	Important
3.4	Transit Access	Administration (City Code)	Amend the City's Comprehensive Plan and the Planning and Land Development Code as appropriate, to include Transit Facilities Design Standards.		2006, ongoing	Not completed	Important

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
3.5	Transit Access	Administration (City Code)	Continue to require new developments on major transit streets to be designed to support transit use through site planning and pedestrian accessibility. Amend the City's Development Code to include provisions that new developments on major transit streets are designed so that the location of the building frontage and entrance is within 20 feet of the transit stop or transit street. A direct pedestrian connection is provided between transit stops and building entrances.		ongoing	Not completed	Important
3.6	Transit Access	Bus Stops	Require new developments generating an average of 49 or more peak trips to provide an approved bus shelter with concrete boarding pad, bus stop sign and pole, bench, lighting, information display unit, garbage receptacle and bicycle rack. New developments generating more than 199 peak-hour trips shall also provide a bus pullout and additional bus shelters, if SMART determines it is necessary. New developments generating more than 500 peak-hour trips shall also provide on-site circulation to accommodate transit service, including appropriate street design, building orientation, and turning radii.		ongoing	Not completed	Re-visit standards to ensure they are accurate; SMART does not need a bus pull out; need to ensure City allows SMART to stop on Street when picking up passengers; Better not to have pull-outs in many cases; Need to link requirements to funding source; SDC, Utility fee, or some funding source to pay for capital upgrades down the road; may need to create transit zones so when development takes place funding is set aside for necessary improvements
3.7	Transit Access	Administration (City Code)	Amend the City's Development Code to require large developments and high employment and/or traffic generators (i.e., those with at least 50 on-site employees) to submit Transportation Demand Management programs to the City indicating how they will reduce transportation impacts, the activities they intend to undertake and how they will implement these activities. All such proposals shall be subject to review by the City Engineer, Planning Director, and SMART. The City will monitor and enforce, if necessary, to ensure plans meet modal targets and are implemented.		ongoing	Discussion Item	TDM plans are a good idea but need to have a staff to monitor the plans; if that isn't available; need to discuss other options
3.8	Transit Access	Bus Stops	Improve pedestrian and bicycle connectivity to transit routes to the maximum extent possible, by constructing bicycle lanes, and bicycle parking and storage, sidewalks, crosswalks and other provisions for safe pedestrian crossings such as curb ramps, bulbouts, medians or pedestrian refuges, flashers or signals, and traffic-calming measures.		ongoing	Accomplished and ongoing	New bike lockers and Bike Racks at Transit Center, good sidewalk network, safety islands as part of Wilsonville Rd improvements; always room for improvement; many of the roads that are wide need traffic calming measures
3.9	Transit Access	Buses	Purchase bicycle racks which accommodate three bicycles for all new bus purchases and all replacement racks. Trade out new racks with old ones when necessary to ensure that buses with highest demand have the new racks. Investigate the availability of vertical racks to be installed inside the buses.		2006, ongoing	Accomplished and ongoing	Recently purchased 20+ bike racks for buses; they don't accommodate 3 bikes but SMART was able to purchase at a good price
3.10	Transit Access	Administration (Employers)	Encourage employers to improve on-site provisions for bicyclists such as weather-protected parking facilities, showers, and lockers at point of destination.		ongoing	Accomplished and ongoing	Accomplished and ongoing

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
3.11	Transit Access	Transit Center, Bus Stops	Make accommodations for bicyclists and pedestrians at park-and-ride lots and transportation transfer locations, including bicycle lockers or racks, sidewalks, pedestrian refuges, and marked crossings as appropriate.		ongoing	Completed and ongoing	Installed 40 bike lockers at SMART Central@Wisonville Station; added bike racks at transit center; Bike/Ped Improvements are being installed on Wilsonville Road as part of Wilsonville Road improvements
3.12	Transit Access	Transit Center	Develop a loaner bicycle program. Bicycles would be purchased by SMART and stored in lockers at the Commuter Rail station/ transit center. Program participants could then ride the bicycles from the transit center to their destination and return them to the lockers for their return trips.		2008	Not completed	City of Portland conducting a large 4 million pilot project; determine if feasible after they implement
3.13	Transit Facility	Transit Center	Construct a park-and-ride lot at the commuter rail station. Work with regional, state and private entities to develop funding packages.		2008	Completed	Completed 2009
3.14	Transit Access	Administration (Planning)	Reassess the need for an additional park & ride lot after the commuter rail lot is operational. At that time options can be evaluated based on number of spaces needed.		2009 on	Not Completed	Assess in 2015? RTP Project 11110 identifies a 250 space expansion (for $4,500,000)
3.15	Transit Access	City-wide	Assure that all new transit facilities meet ADA requirements.		ongoing	Completed	Accomplished and ongoing
3.16	Transit Access	Buses	Purchase low-floor buses whenever feasible, to facilitate easy boarding for seniors and people with disabilities.		ongoing		Important; Portland Regional Standard; City/SMART hasn't committed to this 100%; needs commitment
3.17	Transit Access	Administration (Agency Coordination)	Coordinate with TriMet and other providers to streamline the process for Dial-a-Ride trips between districts, so that reservations for one trip can be made with a single phone call.		ongoing	Accomplished and ongoing	SMART provides out of town DAR to address this issue; coordination didn't work well; needs ongoing negotiations
3.18	Transit Access	Administration (Public Outreach)	Continue to coordinate with the Wilsonville Community Center to provide senior luncheon, shopping and activity trips to provide seniors with mobility, and an opportunity to run errands and socialize. Work with the Community Center to expand service to accommodate evening classes.		ongoing	Accomplished and ongoing	Ongoing process; changes as community changes
3.19	Transit Access	Administration (Planning)	Evaluate the SMART system's accessibility for seniors and people with disabilities. The evaluation should be performed in consultation with a group, such as Elders in Action, which represents seniors and people with disabilities. This process would provide SMART with a list of obstacles or deficiencies that need to be addressed.		2007	Accomplished and ongoing	Accomplished and ongoing
3.20	Transit Access	Administration (Public Outreach)	Provide Spanish translations for information on Dial-a-Ride and services for seniors and people with disabilities on schedules and on the website.		2006, ongoing	Accomplished and ongoing	Accomplished and ongoing
3.21	Transit Access	Administration (Training)	Offer Spanish-language training to bus drivers and SMART office staff.		ongoing	Not completed	not completed
4.1	Transit Expansion	Administration (Planning)	Plan for facilities and services to meet anticipated demands in new growth areas such as Villebois and the industrial lands near the Coffee Creek and Frog Pond areas.		ongoing	$$	$$ Ensure there is a mechanism for funding transit enhancments when new development occurs

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

Updated Feb. 2012

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
4.2	Transit Expansion	Administration (Planning)	Develop and maintain a SMART capital improvement plan that identifies needs, costs, and funding sources. Equipment and facilities should meet the requirements of the Americans with Disabilities Act.		ongoing	Accomplished and ongoing	Once SMART Operations Center is complete the major transit capital projects wil be complete and annual updates will be for areas of new development
4.3	Transit Expansion	Administration (Agency Coordination)	Coordinate with TriMet to draft and sign an intergovernmental agreement facilitating the transfer of any lands annexed by Wilsonville from TriMet's service district into the SMART service area.		2006	relates to items above (Coffee Creek, etc.)	
4.4	Transit Expansion	City-wide	Strive to provide service within ¼ mile of all existing and new development, to ensure that residents and employees can walk to bus stops.		ongoing	Complete	Completed
4.5	Transit Expansion	Administration (Public Outreach)	Conduct follow-up surveys of residents and employees to provide updated information on the travel needs and preferences of riders and non-riders, with a special emphasis on seniors, youth, low-income, minorities, and people with disabilities.		(no date identified)	Accomplished and ongoing	Accomplished and ongoing
4.6	Transit Expansion	City-wide	Expand or extend service based on needs of new development, transit-dependent populations, increasing ridership counts, origin-destination studies, or survey results from current and/or potential passengers indicating travel preferences.		ongoing	ongoing	ongoing
4.7	Transit Expansion	City-wide, Administration (Planning)	Charge fares for any intercity service. Evaluate fare levels on an annual basis with the objective of maximized revenue and minimized loss of ridership.		2006, ongoing	completed	Implemented 2008
4.8	Transit Expansion	Administration (Planning)	Evaluate routes on an annual basis based on criteria such as ridership levels, overall cost, passenger boardings, and costs per passenger mile. Targeted marketing campaigns should be conducted for routes with performance levels below the norm. Service alterations should be considered for routes which continue to perform below the norm.		ongoing	Accomplished and ongoing	Accomplished and ongoing; Need more targeted marketing campaigns
4.9	Transit Expansion	City-wide	Continue to provide demand-response service within the City of Wilsonville to help meet the demands of the transit-dependent population, with priority given to people with disabilities.		(no date identified)	Completed	Completed
4.10	Transit Expansion	Administration (Planning)	Support new regional studies for commuter rail all-day service, and for an extension from Wilsonville to Salem using existing railroad tracks. Support this passenger rail service with SMART bus service.		ongoing	Accomplished and ongoing	Accomplished and ongoing
4.11	Transit Expansion	Administration (Employers)	Work with employers to assess the viability of vanpools from various locations, based on employee zip code data and shift times. Assist in setting up vanpools where sufficient interest exists.		2006, ongoing	Accomplished and ongoing	working with state and their new rideshare program to implement additional vanpools
4.12	Transit Expansion	Administration (Employers)	Pursue funding for vanpools to Wilsonville employment sites.		2006, ongoing	ongoing $$	ongoing $$
4.13	Transit Expansion	Administration (Planning)	Research the feasibility and interest in forming a Transportation Management Association (TMA) in Wilsonville once the Coffee Creek I area is developed.	$ 1,190,000	2012	Discussion Item	Not sure this is necessary with SMART Options program; more funding for Options program could accomplish similar goals; RTP Project 11113

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

Updated Feb. 2012

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
5.1	Transit Sustainability	Administration (Planning)	Work to reduce the number of vehicle miles traveled in the City by monitoring transportation demand management programs of area businesses and assisting employers in meeting ECO rule requirements.		ongoing	Accomplished and ongoing	SMART calculates VMT reductions for SMART services and programs when appropriate
5.2	Transit Sustainability	Administration (Employers)	Continue to operate the SMART Options program to work with area businesses and market travel demand management and commuting alternatives. Provide incentives that encourage employees to reduce SOV commute trips.		ongoing	Accomplished and ongoing	Accomplished and ongoing
5.3	Transit Sustainability	Administration (Agency Coordination)	Take part in regional and state cooperative ridesharing, vanpooling, and marketing efforts to reduce air pollution and traffic congestion.		ongoing	Completed	Completed; participating in State Rideshare program and also implemented ZImRide a carpool/vanpool option using social networking sites
5.4	Transit Sustainability	Administration (City Code)	Develop and adopt City policies which encourage reduced reliance on the automobile by City employees and allow the City to act as a role model for other Wilsonville employers. These policies shall include provisions for flex- and compressed workweek schedules, telework, preferred parking, and other policies which encourage the use of alternative transportation modes, including transit, walking, and bicycling.		2007	Discussion Item	Important Discussion Item; City needs to be a leader in this area and implement policies/programs that SMART asks other businesses to implement
5.5	Transit Sustainability	Administration (City Code)	Continue to impose maximum parking limits in conformity with Metro standards for large developments and high employment and/or traffic generators.		ongoing	Discussion Item	Important discussion item; Transit service is much more effective in areas where parking is limited or there is a charge for parking; policy discussion needed
5.6	Transit Sustainability	Administration (City Code)	Allow for a reduction from minimum parking standards for developers who implement a TDM Plan approved by SMART.		ongoing	Discussion Item	Important discussion item; Transit service is much more effective in areas where parking is limited or there is a charge for parking; policy discussion needed
5.7	Transit Sustainability	Administration (Agency Coordination)	Work with City Public Works staff to determine what effects signal prioritization and queue bypass would have on travel times for the bus and if the measures could be expected to have a negative impact on overall traffic flow.		ongoing	Discussion Item	Could improve SMART's efficiency; I98requires City policy and support
5.8	Transit Sustainability	Administration (Planning)	Evaluate bus pull-outs on a case-by-case basis to ensure safety for passenger loading and unloading and to balance delays to cars and buses.		ongoing	Discussion Item	Bus pull outs are not necessary in most instances and actually negatively impact transit service
5.9	Transit Sustainability	City-wide (Traffic signals)	In coordination with other traffic flow, revise traffic signal timing sequences as appropriate to help buses.		ongoing	Discussion Item	
5.10	Transit Sustainability	Administration (Planning)	Research potential alternative fuels for transit vehicles, with a focus on environmental sustainability as well as cost efficiency. As new technologies mature and become readily available, evaluate their costs and benefits for SMART.		ongoing	Accomplished and ongoing	Pilot Project is underway to compare two like CNG buses with 2 diesel buses; Pilot complete in 2013; results in cost savings, fuel savings, pollution reduction etc. will assist in policy direction for future
5.11	Transit Sustainability	Bus Stops	Install solar-powered lighting at new bus shelters, wherever it is viable and the cost is not prohibitive when compared with conventional power. Encourage new developments providing bus shelters to use solar power for shelter lighting. Explore the use of photo-luminescent materials as another option for lighting at shelters.		2006, ongoing	Discussion Item	Pursue grants; $$ Policy discussion

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

2008 Wilsonville Transit Master Plan Projects

Measure	Improvement Type	Location	Improvement Description	Estimated Annual Cost	Master Plan Timeline	Status	Comment
5.12	Transit Sustainability	Administration (Agency Coordination)	Become a member of the Columbia-Willamette Clean Cities Initiative to work cooperatively with other jurisdictions and organizations to promote clean and efficient energy use.		2007	Discussion Item	Discussion Item
6.1	Transit Community	Administration (Planning)	Review existing bus route names and rename routes as needed to create a consistent naming system which provides an easy frame of reference and fosters a sense of community ownership.		(no date identified)	Completed	Completed 2009; SMART redesign attempted to accomplish this task; it is difficult to have names that fosters a sense of community ownership and also provides information about the routes and that also coordinate well with other providers; Always room for improvement and changes
6.2	Transit Community	Bus Stops	Allow neighborhoods and businesses the opportunity to participate in the design of their bus shelters, providing them with a shelter that reflects the character of the individual neighborhood. Residents could either provide their own designs or could participate in judging architectural competitions for shelter design. Sculptural artwork in proximity to the bus shelters could also be included in this process.		2007, ongoing	Accomplished and ongoing	Installed two custom shelters at SMART Central@Wilsonville Station; Designed by local artists with natural resources theme; installed two shelters (2010) with Wilsonville High School Logos etched in glass to deter vandalism; successful as of Nov 2011
6.3	Transit Community	Administration (Planning)	Research opportunities to provide transportation to community events such as races, art festivals, charity events, concerts, and special programs.		2006, ongoing	Accomplished and ongoing	Accomplished and ongoing
6.4	Transit Community	Buses	Expand the Art on the Bus Program to allow children a more frequent opportunity to display their artwork or writing on the bus.		2007, ongoing	Accomplished and ongoing	Accomplished and ongoing; Each year a SMART bus includes a custome wrap designed by Wilsonville Student Artists
6.5	Transit Community	Administration (Employers)	Recognize Wilsonville employers with an annual awards program that acknowledges the best efforts to promote transit, walking, bicycling, carpooling, vanpooling, or telework at the worksite.		2007, ongoing	Accomplished and ongoing	Accomplished and ongoing
6.6	Transit Community	Administration (Employers)	Recognize and support Wilsonville businesses with posted information in the bus. This information could include recognition of health and wellness or environmental programs and could also include employment opportunities.		(no date identified)	Accomplished and ongoing	Wilsonvilel business community is recognized for their support with a bronze plaque on the Commemorative Clock Tower at SMART Central; ongoing recognition through Options programs
6.7	Transit Community	Buses	Explore opportunities to purchase vehicles which provide a unique representation for the City of Wilsonville and SMART.		ongoing	Accomplished and ongoing	The Trolley purchased in 1999 is a good example and the fleet replacement plan includes Specialty Vehicles as a portion of SMART's fleet (i.e. Trolleys, Double Deckers etc.)

Gray = Completed , Yellow = Consider the Priority of these Projects , Light Yellow = Particularly Need Discussion and/or Policy Direction

Updated Feb. 2012

2008 Transit Master Plan -- Implementation Measure 3.1

Install bus shelters based on the identified priority list.
Update future priority lists on an annual basis.

Bus Stop Location	Status, Comment
Wilsonville Road at Willamette Way E.	Done
Wilsonville Road in front of SMART office	Done
Parkway Avenue at Ash Meadows	Done
Parkway Avenue south of Thunderbird Drive	Developer to buy and install
Wilsonville Road at Brown Road	Done
Boulder Creek Apartments	Negotiating w/property owner
Wilsonville Road at Montebello (both sides)	Done
Wilsonville Road at Boones Ferry Road	Re-route of Route 4 makes this unnecessary
Willamette Way E. at Chantilly	Shelter was installed, but neighborhood wanted buses out. No longer on Willamette.
95th Avenue at Nike Access Road	
Parkway Avenue at Boeckman Road (both sides)	Done
Wilsonville Road at Rose Lane	Done
95th Avenue at Hillman Court	Northbound Done

New Prioritized List

Bus Stop Location	Comment
Boulder Creek Apartments on Wilsonville Rd near Meadows Loop	Install shelter; negotiating w/property owner
95th Avenue at Nike Access Road	Install shelter
95th Avenue at Hillman Court (Southbound)	Install shelter
Parkway Avenue south of Thunderbird Drive	Developer to buy and install shelter
Wilsonville Rd. @ Montebello (Both sides)	Install new vandal resistant open air style shelter
Wilsonville Rd. opposite High School	Install new vandal resistant open air style shelter

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects

Map 1. Wilsonville Bicycle and Pedestrian Concept Map

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects (Highlighted Projects are Completed or Under Construction)

Reference Number	Related Project	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
C1		Bike/Ped Crossing	Town Center Loop	Create more direct connections between destinations within Town Center area, improve accessibility to civic uses, retrofit sidewalks with curb ramps, highlight crosswalks with colored pavement, or construct other similar treatments	$ 93,000	Partially Completed	RTP Project 11343 is similar (with focus on access to transit, given that it was nominated by SMART); cost estimate was $7,000,000
C2		Shared Use Path	Town Center Loop West (east side of road from Wilsonville Road to Parkway Avenue)	Expand width of current sidewalk to 10 feet to create a shared use path for pedestrians and bicyclists	$ 347,000		Has been discussed by the Bicycle and Pedestrian Task Force; one option may be to replace one auto lane with a bike/ped path (estimated cost may be approx. $50,000 to $100,000)
C3		Shared Use Path	Town Center Park Trail (Town Center Loop East to Town Center Park)	Construct shared use path on a portion of an easement owned by the City next to the post office	$ 71,000	Completed	
C4		Bike/Ped Bridge	Town Center Loop Bridge over I-5 (Boones Ferry Road to Town Center Loop West)	Construct bike/pedestrian bridge over I-5	$ 3,875,000		Would improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5
C5		Shared Travel Lanes	Parkway Avenue (Boeckman Road to Town Center Loop Drive)	Restripe Parkway Avenue with narrower center turn lane and wider travel lanes that are shared by vehicles and bicycles	$ 23,000	Revised Plan	Current Brenchley Estates development will be constructing a wide shared use path on their frontage (i.e., the west side of Parkway Avenue), which ends 250 feet north of Town Center Loop intersection
C6		Bike/Ped Bridge	Boeckman Road Bridge (Parkway Avenue to Boberg Road)	Construct bike/pedestrian bridge over I-5	$ 3,875,000	Partially Completed	Motor vehicle bridge already exists and includes bike lanes; Sidewalks and bike lanes should be included on 5-lane bridge identified as a motor vehicle need
C7		Bike Lanes and Sidewalks	Boeckman Road (Parkway Avenue to Canyon Creek Road)	Construct bike lanes and sidewalks	$ 500,000	Partially Completed	Sidewalks exist on north side of road, but not on south side (though the private Mentor Graphics trail is on the south side); there are no bike lanes
C8	C-6	Bike Lanes and Sidewalks	Canyon Creek Extension (Boeckman Creek Road to Vlahos Drive)	Construct bike lanes and sidewalks as part of roadway extension	$ 443,000	Partially Completed	
C9	W-4f	Bike Lanes and Sidewalks	Boeckman Road (Canyon Creek Road to Wilsonville Road)	Construct bike lanes and sidewalks	$ 878,000	Partially Completed	Preliminary design and survey has been completed for a shared use path on the south side of the road at the narrow dip section across Boeckman Creek (has been identified by the City Council as a priority project, and discussion on how to fund the project is forthcoming); 1,000-foot segment in middle (adjacent to Arbor Crossing subdivision) has already been improved and includes bike lanes on both sides and sidewalks on south side
C10		Shared Use Path	Frog Pond Trail (Canyon Creek Road to Wilsonville Road)	Construct shared use path through Frog Pond area as part of development; link neighborhoods, schools, and parks	$ 282,000		Would provide an off-street alternative to Boeckman Road
C11		Shared Use Path	School Trail (Boeckman Creek Elementary School to planned school site)	Construct shared use path with bridge over creek area	$ 685,000		Would provide an off-street alternative for accessing the planned school site from the adjacent neighborhood
C12		Shared Use Path	Memorial Park Central Loop Trail (within Memorial Park)	Construct shared use path in the heart of Memorial Park	$ 328,000		See the Memorial Park Master Plan for further details
C13		Shared Use Path	French Prairie Drive (County View Lane to Miley Road)	Construct five-foot wide shared use path for remaining length of French Prairie Drive	$ 1,110,000		Has been discussed by the Bicycle and Pedestrian Task Force; one option may be to replace one auto lane with a bike/ped path (estimated cost may be approx. $50,000 to $100,000)

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects (Highlighted Projects are Completed or Under Construction)

Reference Number	Related Project	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
C14	W-11	Bike Lanes and Sidewalks	Miley Road (I-5 Interchange to east French Prairie Drive)	Construct bike lanes and sidewalks	$ 950,000		Will create a complete loop around Charbonneau for pedestrians and bicyclists; will also connect regional bicyclists with bike lanes on Airport Road (portion of project is along section of Miley Road that would be widened under Project W-11)
C15		Bike/Ped Bridge	Bridge over I-5 south of Wilsonville Road interchange (Memorial Drive to 5th Street)	Construct bike/pedestrian bridge over I-5	$ 6,200,000		
C16		Bike Lanes and Sidewalks	5th Street (Boones Ferry Road to new I-5 Bridge)	Construct bike lanes and sidewalks with new development and connect to the proposed I-5 bike/ped bridge	$ 52,000		Traffic count should be reevaluated during project implementation
C17		Bike Lanes and Sidewalks	Boones Ferry Road (Wilsonville Road to Boones Ferry Park)	Construct bike lanes and sidewalks	$ 475,000	Partially Completed	Has been discussed by the Bicycle and Pedestrian Task Force; sidewalks and bike lanes exist along northern section of roadway (on both sides between Wilsonville Road and just south of Bailey Street and on west side south to 4th Street)
C18		Bike/Ped Crossing	Railroad tracks at Wilsonville Road	Construct pedestrian refuge island and provide crosswalk striping on Wilsonville Road just west of the railroad track	$ 23,000		
C19a	C-17	Bike Lanes and Sidewalks	Brown Road Extension (Wilsonville Road to Bailey Street)	Construct bike lanes and sidewalks as part of roadway extension	$ 325,000		Has been discussed by the Bicycle and Pedestrian Task Force (19a and 19b are two substitutable options)
C19b	C-17	Shared Use Path	Brown Road Extension (Wilsonville Road to Bailey Street)	If Brown Road extension not build, then construct shared use path	$ 325,000		Has been discussed by the Bicycle and Pedestrian Task Force (19a and 19b are two substitutable options)
C20a	C-17	Bike Lanes and Sidewalks	Brown Road Extension (Wilsonville Road to 5th Street)	Construct bike lanes and sidewalks as part of roadway extension	$ 172,000		Has been discussed by the Bicycle and Pedestrian Task Force (20a and 20b are two substitutable options)
C20b	C-17	Shared Use Path	Brown Road Extension (Wilsonville Road to 5th Street)	If Brown Road extension not build, then construct shared use path	$ 172,000		Has been discussed by the Bicycle and Pedestrian Task Force (20a and 20b are two substitutable options)
C21	C-14	Shared Use Path	Water Treatment Plant Connection (Water Treatment Plant to terminus of Kinsman Road near Wilsonville Road)	Construct off-street shared use path	$ 240,000		Identified as an off-street path, but may be preferable to construct sidewalks and bike lanes as part of Kinsman Road extension (2003 TSP Project C-14)
C22		Sidewalks	Willamette Way East (south of Wilsonville Road)	Fill in gaps in the sidewalk network	$ 30,000	Partially Completed	Likely need of Safe Routes to School program for nearby schools; 300-foot section between Wilsonville Road and north Chantilly intersection has been completed
C23a		Bike Lanes and Sidewalks	Boones Ferry Road (Wilsonville Road to Barber Street)	Construct bike lanes and sidewalks		Partially Completed	Sidewalks exist for full length on west side of road but only for 700-foot section north of Wilsonville Road on east side of road; there are no bike lanes
C23b		Bike Lanes and Sidewalks	Barber Street (Boones Ferry Road to Boberg Road)	Construct bike lanes and sidewalks		Completed	
C24		Sidewalks	Boberg Road (Boeckman Road to Barber Street)	Fill in gaps in the sidewalk network on the east side of the roadway	$ 365,000		This project is needed because Boberg Road is a transit route and is in close proximity to transit staion
C25		Bike Lanes and Sidewalks	Barber Street (Boberg Road to Kinsman Road)	Construct bike lanes and sidewalks	$ 431,000	Completed	
C26	C-2a, C-2b, C-7, C-24	Bike Lanes and Sidewalks	Kinsman Road Extension (Barber Street to Day Road)	Construct bike lanes and sidewalks as part of roadway extensions (multiple phases)	$ 2,200,000		Section from Barber Street to Boeckman Road (TSP Project C-2a) is currently under design

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects (Highlighted Projects are Completed or Under Construction)

Reference Number	Related Project	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
C27	C-25a, C-25b, C-26	Bike Lanes and Sidewalks	Barber Street (Kinsman Road to Grahams Ferry Road)	Construct bike lanes and sidewalks as part of roadway extensions and other Villebois development (multiple phases)	$ 1,380,000	Partially Completed	Section from Kinsman Road to Montebello Drive (TSP Project C-25b) is currently under design; remaining section to be constructed with adjacent Villebois development
C28		Shared Use Path	Eastern edge of Villebois open space (Barber Street to Villebois Drive)	Construct shared use path as part of Villebois development	$ 233,000		
C29		Shared Travel Lanes and Sidewalks	Costa Circle loop	Provide signed bike route and construct sidewalks as part of Villebois development	$ 800,000	Partially Completed	Bike lanes and signs exist along Costa Circle. Full Costa Circle Loop has not been completed, but sections that have been built (southern half) include sidewalks where there is adjacent development.
C30		Bike Lanes and Sidewalks	Villebois Drive (Boeckman Road to Costa Circle loop)	Construct bike lanes and sidewalks as part of Villebois development	$ 320,000		
C31		Bike Lanes and Sidewalks	Grahams Ferry Road (Day Road to Tooze Road)	Construct bike lanes and sidewalks	$ 1,980,000		Has been discussed by Bicycle and Pedestrian Task Force; including improvements south to Wilsonville Rd
C32		Bike Lanes and Sidewalks	Boeckman Road (95th Avenue to Tonquin Trail crossing)	Construct bike lanes and sidewalks	$ 215,000	Completed	Sidewalks on both sides extend to future Kinsman Road intersection; shared use trail (section of Tonquin Trail) then extends along south side of Boeckman Road to 110th Avenue; bike lanes extend along entire length of Boeckman Road extension; assume that Tonquin Trail will cross Boeckman Road at the future Kinsman Road intersection
C33		Sidewalks	95th Avenue (Boeckman Road to Hillman Court)	Fill in gaps in the sidewalk network on the east side of the roadway	$ 80,000		
C34		Bike Lanes and Sidewalks	Clutter Road (Garden Acres Road to Grahams Ferry Road)	Construct bike lanes and sidewalks	$ 347,000		
C35		Bike Lanes and Sidewalks	Cahalin Road (Kinsman Road extension to Tonquin trail)	Construct bike lanes and sidewalks as part of roadway extension; may provide additional connection to the Tonquin Trail on the west (which would require a railroad crossing)	$ 690,000		A portion of Cahalin Road exists west of Grahams Ferry Road and extends to the railroad tracks, but is a narrow, two-lane road with sidewalks only on the north side
C36		Shared Used Path	BPA Power Line Trail (Day Road to Tonquin Trail)	Construct shared use path	$ 490,000		Provides Tonquin Trail users access to north Wilsonville
C37		Shared Used Path	Area 42 Trail (Kinsman Road to Day Road)	Construct shared use path	$ 215,000		Outlined in the Preliminary Urban Reserve Plan Area 42 and North Wilsonville Industrial Area Proposed Concept Plan providing a connection to the BPA power line easement
C38		Sidewalks	Commerce Circle loop	Fill in gaps in the sidewalk network, especially on northern half of loop	$ 98,000		
C39		Bike Lanes and Sidewalks	Elligsen Road (Argyle Square shopping center to Eastern City Limits)	Construct bike lanes and sidewalks	$ 160,000	Partially Completed	Sidewalks and bike lanes exist on both sides of street west of Parkway Center Drive; east of Parkway Center Drive the south side sidewalk extends for 650 feet and then there is a 700-foot section east of Canyon Creek Road where Elligsen Road has been improved and includes a bike lane and sidewalk on the south side
C40	W-15	Bike Lanes and Sidewalks	Parkway Avenue (Xerox Drive to Parkway Center Drive)	Construct bike lanes and sidewalks as part of roadway widening	$ 515,000		Important north-south connection between industrial campuses and Elligsen Road
C41		Shared Used Path	Parkway Center Connector (Wiedeman Road Trail to Parkway Center Drive)	Construct shared use path as development occurs; connects to proposed regional trail (Wiedeman Road Trail) on the south	$ 117,000		
C42		Shared Used Path	Canyon Creek Trail (Canyon Creek Park to Boeckman Creek Trail)	Construct shared use path between Canyon Creek Park and Boeckman Creek Trail	$ 198,000		Connects Frog Pond area to adjacent to neighborhoods and parks

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects (Highlighted Projects are Completed or Under Construction)

Reference Number	Related Project	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
C43		Crossing	Wilsonville Road/Rose Lane intersection	Construct pedestrian refuge island and crosswalk striping on Wilsonville Road	$ 46,500		Provides two-stage crossing connecting church and residential area on north with Memorial Park on south
L1		Natural Trail	Center Loop Trail (through Graham Oaks Natural Area)	Construct natural trail that circumnavigates main open space of tract; include paved section from Wilsonville Road to Tonquin Trail	$ 410,000	Completed	
L2		Natural Trail	Triangle Forest Trail (Center Loop Trail to Tonquin Trail)	Construct natural trail through wooded portion of site; connects to Center Loop Trail	$ 200,000	Completed	
L3		Natural Trail	Indian Plum Creek Trail (Tonquin Trail to Center Loop Trail)	Construct natural trail by two creeks; connecting Wilsonville Road with Tonquin Trail and Center Loop Trail	$ 190,000	Completed	
L4		Natural Trail	Lone Oak Trail (accessed from Center Loop Trail)	Construct natural trail leading to "The Lone Oak"	$ 21,000	Completed	
L5		Natural Trail	River Trail (Memorial Park Center Loop Trail)	Construct natural trail connecting to boat dock, several river overlooks with benches, the Center Loop Trail, and the Homestead Trail	$ 127,000		
L6		Natural Trail	Kolbe Homestead Trail (River Trail to Memorial Park Center Loop Trail)	Construct interpretative route/natural trail offering information and self-guided tour of historic Kolbe homestead	$ 62,000		Dirt path exists, needs gravel improvements; Metro Local Share Funds available to improve this path. Future CIP, FY 13-14'
L7		Natural Trail	Klein Homestead Trail (accessed from Kolbe Homestead Trail)	Construct interpretative route/natural trail offering information and self-guided tour of historic Klein homestead	$ 62,000		Public Works facility in the vicinity
L8		Low Volume Roadway	Park Access Trail (accessed from Montgomery Way)	Construct low volume roadway if allowed following extensive public process	$ 12,000		Dependent upon long-range plan for Meridian Landing state-controlled property just east of the current Wilsonville city boundary; would involve extensive public process before any actual construction occurred
L9		City Trail	Town Center Loop (City Hall to Clackamas Community College)	Construct City trail through open space	$ 52,000	Completed	Rather than winding though open space, a wide shared use path was constructed along west edge of Town Center Loop East
L10		City Trail	Park at Merryfield Trail (Camelot Street to Inza Wood Middle School)	Widen and stripe City trail	$ 47,000		
L11		Natural Trail	Tonquin Connector (Tonquin Trail to Park at Merryfield Trai)	Construct natural trail	$ 30,000	Completed	
L12		City Trail	Villebois Loop Trail (Villebois Greenway to Tonquin Trail)	Construct City trail as part of Villebois development; include connections to Villebois Greenway, the Tonquin Trail, and the Village Center	$ 172,000		
L13		City Trail	School Trail (Planned school site to Barber Street)	Construct trail as part of Villebois development; include connections to new school, Tonquin Trail, and Barber Street	$ 217,000	Partially Completed	Sections are being constructed at time of fronting Villebois development
L14		City Trail	Frog Pond Loop (Proposed Community Park)	Construct trail as part of Frog Pond development; with connections to three proposed parks and the proposed regional Boeckman Creek Trail	$ 281,000		
L15		Natural Trail	Rivergreen Trail (Tonquin Trail/SW Willamette Way to Waterfront Trail)	Construct natural trail providing access to the river for surrounding residents; potential connection on west to existing Metro property and proposed Tonquin Trail	$ 251,000	Not supported by HOA	Would require easement from Rivergreen HOA to locate trail through their common property; Metro's Tonquin Trail Master Plan has realigned this path to a new location from Graham Oaks, along the frontage of CREST, south to the Water Treatment Plant Park

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects (Highlighted Projects are Completed or Under Construction)

Reference Number	Related Project	Improvement Type	Location	Improvement Description	Estimated Cost	Current Status	Comment
R1		Regional Trail	Tonquin Trail (Tualatin/Sherwood to Champoeg State Park, with section in the Wilsonville vicinity extending from Cahalin Road to the Willamette River)	Construct north-south trail through west Wilsonville, with connections to the Rivergreen Trail, Wilsonville Road, throughout Villebois, Boeckman Road, Cahalin Road, and the BPA power line easement	$ 2,900,000	Partially Completed	Portions of trail through Graham Oaks Nature Area, developed area of Villebois, and along Boeckman Road have already been completed; remaining section through Villebois should be built with development, while rest of trail is through nature area and is not development dependent; RTP Project 10092
R2		Regional Trail	Stafford Spur Trail (Lake Oswego to Wilsonville, with section in the Wilsonville vicinity extending from Canyon Creek Park to Stafford Road)	Construct north-south trail in northeast Wilsonville, with connections to the Canyon Creek Park, Wiedeman Road Trail, and Stafford Road	$ 1,600,000		Currently an undeveloped area
R3		Regional Trail	Boeckman Creek Trail (Canyon Creek Park to Memorial Park)	Construct north-south trail through east Wilsonville following Boeckman Creek, with connections to Canyon Creek Park, Boeckman Road, existing community pathway crossing Boeckman Creek, Wilsonville Road, and Memorial Park	$ 1,900,000		Would require a comprehensive public process prior to implementation; may need a boardwalk for various sections
R4		Regional Trail	Waterfront Trail (Willamette Way East to Memorial Park)	Construct east-west trail along north bank of Willamette River, with connections to Willamette Way East, the Water Treatment Plant, Boones Ferry Park, and Memorial Park; also provide greater access and opportunities to view the Willamette River	$ 1,400,000	Partially Completed	Portions of this trail have already been built (from Willamette Way East to the Water Treatment Plant and from Boones Ferry Park to Chia Loop). However, the Master Plan indicated that until land use along the other sections of the river change to a more compatible use (due to the ownership and operations of Willamette Concrete) a trail is not appropriate. Any trail through private property will require the negotiation of an easement from the property owners before any trail will be considered.
R4a		Regional Trail	Waterfront Trail Improvement (Memorial Park to Boones Ferry Park; Underneath I-5)	Improve the condition of the trail as it passes underneath the I-5 Boone Bridge by removing the Jersey barriers, installing bollards, widening the trail to 10 feet, adding appropriate pedestrian features such as benches, and altering the grade of the path underneath the underpass to make it more easily accessible	$ 50,000		Has been discussed by Bicycle and Pedestrian Task Force
R5		Bike/Ped Bridge	Willamette River Bike/Ped Bridge	Construct bike/pedestrian bridge over the Willamette River to provide non-motorized users a safe and comfortable alternative to the I-5 freeway deck	$ 15,000,000		Has been discussed by Bicycle and Pedestrian Task Force; RTP Project 10133
R6a		Regional Trail	Wiedeman Road Trail—Phase 1 (Canyon Creek Road to Parkway Avenue)	Construct east-west trail in north Wilsonville near the Xerox campus	$ 330,000		Has been discussed by Bicycle and Pedestrian Task Force
R6b		Regional Trail	Wiedeman Road Trail—Phase 2 (Parkway Avenue to Tonquin Trail, with I-5 overpass)	Construct east-west trail in north Wilsonville across I-5 (new overpass) and along Boones Ferry Road and Freeman Drive	$ 3,300,000		
R6c		Regional Trail	Wiedeman Road Trail—Phase 3 (Canyon Creek Road to Stafford Spur Trail)	Construct east-west trail in northeast Wilsonville through Canyon Creek Park and adjacent undeveloped land to the east	$ 700,000		

Level of Service Descriptions

TRAFFIC LEVELS OF SERVICE

Analysis of traffic volumes is useful in understanding the general nature of traffic in an area, but by itself indicates neither the ability of the street network to carry additional traffic nor the quality of service afforded by the street facilities. For this, the concept of *level of service* has been developed to subjectively describe traffic performance. Level of service can be measured at intersections and along key roadway segments.

Level of service categories are similar to report card ratings for traffic performance. Intersections are typically the controlling bottlenecks of traffic flow and the ability of a roadway system to carry traffic efficiently is generally diminished in their vicinities. Levels of Service A, B and C indicate conditions where traffic moves without significant delays over periods of peak travel demand. Level of service D and E are progressively worse peak hour operating conditions and F conditions represent where demand exceeds the capacity of an intersection. Most urban communities set level of service D as the minimum acceptable level of service for peak hour operation and plan for level of service C or better for all other times of the day. The *Highway Capacity Manual* provides level of service calculation methodology for both intersections and arterials.[1] The following two sections provide interpretations of the analysis approaches.

[1] *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C., 2000, Chapters 16 and 17.

UNSIGNALIZED INTERSECTIONS (Two-Way Stop Controlled)

Unsignalized intersection level of service is reported for the major street and minor street (generally, left turn movements). The method assesses available and critical gaps in the traffic stream which make it possible for side street traffic to enter the main street flow. The *2000 Highway Capacity Manual* describes the detailed methodology. It is not unusual for an intersection to experience level of service E or F conditions for the minor street left turn movement. It should be understood that, often, a poor level of service is experienced by only a few vehicles and the intersection as a whole operates acceptably.

Unsignalized intersection levels of service are described in the following table.

Level of Service	Expected Delay	(Sec/Veh)
A	Little or no delay	0-10.0
B	Short traffic delay	>10.1-15.0
C	Average traffic delays	>15.1-25.0
D	Long traffic delays	>25.1-35.0
E	Very long traffic delays	>35.1-50.0
F	Extreme delays potentially affecting other traffic movements in the intersection	> 50

Source: 2000 *Highway Capacity Manual*, Transportation Research Board Washington, D.C.

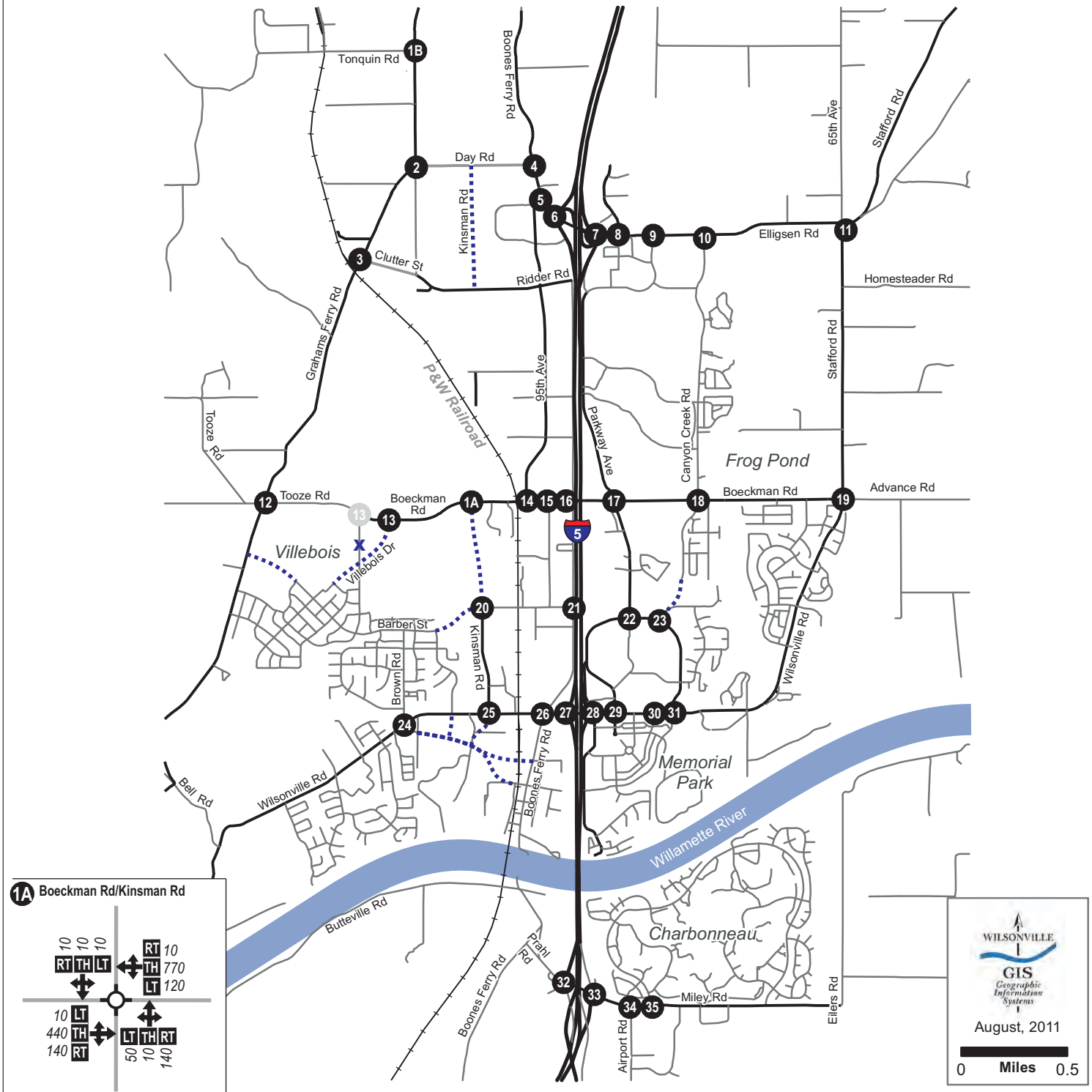
SIGNALIZED INTERSECTIONS

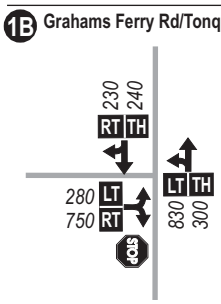
For signalized intersections, level of service is evaluated based upon average vehicle delay experienced by vehicles entering an intersection. Control delay (or signal delay) includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. In previous versions of this chapter of the HCM (1994 and earlier), delay included only stopped delay. As delay increases, the level of service decreases. Calculations for signalized and unsignalized intersections are different due to the variation in traffic control. The *2000 Highway Capacity Manual* provides the basis for these calculations.

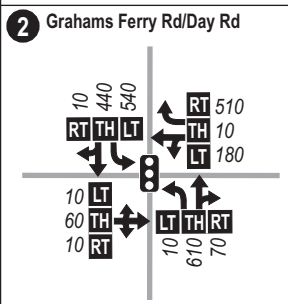
Level of Service	Delay (secs.)	Description
A	≤10.00	**Free Flow/Insignificant Delays:** No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Most vehicles do not stop at all. Progression is extremely favorable and most vehicles arrive during the green phase.
B	10.1-20.0	**Stable Operation/Minimal Delays:** An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. This level generally occurs with good progression, short cycle lengths, or both.
C	20.1-35.0	**Stable Operation/Acceptable Delays:** Major approach phases fully utilized. Most drivers feel somewhat restricted. Higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, and the number of vehicles stopping is significant.
D	35.1-55.0	**Approaching Unstable/Tolerable Delays:** The influence of congestion becomes more noticeable. Drivers may have to wait through more than one red signal indication. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high v/c ratios. The proportion of vehicles not stopping declines, and individual cycle failures are noticeable.
E	55.1-80.0	**Unstable Operation/Significant Delays:** Volumes at or near capacity. Vehicles may wait though several signal cycles. Long queues form upstream from intersection. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are a frequent occurrence.
F	≥80.0	**Forced Flow/Excessive Delays:** Represents jammed conditions. Queues may block upstream intersections. This level occurs when arrival flow rates exceed intersection capacity, and is considered to be unacceptable to most drivers. Poor progression, long cycle lengths, and v/c ratios approaching 1.0 may contribute to these high delay levels.

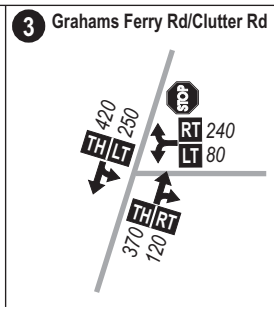
Source: *2000 Highway Capacity Manual*, Transportation Research Board, Washington D.C.

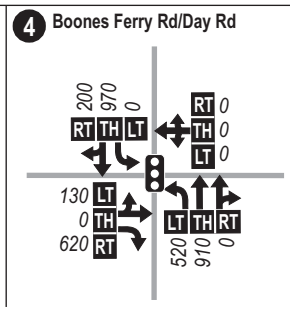
Figure A: 2035 Baseline P.M. Peak Hour Traffic Volumes

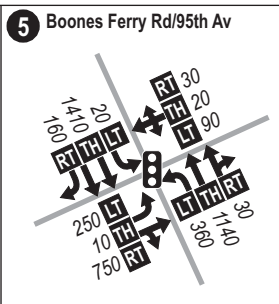












LEGEND

- 00 - Study Intersection
- ← - Lane Configuration
- 000 - PM Peak Hour Traffic Volume
- LT TH RT - Volume Turn Movement (Left • Thru • Right)
- Traffic Signal
- STOP - Stop Sign
- Roundabout
- X - Future Roadway Closure
- Future Roadway Extension
- 00 - Prior Study Intersection

DKS Associates TRANSPORTATION SOLUTIONS

CITY OF WILSONVILLE
Transportation System Plan

2035 Baseline PM Peak Hour Traffic Volumes (Page 1 of 2)

FIGURE A

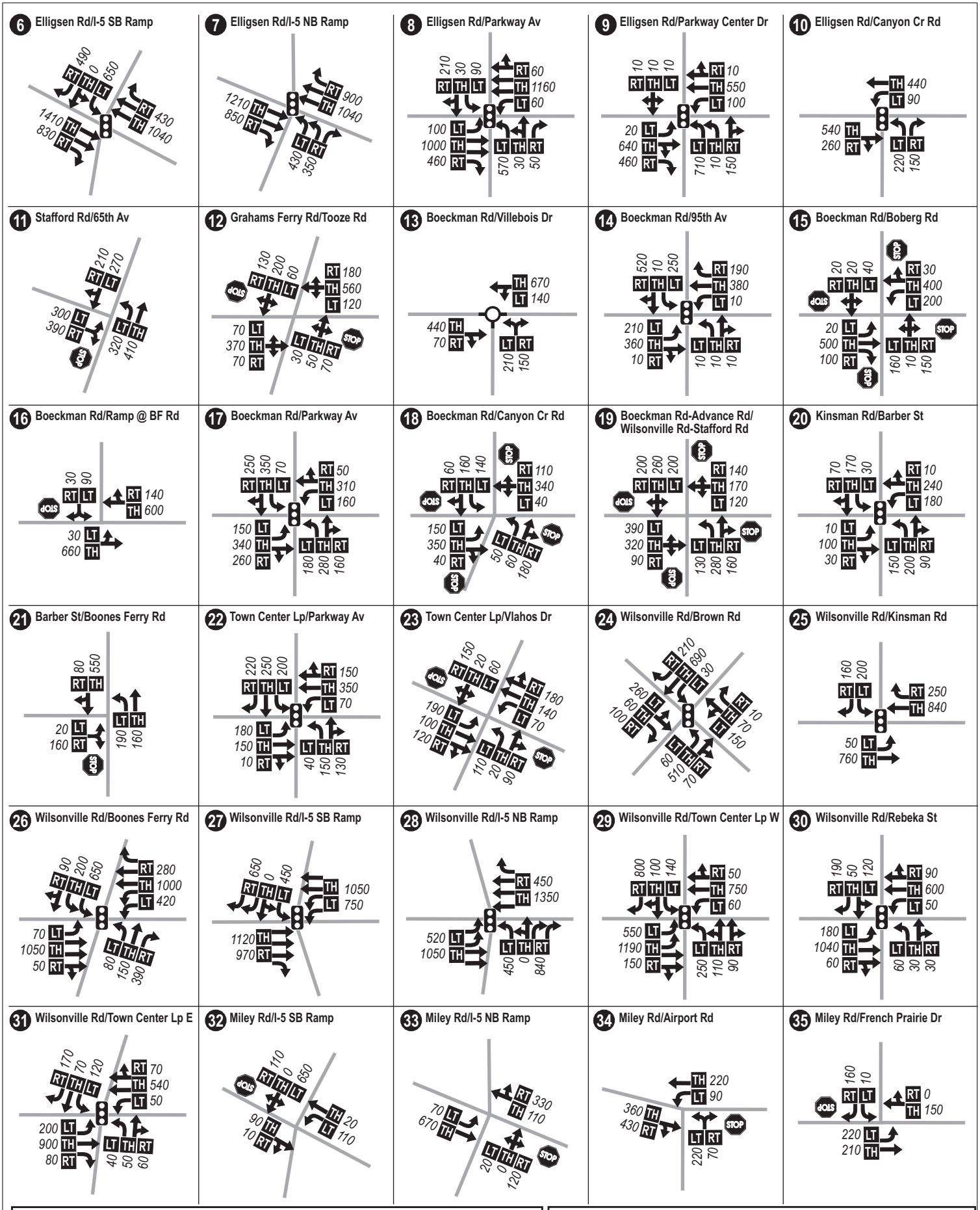
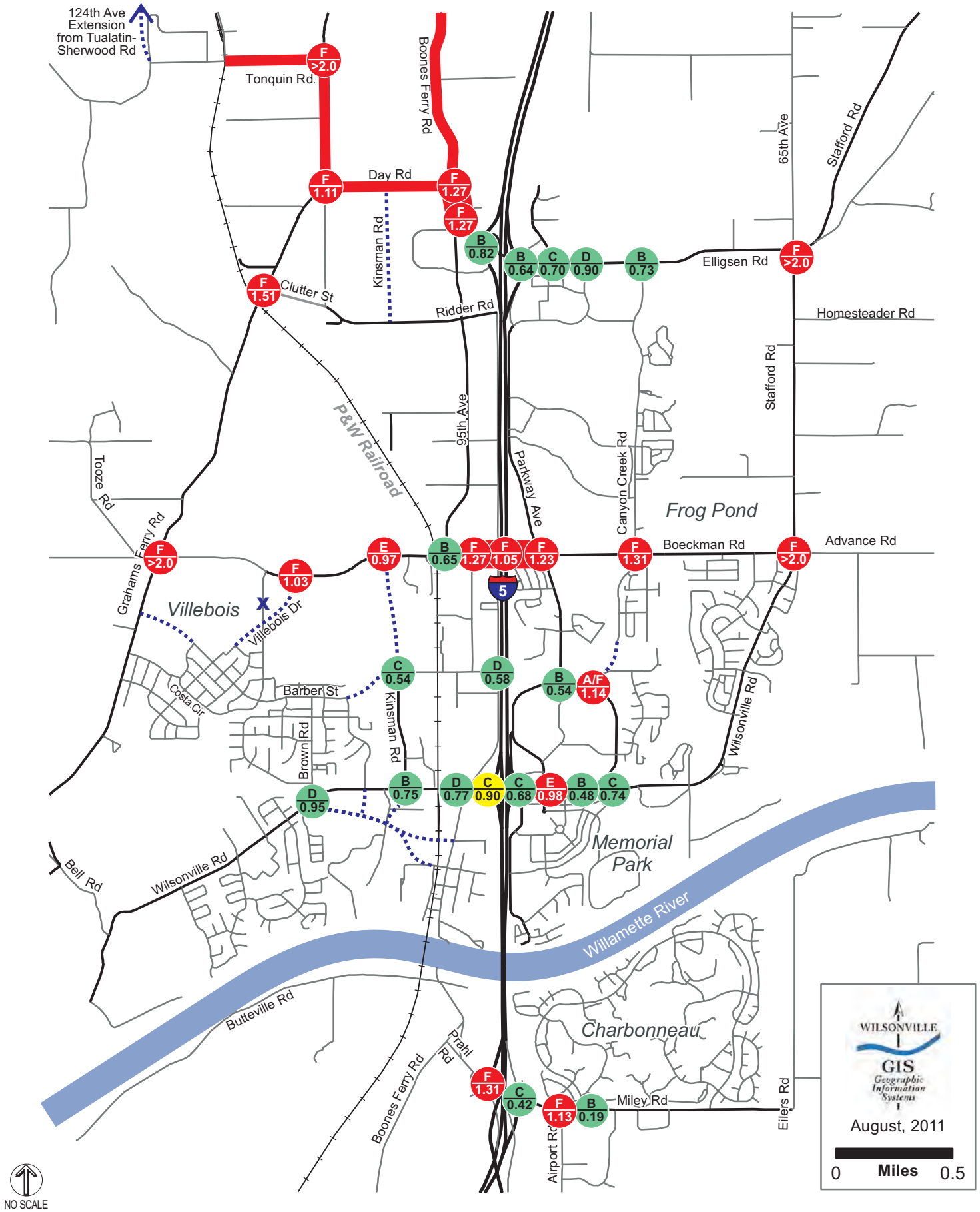

6 Elligsen Rd/I-5 SB Ramp
7 Elligsen Rd/I-5 NB Ramp
8 Elligsen Rd/Parkway Av
9 Elligsen Rd/Parkway Center Dr
10 Elligsen Rd/Canyon Cr Rd
11 Stafford Rd/65th Av
12 Grahams Ferry Rd/Tooze Rd
13 Boeckman Rd/Villebois Dr
14 Boeckman Rd/95th Av
15 Boeckman Rd/Boberg Rd
16 Boeckman Rd/Ramp @ BF Rd
17 Boeckman Rd/Parkway Av
18 Boeckman Rd/Canyon Cr Rd
19 Boeckman Rd-Advance Rd/ Wilsonville Rd-Stafford Rd
20 Kinsman Rd/Barber St
21 Barber St/Boones Ferry Rd
22 Town Center Lp/Parkway Av
23 Town Center Lp/Vlahos Dr
24 Wilsonville Rd/Brown Rd
25 Wilsonville Rd/Kinsman Rd
26 Wilsonville Rd/Boones Ferry Rd
27 Wilsonville Rd/I-5 SB Ramp
28 Wilsonville Rd/I-5 NB Ramp
29 Wilsonville Rd/Town Center Lp W
30 Wilsonville Rd/Rebeka St
31 Wilsonville Rd/Town Center Lp E
32 Miley Rd/I-5 SB Ramp
33 Miley Rd/I-5 NB Ramp
34 Miley Rd/Airport Rd
35 Miley Rd/French Prairie Dr
LEGEND
00 - Study Intersection
- Lane Configuration
000 - PM Peak Hour Traffic Volume
LT TH RT Left•Thru•Right - Volume Turn Movement
- Traffic Signal
STOP - Stop Sign
- Roundabout
NO SCALE
DKS Associates TRANSPORTATION SOLUTIONS
CITY OF WILSONVILLE
Transportation System Plan
2035 Baseline PM Peak Hour Traffic Volumes (Page 2 of 2)
FIGURE A

Table A: 2035 Baseline HCM Intersection Operations (with Output Reports)



LEGEND

- X - Future Roadway Closure
- ▪▪▪ - Future Roadway Extension
- ▬ - Roadway Segment Exceeds Capacity

Intersection Operations

- LOS V/C - Does Not Meet Applicable Mobility Standards
- LOS V/C - Additional Analysis Needed to Determine if Meets Applicable Mobility Standards
- LOS V/C - Meets Applicable Mobility Standards

CITY OF WILSONVILLE
Transportation System Plan

2035 Baseline PM Peak Hour Traffic Operations

FIGURE B

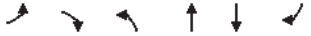
Table A: 2035 Future Operating Conditions at Study Intersections (P.M. Peak Hour)

Intersection[a]	Jurisdiction	Mobility Standard	Intersection Performance[b]	
			LOS	*V/C*
Signalized				
(2) Grahams Ferry Rd/Day Rd	City of Wilsonville	LOS D	**F**	1.11
(4) Boones Ferry Rd/Day Rd	Washington Co.	≤ 0.99	F	**1.27**
(5) Boones Ferry Rd/95th Ave	Washington Co.	≤ 0.99	F	**1.27**
(6) Elligsen Rd/I-5 SB Ramp	ODOT	≤ 0.85	B	0.82
(7) Elligsen Rd/I-5 NB Ramp	ODOT	≤ 0.85	B	0.64
(8) Elligsen Rd/Parkway Ave	City of Wilsonville	LOS D	C	0.70
(9) Elligsen Rd/Parkway Center Drive	City of Wilsonville	LOS D	D	0.90
(10) Elligsen Rd/Canyon Cr Rd	City of Wilsonville	LOS D	B	0.73
(14) Boeckman Rd/95th Ave	City of Wilsonville	LOS D	B	0.65
(17) Boeckman Rd/Parkway Ave	City of Wilsonville	LOS D	**F**	1.23
(20) Kinsman Rd/Barber St	City of Wilsonville	LOS D	C	0.54
(22) Town Center Lp/Parkway Ave	City of Wilsonville	LOS D	B	0.54
(24) Wilsonville Rd/Brown Rd	City of Wilsonville	LOS D	D	0.95
(25) Wilsonville Rd/Kinsman Rd	City of Wilsonville	LOS D	B	0.75
(26) Wilsonville Rd/Boones Ferry Rd[c]	City of Wilsonville	LOS D	D	0.77
(27) Wilsonville Rd/I-5 SB Ramp[c]	ODOT	≤ 0.85	C	**0.90**
(28) Wilsonville Rd/I-5 NB Ramp[c]	ODOT	≤ 0.85	C	0.68
(29) Wilsonville Rd/Town Center Lp W[c]	City of Wilsonville	LOS D	**E**	0.98
(30) Wilsonville Rd/Rebekah St	City of Wilsonville	LOS D	B	0.48
(31) Wilsonville Rd/Town Center Lp E	City of Wilsonville	LOS D	C	0.74
Roundabout				
(13) Boeckman Rd/Villebois Dr	City of Wilsonville	LOS D	**F**	1.03
(1A) Boeckman Rd/Kinsman Rd	City of Wilsonville	LOS D	**E**	0.97
All-Way Stop Controlled				
(15) Boeckman Rd/Boberg Rd	City of Wilsonville	LOS D	**F**	1.27
(18) Boeckman Rd/Canyon Cr Rd	City of Wilsonville	LOS D	**F**	1.31
(19) Boeckman Rd/Stafford Rd	City of Wilsonville	LOS D	**F**	> 2.00
Two-Way Stop Controlled				
(1B) Grahams Ferry Rd/Tonquin Rd	Washington Co.	≤ 0.99	D/F	**> 2.00**
(3) Grahams Ferry Rd/Clutter Rd	City of Wilsonville	LOS D	**A/F**	1.51
(11) Stafford Rd/65th Ave	Clackamas Co.	LOS D	**B/F**	> 2.00
(12) Grahams Ferry Rd/Tooze Rd	City of Wilsonville	LOS D	**A/F**	> 2.00
(16) Boeckman Rd/Boones Ferry Rd Access Lp	City of Wilsonville	LOS D	**A/F**	1.05
(21) Boones Ferry Rd/Barber St	City of Wilsonville	LOS D	B/D	0.58
(23) Town Center Lp/Vlahos Dr	City of Wilsonville	LOS D	**A/F**	1.14
(32) Miley Rd/I-5 SB Off Ramp	ODOT	≤ 0.85	A/F	**1.31**
(33) Miley Rd/I-5 NB Off Ramp	ODOT	≤ 0.85	A/C	0.42
(34) Miley Rd/NE Airport Rd	Clackamas Co.	LOS D	**A/F**	1.13
(35) Miley Rd/ French Prairie Dr W	Clackamas Co.	LOS D	A/B	0.19

Signalized and All-Way Stop intersections:
Delay = Average Stopped Delay per Vehicle (seconds) for Intersection
LOS = Level of Service of Intersection
V/C = Volume-to-Capacity Ratio of Intersection

Two-Way Stop Controlled intersections:
Delay = Average Stopped Delay per Vehicle (seconds) for Worst Approach
LOS = Level of Service of Major Street/Minor Street
V/C = Volume-to-Capacity Ratio of Worst Movement

[a] Numbers correspond to volumes figure.
[b] **Bold shaded** values do not meet standards.
[c] Improvements are currently being constructed at the I-5/Wilsonville Road Interchange. The analysis assumes post-construction lane geometries and traffic control.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	280	750	830	300	240	230
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	304	815	902	326	261	250
Pedestrians	1					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2517	387	512			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2517	387	512			
tC, single (s)	6.4	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.3			
p0 queue free %	0	0	13			
cM capacity (veh/h)	4	645	1032			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1120	1228	511
Volume Left	304	902	0
Volume Right	815	0	250
cSH	14	1032	1700
Volume to Capacity	78.22	0.87	0.30
Queue Length 95th (ft)	Err	299	0
Control Delay (s)	Err	26.8	0.0
Lane LOS	F	D	
Approach Delay (s)	Err	26.8	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	3927.5		
Intersection Capacity Utilization	160.2%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	60	10	180	10	510	10	610	70	540	440	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99			1.00	1.00	1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			0.98	1.00	1.00	1.00		1.00	1.00	
Frt		0.98			1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.95	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1845			1587	1509	1805	1765		1719	1694	
Flt Permitted		0.95			0.77	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1770			1273	1509	1805	1765		1719	1694	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	63	11	189	11	537	11	642	74	568	463	11
RTOR Reduction (vph)	0	9	0	0	0	22	0	6	0	0	1	0
Lane Group Flow (vph)	0	76	0	0	200	515	11	710	0	568	473	0
Confl. Peds. (#/hr)			6	6								
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	13%	0%	7%	0%	6%	6%	5%	12%	0%
Turn Type	Perm	NA		Perm	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8						
Actuated Green, G (s)		13.0			13.0	29.1	1.3	19.3		16.1	34.1	
Effective Green, g (s)		13.0			13.0	29.1	1.3	19.3		16.1	34.1	
Actuated g/C Ratio		0.22			0.22	0.48	0.02	0.32		0.27	0.56	
Clearance Time (s)		4.0			4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		381			274	827	39	564		458	956	
v/s Ratio Prot						0.17	0.01	c0.40		c0.33	0.28	
v/s Ratio Perm		0.04			c0.16	0.18						
v/c Ratio		0.20			0.73	0.62	0.28	1.26		1.24	0.49	
Uniform Delay, d1		19.4			22.1	11.6	29.1	20.5		22.1	7.9	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			9.4	1.5	3.9	130.3		125.5	0.4	
Delay (s)		19.7			31.4	13.0	33.0	150.8		147.7	8.4	
Level of Service		B			C	B	C	F		F	A	
Approach Delay (s)		19.7			18.0			149.0			84.3	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM Average Control Delay	81.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	60.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	80	240	370	120	250	420
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	91	273	420	136	284	477
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1534	489			557	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1534	489			557	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	0	51			71	
cM capacity (veh/h)	89	556			966	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	364	557	761
Volume Left	91	0	284
Volume Right	273	136	0
cSH	241	1700	966
Volume to Capacity	1.51	0.33	0.29
Queue Length 95th (ft)	540	0	31
Control Delay (s)	286.2	0.0	6.5
Lane LOS	F		A
Approach Delay (s)	286.2	0.0	6.5
Approach LOS	F		

Intersection Summary				
Average Delay		64.8		
Intersection Capacity Utilization		91.9%	ICU Level of Service	F
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	130	0	620	0	0	0	520	910	0	0	970	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0				4.0	4.0			4.0	
Lane Util. Factor		1.00	1.00				1.00	0.95			1.00	
Frpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00				1.00	1.00			1.00	
Frt		1.00	0.85				1.00	1.00			0.97	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1612	1538				1597	3505			1763	
Flt Permitted		0.76	1.00				0.95	1.00			1.00	
Satd. Flow (perm)		1285	1538				1597	3505			1763	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	137	0	653	0	0	0	547	958	0	0	1021	211
RTOR Reduction (vph)	0	0	6	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	137	647	0	0	0	547	958	0	0	1226	0
Confl. Bikes (#/hr)									1			4
Heavy Vehicles (%)	12%	0%	5%	0%	0%	0%	13%	3%	0%	0%	3%	12%
Turn Type	Perm	NA	pt+ov	Perm			Prot	NA		Prot	NA	
Protected Phases		8	8 1		4		1	6		5	2	
Permitted Phases	8			4								
Actuated Green, G (s)		16.1	59.1				39.0	79.9			36.9	
Effective Green, g (s)		16.1	59.1				39.0	80.9			37.9	
Actuated g/C Ratio		0.15	0.56				0.37	0.77			0.36	
Clearance Time (s)		4.0					4.0	5.0			5.0	
Vehicle Extension (s)		3.0					3.0	3.0			3.0	
Lane Grp Cap (vph)		197	866				593	2701			636	
v/s Ratio Prot			c0.42				c0.34	0.27			c0.70	
v/s Ratio Perm		0.11										
v/c Ratio		0.70	0.75				0.92	0.35			1.93	
Uniform Delay, d1		42.1	17.3				31.6	3.8			33.5	
Progression Factor		1.00	1.00				0.83	0.83			1.00	
Incremental Delay, d2		10.2	3.6				16.9	0.3			423.0	
Delay (s)		52.3	20.9				43.3	3.4			456.5	
Level of Service		D	C				D	A			F	
Approach Delay (s)		26.3			0.0			17.9			456.5	
Approach LOS		C			A			B			F	

Intersection Summary					
HCM Average Control Delay		173.0	HCM Level of Service	F	
HCM Volume to Capacity ratio		1.27			
Actuated Cycle Length (s)		105.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization		109.2%	ICU Level of Service	H	
Analysis Period (min)		15			
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	10	750	90	20	30	360	1140	30	20	1410	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85			0.97		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	1650			1782		1400	3000		1805	3200	1464
Flt Permitted	0.66	1.00			0.18		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1192	1650			335		1400	3000		1805	3200	1464
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	10	773	93	21	31	371	1175	31	21	1454	165
RTOR Reduction (vph)	0	414	0	0	9	0	0	2	0	0	0	36
Lane Group Flow (vph)	258	369	0	0	136	0	371	1204	0	21	1454	129
Confl. Peds. (#/hr)									1	1		
Confl. Bikes (#/hr)						3						1
Heavy Vehicles (%)	5%	13%	7%	0%	0%	0%	20%	8%	0%	0%	3%	8%
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4								2
Actuated Green, G (s)	18.0	18.0			18.0		34.6	71.9		3.1	40.4	40.4
Effective Green, g (s)	18.0	18.0			18.0		34.6	71.9		3.1	40.4	40.4
Actuated g/C Ratio	0.17	0.17			0.17		0.33	0.68		0.03	0.38	0.38
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	204	283			57		461	2054		53	1231	563
v/s Ratio Prot		0.22					c0.27	0.40		0.01	c0.45	
v/s Ratio Perm	0.22				c0.41							0.09
v/c Ratio	1.26	1.30			2.38		0.80	0.59		0.40	1.18	0.23
Uniform Delay, d1	43.5	43.5			43.5		32.1	8.7		50.0	32.3	21.8
Progression Factor	1.00	1.00			1.00		1.29	0.59		1.19	0.83	0.69
Incremental Delay, d2	152.1	159.7			673.1		10.6	0.9		0.4	82.4	0.0
Delay (s)	195.6	203.2			716.6		52.0	6.1		60.1	109.3	15.1
Level of Service	F	F			F		D	A		E	F	B
Approach Delay (s)		201.3			716.6			16.9			99.2	
Approach LOS		F			F			B			F	

Intersection Summary				
HCM Average Control Delay	114.2	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.27			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	127.1%	ICU Level of Service	H	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1410	830	0	1040	430	0	0	0	650	0	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0				4.0	4.0	4.0
Lane Util. Factor		0.95	1.00		0.95	1.00				0.95	0.95	1.00
Frpb, ped/bikes		1.00	0.99		1.00	1.00				1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Frt		1.00	0.85		1.00	0.85				1.00	1.00	0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (prot)		3471	1534		3312	1615				1649	1649	1369
Flt Permitted		1.00	1.00		1.00	1.00				0.95	0.95	1.00
Satd. Flow (perm)		3471	1534		3312	1615				1649	1649	1369
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1454	856	0	1072	443	0	0	0	670	0	505
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	42
Lane Group Flow (vph)	0	1454	856	0	1072	443	0	0	0	335	335	463
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	0%	4%	4%	0%	9%	0%	0%	0%	0%	4%	0%	18%
Turn Type		NA	Free		NA	Free				Split	NA	Prot
Protected Phases		2			6					4	4	4
Permitted Phases			Free			Free						
Actuated Green, G (s)		57.3	105.0		57.3	105.0				38.7	38.7	38.7
Effective Green, g (s)		58.3	105.0		58.3	105.0				38.7	38.7	38.7
Actuated g/C Ratio		0.56	1.00		0.56	1.00				0.37	0.37	0.37
Clearance Time (s)		5.0			5.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0			3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		1927	1534		1839	1615				608	608	505
v/s Ratio Prot		c0.42			0.32					0.20	0.20	c0.34
v/s Ratio Perm			0.56			0.27						
v/c Ratio		0.75	0.56		0.58	0.27				0.55	0.55	0.92
Uniform Delay, d1		17.9	0.0		15.4	0.0				26.3	26.3	31.6
Progression Factor		0.72	1.00		0.82	1.00				1.00	1.00	1.00
Incremental Delay, d2		0.3	0.1		1.2	0.4				1.1	1.1	21.3
Delay (s)		13.1	0.1		13.9	0.4				27.3	27.3	52.9
Level of Service		B	A		B	A				C	C	D
Approach Delay (s)		8.3			9.9			0.0			38.3	
Approach LOS		A			A			A			D	

Intersection Summary				
HCM Average Control Delay	15.9	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	65.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1210	850	0	1040	900	430	0	350	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	4.0		5.0	4.0	4.0		4.0			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.97		1.00			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00		1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00		1.00			
Frt		1.00	0.85		1.00	0.85	1.00		0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (prot)		3505	1551		3574	1566	3072		1583			
Flt Permitted		1.00	1.00		1.00	1.00	0.95		1.00			
Satd. Flow (perm)		3505	1551		3574	1566	3072		1583			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1247	876	0	1072	928	443	0	361	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	46	0	0	0
Lane Group Flow (vph)	0	1247	876	0	1072	928	443	0	315	0	0	0
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	3%	2%	0%	1%	1%	14%	0%	2%	0%	0%	0%
Turn Type		NA	Free		NA	Free	custom		custom			
Protected Phases		2			6		8					
Permitted Phases			Free			Free	8		8			
Actuated Green, G (s)		69.6	105.0		69.6	105.0	26.4		26.4			
Effective Green, g (s)		69.6	105.0		69.6	105.0	26.4		26.4			
Actuated g/C Ratio		0.66	1.00		0.66	1.00	0.25		0.25			
Clearance Time (s)		5.0			5.0		4.0		4.0			
Vehicle Extension (s)		3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)		2323	1551		2369	1566	772		398			
v/s Ratio Prot		0.36			0.30		0.14					
v/s Ratio Perm			0.56			c0.59			c0.20			
v/c Ratio		0.54	0.56		0.45	0.59	0.57		0.79			
Uniform Delay, d1		9.3	0.0		8.5	0.0	34.4		36.7			
Progression Factor		1.27	1.00		0.86	1.00	1.00		1.00			
Incremental Delay, d2		0.7	1.1		0.5	1.2	1.0		10.2			
Delay (s)		12.5	1.1		7.8	1.2	35.4		47.0			
Level of Service		B	A		A	A	D		D			
Approach Delay (s)		7.8			4.8			40.6			0.0	
Approach LOS		A			A			D			A	

Intersection Summary				
HCM Average Control Delay	11.9	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.64			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	4.0	
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	100	1000	460	60	1160	60	570	30	50	90	30	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.0	5.0	4.5	5.0		5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91		0.95	0.95	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1719	3406	1583	1770	4946		1665	1675	1524	1671	1527	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	1719	3406	1583	1770	4946		1665	1675	1524	1671	1527	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	103	1031	474	62	1196	62	588	31	52	93	31	216
RTOR Reduction (vph)	0	0	142	0	5	0	0	0	39	0	174	0
Lane Group Flow (vph)	103	1031	332	62	1253	0	312	307	13	93	73	0
Confl. Peds. (#/hr)			6	6					1	1		
Heavy Vehicles (%)	5%	6%	2%	2%	4%	6%	3%	4%	6%	8%	2%	9%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA	Prot	Split	NA	
Protected Phases	5	2	2 8	1	6		8	8	8	4	4	
Permitted Phases												
Actuated Green, G (s)	9.9	41.9	73.5	7.5	39.5		26.6	26.6	26.6	9.5	9.5	
Effective Green, g (s)	9.9	41.9	73.5	7.5	39.5		26.6	26.6	26.6	9.5	9.5	
Actuated g/C Ratio	0.09	0.40	0.70	0.07	0.38		0.25	0.25	0.25	0.09	0.09	
Clearance Time (s)	4.5	5.0		4.5	5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	1359	1108	126	1861		422	424	386	151	138	
v/s Ratio Prot	c0.06	c0.30	0.21	0.04	0.25		c0.19	0.18	0.01	c0.06	0.05	
v/s Ratio Perm												
v/c Ratio	0.64	0.76	0.30	0.49	0.67		0.74	0.72	0.03	0.62	0.53	
Uniform Delay, d1	45.8	27.2	6.0	46.9	27.4		36.0	35.8	29.5	46.0	45.6	
Progression Factor	1.24	0.76	0.02	1.26	0.67		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.7	3.4	0.1	2.2	1.4		6.7	6.0	0.0	7.3	3.9	
Delay (s)	63.6	24.1	0.3	61.4	19.8		42.7	41.9	29.6	53.3	49.5	
Level of Service	E	C	A	E	B		D	D	C	D	D	
Approach Delay (s)		19.6			21.8			41.3			50.5	
Approach LOS		B			C			D			D	

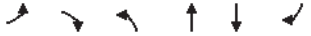
Intersection Summary				
HCM Average Control Delay	26.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	14.5	
Intersection Capacity Utilization	78.5%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	20	640	460	100	550	10	710	10	150	10	10	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.5	5.5	5.0	5.5		5.0	5.0			5.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95		0.97	1.00			1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt	1.00	0.99	0.85	1.00	1.00		1.00	0.86			0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (prot)	1703	1743	1421	1805	3529		3433	1633			1758	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00			0.98	
Satd. Flow (perm)	1703	1743	1421	1805	3529		3433	1633			1758	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	696	500	109	598	11	772	11	163	11	11	11
RTOR Reduction (vph)	0	2	132	0	1	0	0	126	0	0	11	0
Lane Group Flow (vph)	22	744	318	109	608	0	772	48	0	0	22	0
Confl. Peds. (#/hr)	2		2	2		2	5					5
Heavy Vehicles (%)	6%	2%	8%	0%	2%	0%	2%	0%	0%	0%	0%	0%
Turn Type	Prot	NA	pt+ov	Prot	NA		Split	NA		Split	NA	
Protected Phases	5	2	2 8	1	6		8	8		4	4	
Permitted Phases												
Actuated Green, G (s)	3.3	44.7	74.2	11.1	52.5		24.0	24.0			4.7	
Effective Green, g (s)	3.3	44.7	74.2	11.1	52.5		24.0	24.0			4.7	
Actuated g/C Ratio	0.03	0.43	0.71	0.11	0.50		0.23	0.23			0.04	
Clearance Time (s)	5.0	5.5		5.0	5.5		5.0	5.0			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	54	742	1004	191	1765		785	373			79	
v/s Ratio Prot	0.01	c0.43	0.22	c0.06	0.17		c0.22	0.03			c0.01	
v/s Ratio Perm												
v/c Ratio	0.41	1.00	0.32	0.57	0.34		0.98	0.13			0.28	
Uniform Delay, d1	49.9	30.1	5.8	44.7	15.9		40.3	32.2			48.5	
Progression Factor	1.28	0.97	12.10	1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	3.6	28.7	0.1	4.1	0.5		27.8	0.2			2.0	
Delay (s)	67.4	58.1	70.6	48.8	16.4		68.1	32.4			50.5	
Level of Service	E	E	E	D	B		E	C			D	
Approach Delay (s)		62.9			21.3			61.6			50.5	
Approach LOS		E			C			E			D	

Intersection Summary				
HCM Average Control Delay	52.1	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	89.5%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	540	260	90	440	220	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00
Frpb, ped/bikes	0.99		1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	1774		1719	1792	1805	1615
Flt Permitted	1.00		0.18	1.00	0.95	1.00
Satd. Flow (perm)	1774		317	1792	1805	1615
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	587	283	98	478	239	163
RTOR Reduction (vph)	24	0	0	0	0	125
Lane Group Flow (vph)	846	0	98	478	239	38
Confl. Peds. (#/hr)		1	1			
Heavy Vehicles (%)	2%	1%	5%	6%	0%	0%
Turn Type	NA		Perm	NA	NA	custom
Protected Phases	2			6		
Permitted Phases			6		4	4
Actuated Green, G (s)	31.6		31.6	31.6	12.2	12.2
Effective Green, g (s)	31.6		31.6	31.6	12.2	12.2
Actuated g/C Ratio	0.60		0.60	0.60	0.23	0.23
Clearance Time (s)	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1062		190	1072	417	373
v/s Ratio Prot	c0.48			0.27		
v/s Ratio Perm			0.31		c0.13	0.02
v/c Ratio	0.80		0.52	0.45	0.57	0.10
Uniform Delay, d1	8.1		6.2	5.8	18.0	16.0
Progression Factor	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2	6.2		9.7	1.3	1.9	0.1
Delay (s)	14.3		15.8	7.1	19.9	16.1
Level of Service	B		B	A	B	B
Approach Delay (s)	14.3			8.6	18.4	
Approach LOS	B			A	B	

Intersection Summary				
HCM Average Control Delay	13.4	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.73			
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	9.0	
Intersection Capacity Utilization	76.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	300	390	320	410	270	210
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	326	424	348	446	293	228
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1549	409	522			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1549	409	522			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	0	33	66			
cM capacity (veh/h)	83	634	1029			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	750	348	446	522
Volume Left	326	348	0	0
Volume Right	424	0	0	228
cSH	164	1029	1700	1700
Volume to Capacity	4.57	0.34	0.26	0.31
Queue Length 95th (ft)	Err	38	0	0
Control Delay (s)	Err	10.3	0.0	0.0
Lane LOS	F	B		
Approach Delay (s)	Err	4.5		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	3632.9			
Intersection Capacity Utilization	95.4%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	370	70	120	560	180	30	50	70	60	200	130
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	80	420	80	136	636	205	34	57	80	68	227	148
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	841			500			1892	1733	460	1739	1670	739
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	841			500			1892	1733	460	1739	1670	739
tC, single (s)	4.1			4.1			7.1	6.6	6.2	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.1	3.3	3.5	4.0	3.4
p0 queue free %	90			87			0	15	87	0	0	64
cM capacity (veh/h)	803			1075			0	67	605	14	75	411

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	580	977	170	443
Volume Left	80	136	34	68
Volume Right	80	205	80	148
cSH	803	1075	0	55
Volume to Capacity	0.10	0.13	Err	8.10
Queue Length 95th (ft)	8	11	Err	Err
Control Delay (s)	2.6	3.1	Err	Err
Lane LOS	A	A	F	F
Approach Delay (s)	2.6	3.1	Err	Err
Approach LOS			F	F

Intersection Summary				
Average Delay	Err			
Intersection Capacity Utilization	96.9%	ICU Level of Service	F	
Analysis Period (min)	15			

Intersection	
Intersection Delay (sec/veh)	36.3
Intersection LOS	E

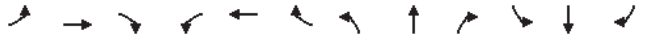
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adjusted Approach Flow (vph)	554	880	391
Demand Flow Rate (pc/h)	599	914	408
Vehicles Circulating (pc/h)	157	237	521
Vehicles Exiting (pc/h)	994	692	235
Follow-Up Headway (s)	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000
Approach Delay (sec/veh)	13.5	59.2	16.9
Approach LOS	B	F	C

Lane	Left	Left	Left
Designated moves	TR	LT	LR
Assumed Moves	TR	LT	LR
Right Turn Channelized			
Lane Utilization	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193
Entry Flow Rate (pc/h)	599	914	408
Capacity, Entry Lane (pc/h)	966	892	671
Entry HV Adjustment Factor	0.925	0.963	0.958
Flow Rate, Entry (vph)	554	880	391
Capacity, Entry (vph)	893	858	643
Volume to Capacity Ratio	0.620	1.025	0.608
Control Delay (sec/veh)	13.5	59.2	16.9
Level of Service	B	F	C
95th-Percentile Queue (veh)	4	20	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	210	360	10	10	380	190	10	10	10	250	10	520
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	1.00	0.85	1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1873		1805	1863	1447	1803	1732		1752	1584	
Flt Permitted	0.28	1.00		0.53	1.00	1.00	0.26	1.00		0.74	1.00	
Satd. Flow (perm)	503	1873		998	1863	1447	503	1732		1371	1584	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	391	11	11	413	207	11	11	11	272	11	565
RTOR Reduction (vph)	0	2	0	0	0	137	0	8	0	0	331	0
Lane Group Flow (vph)	228	400	0	11	413	70	11	14	0	272	245	0
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)			2			3						
Heavy Vehicles (%)	4%	1%	0%	0%	2%	9%	0%	3%	0%	3%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	26.6	21.6		17.8	16.8	16.8	15.1	15.1		15.1	15.1	
Effective Green, g (s)	26.6	21.6		17.8	16.8	16.8	15.1	15.1		15.1	15.1	
Actuated g/C Ratio	0.54	0.43		0.36	0.34	0.34	0.30	0.30		0.30	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	413	814		374	630	489	153	526		417	481	
v/s Ratio Prot	c0.06	0.21		0.00	c0.22			0.01			0.15	
v/s Ratio Perm	0.23			0.01		0.05	0.02			c0.20		
v/c Ratio	0.55	0.49		0.03	0.66	0.14	0.07	0.03		0.65	0.51	
Uniform Delay, d1	7.5	10.1		10.3	14.0	11.4	12.3	12.1		15.0	14.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.5		0.0	2.5	0.1	0.2	0.0		3.6	0.8	
Delay (s)	9.0	10.6		10.3	16.5	11.6	12.5	12.2		18.7	15.1	
Level of Service	A	B		B	B	B	B	B		B	B	
Approach Delay (s)		10.0			14.7			12.3			16.2	
Approach LOS		B			B			B			B	

Intersection Summary					
HCM Average Control Delay	13.9	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.65				
Actuated Cycle Length (s)	49.7	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	74.6%	ICU Level of Service		D	
Analysis Period (min)	15				

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	500	100	200	400	30	160	10	150	40	20	20
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	23	568	114	227	455	34	182	11	170	45	23	23

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	591	114	227	489	364	91
Volume Left (vph)	23	0	227	0	182	45
Volume Right (vph)	0	114	0	34	170	23
Hadj (s)	0.09	-0.53	0.57	0.02	-0.09	-0.05
Departure Headway (s)	7.7	7.1	8.1	7.5	7.4	8.8
Degree Utilization, x	1.27	0.22	0.51	1.02	0.75	0.22
Capacity (veh/h)	458	502	442	489	477	385
Control Delay (s)	158.9	10.9	18.0	73.9	29.3	14.3
Approach Delay (s)	135.1		56.1		29.3	14.3
Approach LOS	F		F		D	B

Intersection Summary				
Delay	78.6			
HCM Level of Service	F			
Intersection Capacity Utilization	83.5%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	30	660	600	140	90	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	34	750	682	159	102	34
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			1268			
pX, platoon unblocked	0.94				0.94	0.94
vC, conflicting volume	842				1581	762
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	800				1586	715
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	95				3	92
cM capacity (veh/h)	696				106	401

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	784	841	136
Volume Left	34	0	102
Volume Right	0	159	34
cSH	696	1700	130
Volume to Capacity	0.05	0.49	1.05
Queue Length 95th (ft)	4	0	190
Control Delay (s)	1.3	0.0	159.9
Lane LOS	A		F
Approach Delay (s)	1.3	0.0	159.9
Approach LOS			F

Intersection Summary			
Average Delay	13.0		
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	150	340	260	160	310	50	180	280	160	70	350	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.98		1.00	0.95		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1719	1759		1770	1821		1703	1782		1805	1748	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1719	1759		1770	1821		1703	1782		1805	1748	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	358	274	168	326	53	189	295	168	74	368	263
RTOR Reduction (vph)	0	43	0	0	9	0	0	29	0	0	39	0
Lane Group Flow (vph)	158	589	0	168	370	0	189	434	0	74	592	0
Confl. Peds. (#/hr)							2					2
Confl. Bikes (#/hr)						6			2			1
Heavy Vehicles (%)	5%	1%	1%	2%	2%	0%	6%	0%	0%	0%	0%	2%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	7.9	16.0		8.0	16.1		8.0	21.8		4.8	18.6	
Effective Green, g (s)	7.9	16.0		8.0	16.1		8.0	21.8		4.8	18.6	
Actuated g/C Ratio	0.12	0.24		0.12	0.24		0.12	0.33		0.07	0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	204	423		213	440		205	583		130	488	
v/s Ratio Prot	0.09	c0.34		c0.09	0.20		c0.11	c0.24		0.04	c0.34	
v/s Ratio Perm												
v/c Ratio	0.77	1.39		0.79	0.84		0.92	0.74		0.57	1.21	
Uniform Delay, d1	28.5	25.3		28.5	24.0		29.0	19.9		29.9	24.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.6	191.0		17.4	13.5		41.5	8.4		5.6	113.7	
Delay (s)	45.1	216.3		45.9	37.5		70.5	28.3		35.5	137.7	
Level of Service	D	F		D	D		E	C		D	F	
Approach Delay (s)		182.1			40.1			40.5			127.0	
Approach LOS		F			D			D			F	

Intersection Summary				
HCM Average Control Delay	104.6	HCM Level of Service	F	
HCM Volume to Capacity ratio	1.23			
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	20.0	
Intersection Capacity Utilization	99.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	150	350	40	40	340	110	50	60	180	140	160	60
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	170	398	45	45	386	125	57	68	205	159	182	68

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	170	443	557	57	273	159	250
Volume Left (vph)	170	0	45	57	0	159	0
Volume Right (vph)	0	45	125	0	205	0	68
Hadj (s)	0.50	-0.07	-0.08	0.50	-0.30	0.52	-0.12
Departure Headway (s)	9.0	8.4	8.5	9.6	8.8	9.5	8.9
Degree Utilization, x	0.42	1.03	1.31	0.15	0.67	0.42	0.62
Capacity (veh/h)	397	432	433	368	398	373	394
Control Delay (s)	17.2	80.4	180.2	13.1	26.6	18.0	23.9
Approach Delay (s)	62.8		180.2	24.3		21.6	
Approach LOS	F		F	C		C	

Intersection Summary					
Delay	81.6				
HCM Level of Service	F				
Intersection Capacity Utilization	83.0%	ICU Level of Service		E	
Analysis Period (min)	15				

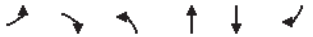
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	390	320	90	120	170	140	130	280	160	200	260	200
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	406	333	94	125	177	146	135	292	167	208	271	208

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1
Volume Total (vph)	833	448	135	458	688
Volume Left (vph)	406	125	135	0	208
Volume Right (vph)	94	146	0	167	208
Hadj (s)	0.03	-0.08	0.50	-0.24	-0.10
Departure Headway (s)	9.6	9.5	10.2	9.4	9.5
Degree Utilization, x	2.21	1.18	0.38	1.20	1.82
Capacity (veh/h)	384	385	351	387	383
Control Delay (s)	575.2	133.1	18.1	140.4	401.7
Approach Delay (s)	575.2	133.1	112.5		401.7
Approach LOS	F	F	F		F

Intersection Summary				
Delay	344.1			
HCM Level of Service	F			
Intersection Capacity Utilization	142.8%	ICU Level of Service	H	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	100	30	180	240	10	150	200	90	30	170	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.99		1.00	0.95		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1833		1687	1888		1805	1771		1805	1817	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1805	1833		1687	1888		1805	1771		1805	1817	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	105	32	189	253	11	158	211	95	32	179	74
RTOR Reduction (vph)	0	18	0	0	2	0	0	23	0	0	22	0
Lane Group Flow (vph)	11	119	0	189	262	0	158	283	0	32	231	0
Confl. Peds. (#/hr)									2	2		
Heavy Vehicles (%)	0%	0%	0%	7%	0%	0%	0%	0%	5%	0%	0%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Actuated Green, G (s)	1.1	9.4		9.8	18.1		5.7	16.9		2.5	13.7	
Effective Green, g (s)	1.1	9.4		9.8	18.1		5.7	16.9		2.5	13.7	
Actuated g/C Ratio	0.02	0.17		0.18	0.33		0.10	0.31		0.05	0.25	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	36	316		303	626		188	548		83	456	
v/s Ratio Prot	0.01	0.06		c0.11	c0.14		c0.09	c0.16		0.02	0.13	
v/s Ratio Perm												
v/c Ratio	0.31	0.38		0.62	0.42		0.84	0.52		0.39	0.51	
Uniform Delay, d1	26.4	20.0		20.7	14.2		24.0	15.5		25.3	17.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	0.8		4.0	0.5		27.2	0.8		3.0	0.9	
Delay (s)	31.1	20.8		24.7	14.6		51.2	16.3		28.3	18.4	
Level of Service	C	C		C	B		D	B		C	B	
Approach Delay (s)		21.5			18.8			28.2			19.5	
Approach LOS		C			B			C			B	

Intersection Summary					
HCM Average Control Delay	22.5	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.54				
Actuated Cycle Length (s)	54.6	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	51.9%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	20	160	190	160	550	80
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	23	182	216	182	625	91
Pedestrians	6			1	2	
Lane Width (ft)	12.0			12.0	12.0	
Walking Speed (ft/s)	4.0			4.0	4.0	
Percent Blockage	1			0	0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1292	677	722			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1292	677	722			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	83	59	73			
cM capacity (veh/h)	132	445	799			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	205	216	182	716
Volume Left	23	216	0	0
Volume Right	182	0	0	91
cSH	352	799	1700	1700
Volume to Capacity	0.58	0.27	0.11	0.42
Queue Length 95th (ft)	88	27	0	0
Control Delay (s)	28.5	11.2	0.0	0.0
Lane LOS	D	B		
Approach Delay (s)	28.5	6.1		0.0
Approach LOS	D			

Intersection Summary				
Average Delay		6.3		
Intersection Capacity Utilization		65.6%	ICU Level of Service	C
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	150	10	70	350	150	40	150	130	200	250	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.95		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	3422		1612	3384		1805	1684		1752	1863	1599
Flt Permitted	0.25	1.00		0.65	1.00		0.60	1.00		0.31	1.00	1.00
Satd. Flow (perm)	471	3422		1094	3384		1134	1684		569	1863	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	189	158	11	74	368	158	42	158	137	211	263	232
RTOR Reduction (vph)	0	7	0	0	75	0	0	49	0	0	0	125
Lane Group Flow (vph)	189	162	0	74	451	0	42	246	0	211	263	107
Confl. Peds. (#/hr)	1					1			1	1		
Heavy Vehicles (%)	1%	2%	40%	12%	0%	4%	0%	2%	7%	3%	2%	1%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases	4			8			2			6		6
Actuated Green, G (s)	26.2	18.3		18.8	14.6		18.0	15.4		27.2	20.6	28.5
Effective Green, g (s)	26.2	18.3		18.8	14.6		18.0	15.4		27.2	20.6	28.5
Actuated g/C Ratio	0.42	0.30		0.30	0.24		0.29	0.25		0.44	0.33	0.46
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	369	1015		369	801		359	420		400	622	842
v/s Ratio Prot	c0.07	0.05		0.01	0.13		0.00	0.15		c0.07	0.14	0.02
v/s Ratio Perm	c0.15			0.05			0.03			c0.17		0.05
v/c Ratio	0.51	0.16		0.20	0.56		0.12	0.59		0.53	0.42	0.13
Uniform Delay, d1	12.1	16.0		15.6	20.7		15.8	20.3		11.8	15.9	9.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.2	0.1		0.3	0.9		0.1	2.1		1.3	0.5	0.1
Delay (s)	13.3	16.1		15.9	21.7		16.0	22.4		13.1	16.4	9.6
Level of Service	B	B		B	C		B	C		B	B	A
Approach Delay (s)		14.6			20.9			21.6			13.2	
Approach LOS		B			C			C			B	

Intersection Summary					
HCM Average Control Delay		17.2	HCM Level of Service	B	
HCM Volume to Capacity ratio		0.54			
Actuated Cycle Length (s)		61.7	Sum of lost time (s)	12.0	
Intersection Capacity Utilization		64.8%	ICU Level of Service	C	
Analysis Period (min)		15			
c Critical Lane Group					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	190	100	120	70	140	180	110	20	90	60	20	150
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	216	114	136	80	159	205	125	23	102	68	23	170
Pedestrians		3			1			1			2	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		730										
pX, platoon unblocked												
vC, conflicting volume	366			251			1038	1139	127	1026	1105	187
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	366			251			1038	1139	127	1026	1105	187
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			94			0	85	89	45	86	79
cM capacity (veh/h)	1180			1325			109	155	904	124	163	826

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	NB 2	SB 1
Volume Total	216	76	174	80	106	258	125	125	261
Volume Left	216	0	0	80	0	0	125	0	68
Volume Right	0	0	136	0	0	205	0	102	170
cSH	1180	1700	1700	1325	1700	1700	109	482	292
Volume to Capacity	0.18	0.04	0.10	0.06	0.06	0.15	1.14	0.26	0.90
Queue Length 95th (ft)	17	0	0	5	0	0	197	26	204
Control Delay (s)	8.7	0.0	0.0	7.9	0.0	0.0	204.4	15.1	68.1
Lane LOS	A			A			F	C	F
Approach Delay (s)	4.0			1.4			109.7		68.1
Approach LOS							F		F

Intersection Summary				
Average Delay	33.6			
Intersection Capacity Utilization	51.0%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	60	510	70	30	690	210	150	70	10	260	60	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97		1.00	0.97		1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (prot)	1805	1826		1805	1881	1558		1837	1566		1811	1615
Flt Permitted	0.13	1.00		0.14	1.00	1.00		0.97	1.00		0.96	1.00
Satd. Flow (perm)	244	1826		259	1881	1558		1837	1566		1811	1615
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	63	537	74	32	726	221	158	74	11	274	63	105
RTOR Reduction (vph)	0	5	0	0	0	66	0	0	6	0	0	62
Lane Group Flow (vph)	63	606	0	32	726	155	0	232	5	0	337	43
Confl. Peds. (#/hr)	2		4	4		2			5	5		
Confl. Bikes (#/hr)			2			1						
Heavy Vehicles (%)	0%	2%	0%	0%	1%	1%	0%	0%	0%	1%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Split	NA	Perm	Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2			6		6			8			4
Actuated Green, G (s)	36.1	31.1		32.7	29.4	29.4		14.1	14.1		17.6	17.6
Effective Green, g (s)	36.1	31.1		32.7	29.4	29.4		14.1	14.1		17.6	17.6
Actuated g/C Ratio	0.44	0.38		0.40	0.36	0.36		0.17	0.17		0.21	0.21
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0		2.0	2.0		2.0	2.0
Lane Grp Cap (vph)	202	692		165	674	558		315	269		388	346
v/s Ratio Prot	c0.02	0.33		0.01	c0.39			c0.13			c0.19	
v/s Ratio Perm	0.12			0.07		0.10			0.00			0.03
v/c Ratio	0.31	0.88		0.19	1.08	0.28		0.74	0.02		0.87	0.12
Uniform Delay, d1	18.0	23.7		17.8	26.3	18.8		32.2	28.3		31.1	26.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	14.5		0.2	57.3	1.2		7.5	0.0		17.7	0.1
Delay (s)	18.3	38.3		18.0	83.7	20.0		39.7	28.3		48.8	26.1
Level of Service	B	D		B	F	C		D	C		D	C
Approach Delay (s)		36.4			67.1			39.2			43.4	
Approach LOS		D			E			D			D	

Intersection Summary						
HCM Average Control Delay	50.9	HCM Level of Service		D		
HCM Volume to Capacity ratio	0.95					
Actuated Cycle Length (s)	82.1	Sum of lost time (s)		20.0		
Intersection Capacity Utilization	73.9%	ICU Level of Service		D		
Analysis Period (min)	15					

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	50	760	840	250	200	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1805	1881	1881	1192	1641	1599
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1805	1881	1881	1192	1641	1599
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	53	800	884	263	211	168
RTOR Reduction (vph)	0	0	0	101	0	137
Lane Group Flow (vph)	53	800	884	162	211	31
Confl. Peds. (#/hr)	2			2		
Confl. Bikes (#/hr)				3		
Heavy Vehicles (%)	0%	1%	1%	32%	10%	1%
Turn Type	Prot	NA	NA	Perm	NA	Perm
Protected Phases	5	2	6		4	
Permitted Phases				6		4
Actuated Green, G (s)	4.6	59.9	51.3	51.3	15.6	15.6
Effective Green, g (s)	4.6	59.9	51.3	51.3	15.6	15.6
Actuated g/C Ratio	0.06	0.72	0.61	0.61	0.19	0.19
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	1349	1156	732	307	299
v/s Ratio Prot	0.03	c0.43	c0.47		c0.13	
v/s Ratio Perm				0.14		0.02
v/c Ratio	0.54	0.59	0.76	0.22	0.69	0.10
Uniform Delay, d1	38.4	5.8	11.7	7.2	31.7	28.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.5	1.9	4.8	0.7	6.3	0.2
Delay (s)	43.9	7.7	16.5	7.9	37.9	28.3
Level of Service	D	A	B	A	D	C
Approach Delay (s)		10.0	14.6		33.7	
Approach LOS		A	B		C	

Intersection Summary				
HCM Average Control Delay	16.0	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	62.0%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	1050	50	420	1000	280	80	150	390	650	200	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.91		0.97	0.95	1.00	1.00	1.00	1.00	0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	4973		3467	3374	1385	1752	1900	1568	3400	1775	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	4973		3467	3374	1385	1752	1900	1568	3400	1775	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	72	1082	52	433	1031	289	82	155	402	670	206	93
RTOR Reduction (vph)	0	5	0	0	0	139	0	0	13	0	15	0
Lane Group Flow (vph)	72	1129	0	433	1031	150	82	155	389	670	284	0
Confl. Peds. (#/hr)	4		3	3		4	1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	14%	1%	7%	13%	3%	0%	3%	3%	0%	5%
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	1	6		5	2		4	4	5	8	8	
Permitted Phases		6				2			4			
Actuated Green, G (s)	7.9	38.1		16.8	47.0	47.0	13.4	13.4	30.2	24.7	24.7	
Effective Green, g (s)	7.9	39.1		16.8	48.0	48.0	13.4	13.4	30.2	24.7	24.7	
Actuated g/C Ratio	0.07	0.36		0.15	0.44	0.44	0.12	0.12	0.27	0.22	0.22	
Clearance Time (s)	4.0	5.0		4.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	2.5	4.3		2.5	0.5	0.5	2.5	2.5	2.5	2.5	2.5	
Lane Grp Cap (vph)	125	1768		530	1472	604	213	231	488	763	399	
v/s Ratio Prot	0.04	0.23		c0.12	c0.31		0.05	0.08	c0.12	c0.20	0.16	
v/s Ratio Perm						0.11			0.13			
v/c Ratio	0.58	0.64		0.82	0.70	0.25	0.38	0.67	0.80	0.88	0.71	
Uniform Delay, d1	49.4	29.6		45.1	25.2	19.6	44.5	46.2	37.1	41.2	39.4	
Progression Factor	1.00	1.00		1.03	0.76	1.05	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.2	1.8		7.6	2.3	0.8	0.8	6.8	8.5	11.1	5.5	
Delay (s)	54.6	31.3		54.1	21.4	21.4	45.3	53.0	45.6	52.3	44.9	
Level of Service	D	C		D	C	C	D	D	D	D	D	
Approach Delay (s)		32.7			29.5			47.3			50.0	
Approach LOS		C			C			D			D	

Intersection Summary				
HCM Average Control Delay	37.2	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.77			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	74.1%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	1120	970	750	1050	0	0	0	0	450	0	650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Lane Util. Factor		0.91	1.00	0.97	0.95					0.95	0.95	0.88
Frpb, ped/bikes		1.00	0.98	1.00	1.00					1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00					1.00	1.00	1.00
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		4988	1549	3367	3406					1665	1665	2608
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		4988	1549	3367	3406					1665	1665	2608
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1155	1000	773	1082	0	0	0	0	464	0	670
RTOR Reduction (vph)	0	0	331	0	0	0	0	0	0	0	0	79
Lane Group Flow (vph)	0	1155	669	773	1082	0	0	0	0	232	232	591
Confl. Peds. (#/hr)	3		4	4		3						
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	0%	4%	2%	4%	6%	0%	0%	0%	0%	3%	0%	9%
Turn Type		NA	Perm	Prot	NA					Split	NA	custom
Protected Phases		2		1	6					4	4	5
Permitted Phases			2		6							4
Actuated Green, G (s)		47.2	47.2	30.1	67.2					20.7	20.7	30.8
Effective Green, g (s)		47.2	47.2	30.1	67.2					20.7	20.7	30.8
Actuated g/C Ratio		0.43	0.43	0.27	0.61					0.19	0.19	0.28
Clearance Time (s)		4.0	4.0	4.0	4.0					4.0	4.0	4.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2140	665	921	2081					313	313	825
v/s Ratio Prot		0.23		c0.23	0.32					0.14	0.14	c0.07
v/s Ratio Perm			c0.43									0.16
v/c Ratio		0.54	1.01	0.84	0.52					0.74	0.74	0.72
Uniform Delay, d1		23.3	31.4	37.7	12.2					42.1	42.1	35.7
Progression Factor		0.82	0.65	0.56	1.31					1.00	1.00	1.00
Incremental Delay, d2		0.7	30.1	5.8	0.8					9.1	9.1	3.0
Delay (s)		19.9	50.5	26.9	16.7					51.2	51.2	38.6
Level of Service		B	D	C	B					D	D	D
Approach Delay (s)		34.1			21.0			0.0			43.8	
Approach LOS		C			C			A			D	

Intersection Summary				
HCM Average Control Delay	31.5	HCM Level of Service		C
HCM Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	104.4%	ICU Level of Service		G
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	520	1050	0	0	1350	450	450	0	840	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Lane Util. Factor	0.97	0.95			0.91	1.00	0.95	0.95	0.88			
Frpb, ped/bikes	1.00	1.00			1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes	1.00	1.00			1.00	1.00	1.00	1.00	1.00			
Frt	1.00	1.00			1.00	0.85	1.00	1.00	0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (prot)	3335	3505			4988	1536	1559	1559	2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95	0.95	1.00			
Satd. Flow (perm)	3335	3505			4988	1536	1559	1559	2733			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	536	1082	0	0	1392	464	464	0	866	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	232	0	0	52	0	0	0
Lane Group Flow (vph)	536	1082	0	0	1392	232	232	232	814	0	0	0
Confl. Peds. (#/hr)	4		4	4		4						
Confl. Bikes (#/hr)			1			3						
Heavy Vehicles (%)	5%	3%	0%	0%	4%	3%	10%	0%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm	Split	NA	custom			
Protected Phases	5	2			6		8	8	1			
Permitted Phases		2				6			8			
Actuated Green, G (s)	22.4	58.3			55.0	55.0	20.6	20.6	39.7			
Effective Green, g (s)	22.4	58.3			55.0	55.0	20.6	20.6	39.7			
Actuated g/C Ratio	0.20	0.53			0.50	0.50	0.19	0.19	0.36			
Clearance Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
Vehicle Extension (s)	2.3	4.9			4.9	4.9	2.3	2.3	3.0			
Lane Grp Cap (vph)	679	1858			2494	768	292	292	1086			
v/s Ratio Prot	c0.16	c0.31			0.28		0.15	0.15	c0.13			
v/s Ratio Perm						0.15			0.17			
v/c Ratio	0.79	0.58			0.56	0.30	0.79	0.79	0.75			
Uniform Delay, d1	41.6	17.6			19.1	16.2	42.7	42.7	30.8			
Progression Factor	0.44	0.69			0.84	1.50	1.00	1.00	1.00			
Incremental Delay, d2	5.0	1.2			0.3	0.3	13.2	13.2	2.9			
Delay (s)	23.4	13.4			16.4	24.6	55.9	55.9	33.7			
Level of Service	C	B			B	C	E	E	C			
Approach Delay (s)		16.7			18.5			41.4			0.0	
Approach LOS		B			B			D			A	

Intersection Summary				
HCM Average Control Delay	24.2	HCM Level of Service		C
HCM Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	104.4%	ICU Level of Service		G
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	550	1190	150	60	750	50	250	110	90	140	100	800
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		1.00	0.95		0.91	0.91		1.00	0.95	0.95
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	0.99	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.95		1.00	0.88	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)	2540	3426		1805	2650		1579	3137		1736	1519	1467
Flt Permitted	0.95	1.00		0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (perm)	2540	3426		1805	2650		1579	3137		1736	1519	1467
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	567	1227	155	62	773	52	258	113	93	144	103	825
RTOR Reduction (vph)	0	8	0	0	4	0	0	40	0	0	118	371
Lane Group Flow (vph)	567	1374	0	62	821	0	157	267	0	144	356	83
Confl. Peds. (#/hr)	4		4	4		4	2		3	3		2
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	3%	3%	5%	0%	4%	0%	4%	3%	2%	4%	6%	3%
Turn Type	Prot	NA		Prot	NA		Split	NA		Split	NA	Perm
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases												4
Actuated Green, G (s)	28.8	54.6		5.6	31.4		13.3	13.3		19.5	19.5	19.5
Effective Green, g (s)	28.8	55.1		5.6	31.9		13.3	13.3		20.0	20.0	20.0
Actuated g/C Ratio	0.26	0.50		0.05	0.29		0.12	0.12		0.18	0.18	0.18
Clearance Time (s)	4.0	4.5		4.0	4.5		4.0	4.0		4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.3		2.5	4.3		2.5	2.5		2.5	2.5	2.5
Lane Grp Cap (vph)	665	1716		92	769		191	379		316	276	267
v/s Ratio Prot	0.22	c0.40		0.03	c0.31		c0.10	0.08		0.08	c0.23	
v/s Ratio Perm												0.06
v/c Ratio	0.85	0.80		0.67	1.07		0.82	0.70		0.46	1.29	0.31
Uniform Delay, d1	38.6	22.9		51.3	39.0		47.2	46.5		40.1	45.0	39.0
Progression Factor	0.79	0.65		0.87	0.73		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.9	3.1		15.9	51.6		23.4	5.4		0.8	155.1	0.5
Delay (s)	38.3	17.9		60.4	80.1		70.6	51.9		40.9	200.1	39.5
Level of Service	D	B		E	F		E	D		D	F	D
Approach Delay (s)		23.8			78.7			58.2			110.7	
Approach LOS		C			E			E			F	

Intersection Summary				
HCM Average Control Delay	59.9	HCM Level of Service	E	
HCM Volume to Capacity ratio	0.98			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	86.0%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	180	1040	60	50	600	90	60	30	30	120	50	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.98			1.00	0.98
Flpb, ped/bikes	0.99	1.00		1.00	1.00		0.99	1.00			0.98	1.00
Frt	1.00	0.99		1.00	0.98		1.00	0.93			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			0.97	1.00
Satd. Flow (prot)	1755	3541		1805	3489		1795	1722			1801	1567
Flt Permitted	0.37	1.00		0.22	1.00		0.45	1.00			0.75	1.00
Satd. Flow (perm)	677	3541		422	3489		850	1722			1401	1567
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	186	1072	62	52	619	93	62	31	31	124	52	196
RTOR Reduction (vph)	0	2	0	0	6	0	0	26	0	0	0	146
Lane Group Flow (vph)	186	1132	0	52	706	0	62	36	0	0	176	50
Confl. Peds. (#/hr)	7					7	4		14	14		4
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	1%	3%	0%	1%	0%	0%	0%	0%	0%	0%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)	82.8	82.8		82.8	82.8		19.2	19.2			19.2	19.2
Effective Green, g (s)	82.8	82.8		82.8	82.8		19.2	19.2			19.2	19.2
Actuated g/C Ratio	0.75	0.75		0.75	0.75		0.17	0.17			0.17	0.17
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)	510	2665		318	2626		148	301			245	274
v/s Ratio Prot		c0.32			0.20			0.02				
v/s Ratio Perm	0.27			0.12			0.07				c0.13	0.03
v/c Ratio	0.36	0.42		0.16	0.27		0.42	0.12			0.72	0.18
Uniform Delay, d1	4.6	4.9		3.8	4.2		40.4	38.3			42.8	38.7
Progression Factor	1.77	1.77		2.01	2.15		1.00	1.00			1.00	1.00
Incremental Delay, d2	1.3	0.3		1.1	0.2		1.9	0.2			9.6	0.3
Delay (s)	9.5	9.1		8.8	9.3		42.3	38.5			52.5	39.0
Level of Service	A	A		A	A		D	D			D	D
Approach Delay (s)		9.1			9.3			40.4			45.4	
Approach LOS		A			A			D			D	

Intersection Summary				
HCM Average Control Delay	15.9	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	200	900	80	50	540	70	40	50	60	120	70	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00		1.00	0.97		1.00	1.00	0.96
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1770	1881	1507	1805	3504		1752	1697		1805	1900	1513
Flt Permitted	0.34	1.00	1.00	0.10	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	630	1881	1507	197	3504		1752	1697		1805	1900	1513
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	206	928	82	52	557	72	41	52	62	124	72	175
RTOR Reduction (vph)	0	0	22	0	6	0	0	43	0	0	0	145
Lane Group Flow (vph)	206	928	60	52	623	0	41	71	0	124	72	30
Confl. Peds. (#/hr)	5		7	7		5	8		4	4		8
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	2%	1%	0%	0%	1%	0%	3%	0%	0%	0%	0%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6								4
Actuated Green, G (s)	73.6	64.0	64.0	64.7	59.1		5.6	11.6		12.8	18.8	18.8
Effective Green, g (s)	73.6	64.0	64.0	64.7	59.1		5.6	11.6		12.8	18.8	18.8
Actuated g/C Ratio	0.67	0.58	0.58	0.59	0.54		0.05	0.11		0.12	0.17	0.17
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	530	1094	877	198	1883		89	179		210	325	259
v/s Ratio Prot	c0.04	c0.49		0.01	0.18		0.02	c0.04		c0.07	0.04	
v/s Ratio Perm	0.22		0.04	0.14								0.02
v/c Ratio	0.39	0.85	0.07	0.26	0.33		0.46	0.40		0.59	0.22	0.12
Uniform Delay, d1	7.6	19.0	10.0	17.6	14.3		50.7	45.9		46.1	39.3	38.6
Progression Factor	0.99	0.93	1.11	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.4	7.7	0.1	0.7	0.5		3.7	1.4		4.4	0.3	0.2
Delay (s)	8.0	25.3	11.3	18.3	14.8		54.5	47.4		50.5	39.6	38.8
Level of Service	A	C	B	B	B		D	D		D	D	D
Approach Delay (s)		21.4			15.1			49.3			42.9	
Approach LOS		C			B			D			D	

Intersection Summary				
HCM Average Control Delay	24.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.74			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	74.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	90	10	110	20	0	0	0	0	650	0	110
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	95	11	116	21	0	0	0	0	684	0	116
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	21			105			468	353	100	353	358	21
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	21			105			468	353	100	353	358	21
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			92			100	100	100	0	100	89
cM capacity (veh/h)	1608			1499			426	531	961	568	527	1051

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	105	116	21	800
Volume Left	0	116	0	684
Volume Right	11	0	0	116
cSH	1700	1499	1700	609
Volume to Capacity	0.06	0.08	0.01	1.31
Queue Length 95th (ft)	0	6	0	825
Control Delay (s)	0.0	7.6	0.0	173.6
Lane LOS		A		F
Approach Delay (s)	0.0	6.4		173.6
Approach LOS				F

Intersection Summary				
Average Delay	134.1			
Intersection Capacity Utilization	94.8%	ICU Level of Service	F	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	670	0	0	110	330	20	0	120	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	74	705	0	0	116	347	21	0	126	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463			705			1142	1316	705	1268	1142	289
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			705			1142	1316	705	1268	1142	289
tC, single (s)	4.1			4.1			7.2	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			87	100	71	100	100	100
cM capacity (veh/h)	1088			902			161	148	435	99	188	754

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	74	705	463	147
Volume Left	74	0	0	21
Volume Right	0	0	347	126
cSH	1088	1700	1700	350
Volume to Capacity	0.07	0.41	0.27	0.42
Queue Length 95th (ft)	5	0	0	51
Control Delay (s)	8.6	0.0	0.0	22.6
Lane LOS	A			C
Approach Delay (s)	0.8		0.0	22.6
Approach LOS				C

Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		84.2%	ICU Level of Service	E
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	360	430	90	220	220	70
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	379	453	95	232	232	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			379		1026	605
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			379		1026	605
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			92		2	85
cM capacity (veh/h)			1147		235	496

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	832	95	232	305
Volume Left	0	95	0	232
Volume Right	453	0	0	74
cSH	1700	1147	1700	270
Volume to Capacity	0.49	0.08	0.14	1.13
Queue Length 95th (ft)	0	7	0	329
Control Delay (s)	0.0	8.4	0.0	135.9
Lane LOS		A		F
Approach Delay (s)	0.0	2.4		135.9
Approach LOS				F

Intersection Summary				
Average Delay		28.9		
Intersection Capacity Utilization		76.7%	ICU Level of Service	D
Analysis Period (min)		15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	220	210	150	0	10	160
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	232	221	158	0	11	168
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158				842	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158				842	158
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	84				96	81
cM capacity (veh/h)	1416				282	877

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	232	221	158	11	168
Volume Left	232	0	0	11	0
Volume Right	0	0	0	0	168
cSH	1416	1700	1700	282	877
Volume to Capacity	0.16	0.13	0.09	0.04	0.19
Queue Length 95th (ft)	15	0	0	3	18
Control Delay (s)	8.0	0.0	0.0	18.3	10.1
Lane LOS	A			C	B
Approach Delay (s)	4.1		0.0	10.6	
Approach LOS				B	

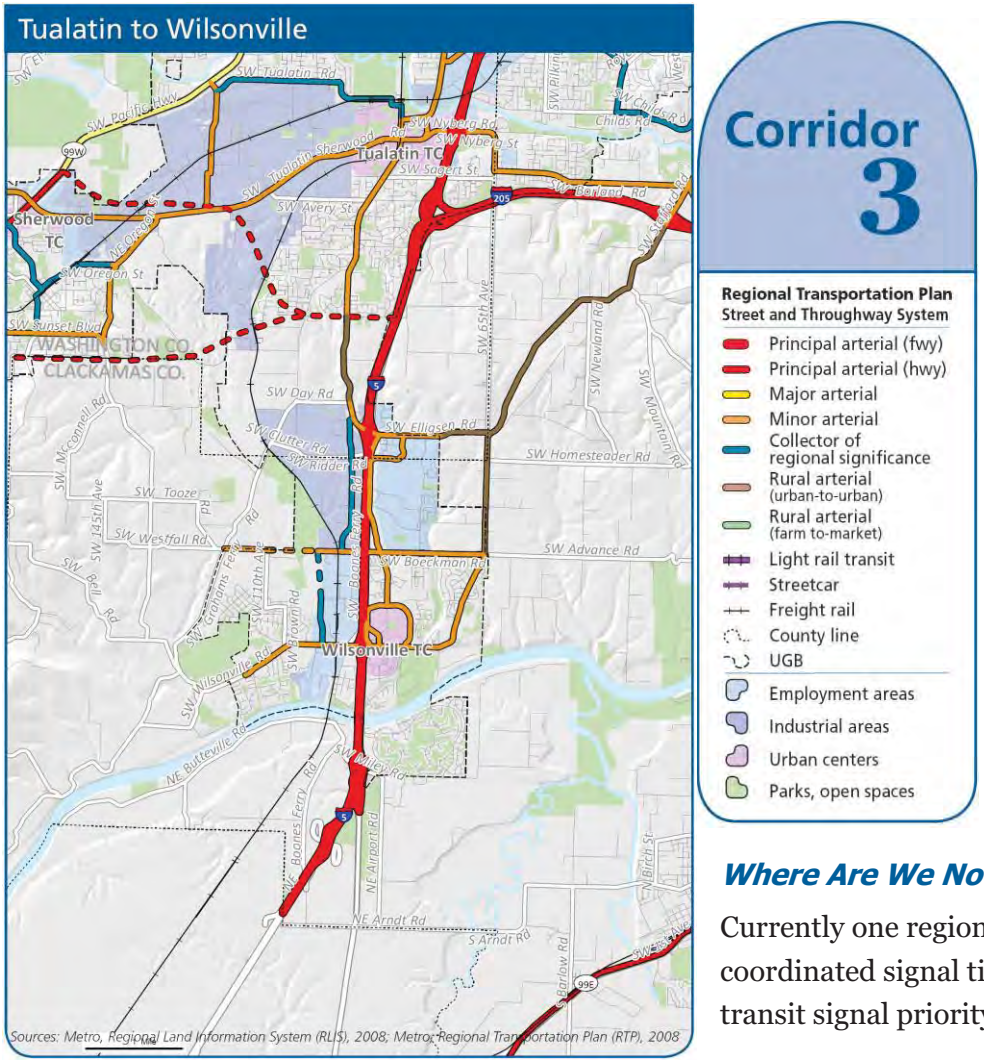
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay (sec/veh)	28.8
Intersection LOS	D

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	641	978	217	33
Demand Flow Rate (pc/h)	666	1016	225	33
Vehicles Circulating (pc/h)	157	78	519	1061
Vehicles Exiting (pc/h)	937	666	304	33
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	15.5	42.2	10.0	10.6
Approach LOS	C	E	B	B

Lane	Left	Left	Left	Left
Designated moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193	5.193
Entry Flow Rate (pc/h)	666	1016	225	33
Capacity, Entry Lane (pc/h)	966	1045	672	391
Entry HV Adjustment Factor	0.962	0.962	0.963	0.987
Flow Rate, Entry (vph)	641	978	217	33
Capacity, Entry (vph)	929	1006	647	386
Volume to Capacity Ratio	0.690	0.972	0.335	0.084
Control Delay (sec/veh)	15.5	42.2	10.0	10.6
Level of Service	C	E	B	B
95th-Percentile Queue (veh)	6	17	1	0

Portland Regional TSMO Plan: Metro Mobility Corridor #3 (Tualatin to Wilsonville)



Corridor Summary

The Tualatin to Wilsonville corridor supports mostly north-south movement with I-5 as the major through facility. Other transportation elements in this corridor include Westside Express Service (WES) commuter rail, several parallel facilities that support not only auto and truck travel, but also bus service and bicycle facilities. I-5 is a principal arterial freeway that supports interstate and interregional travel. It also provides access to the Sherwood, Tualatin, and Wilsonville town centers, employment areas and industrial areas. The key parallel arterials include **SW Boones Ferry Rd, SW Grahams Ferry Rd, SW Stafford Rd,** and **SW 65th Ave**. East-west mobility in this corridor is limited with few overcrossings of I-5. The land use is mainly rural, however, in the urbanized areas there is significant employment and industry. The roadway network is a mix of farm-to-market roads and discontinuous residential streets.

Where Are We Now?

Currently one regional facility in this corridor, SW Stafford Rd, has coordinated signal timing updated within the last five years. There is no transit signal priority installed and no communications infrastructure exists

along the regional arterials. The segment of I-5 through this corridor is generally equipped with cameras, ramp meters, detection, and communication equipment.

A limited amount of TDM services are available. The City of Wilsonville runs the Wilsonville SMART Options program to encourage citizens to take transit, walk more, and they are hiring a bike/pedestrian coordinator to improve and expand their walking and biking programs.

Project Name	Description	Facility	Goal/ Objective	Time-frame	Cost	
					Capital	Annual O&M
Regional Multimodal Traffic Management						
Arterial Corridor Management (ACM)	Improve arterial corridor operations by expanding traveler information and upgrading traffic signal equipment and timings. Install upgraded traffic signal controllers, establish communications to the central traffic signal system, provide arterial detection (including bicycle detection where appropriate) and routinely update signal timings. Provide real-time and forecasted traveler information on arterial roadways including current roadway conditions, congestion information, travel times, incident information, construction work zones, current weather conditions and other events that may affect traffic conditions. Upgrade and/or add traffic signage.Also includes on-going maintenance and parts replacement.	SW Boones Ferry Rd	Reliability & Traveler Information	6-10 yrs	$2,400,000	$50,000
		SW 65th Ave		11+ yrs	$1,000,000	$20,000
		Wilsonville Rd (west of I-5)		11+ yrs	$700,000	$14,000
		SW Stafford Rd		11+ yrs	$1,300,000	$30,000

Project Name	Description	Facility	Goal/ Objective	Time-frame	Cost	
					Capital	Annual O&M
Freeway Management	Expand freeway vehicle detection to provide comprehensive freeway traveler information including travel speed, travel times, volumes, forecasted information, incident conditions, and weather conditions.	I-5	Reliability, Traveler Information, & Safety	1-5 yrs	$500,000	$10,000
Traveler Information						
	No projects in this corridor					
Transportation Demand Management						
Individualized Marketing	Implement and/or support intensive outreach to targeted neighborhoods that encourages use of travel options through delivery of local travel options information and services to interested residents.	Wilsonville (RTO Subcommittee funded this project)	Quality of life	1-5 years (starts 2010)	$0	$278,100
Individualized Marketing	(same as above)	Residents served by frequent transit service, other travel options and near commercial zoning.	Quality of life	6-10 years	$0	$500,000
Rideshare incentives	Leverage regional rideshare services to encourage greater levels of carpooling and vanpooling by providing financial incentives to commuters.	I-5	Quality of life	1-5 years	$0	$25,000
Rideshare incentives	(same as above)	I-5	Quality of life	6-10 years	$0	$25,000

Project Name	Description	Facility	Goal/ Objective	Time-frame	Cost	
					Capital	Annual O&M
Rideshare Park & Ride	Negotiate shared parking agreements with public and private parking lots, provide signage and, if needed, coordinate registration.	I-5	Quality of life	1-5 years	$0	$4,800
Rideshare Park & Ride	(same as above)	I-5	Quality of life	6-10 years	$0	$4,800
Construction mitigation campaign	Apply additional investment in TDM solutions to mitigate impacts to travelers of all modes during construction projects.	Areas impacted by I-5 to I-205 additional merge lane construction.	Quality of life	1-5 years	$0	$100,000
Employee incentives	Targeted investment to add to employer services to incentivize non-SOV commutes.	to be determined	Quality of life	1-5 years	$0	$50,000
Employee incentives	(same as above)	to be determined	Quality of life	6-10 years	$0	$50,000
Wilsonville SMART Options	The City of Wilsonville SMART Options Outreach Program works with Wilsonville area employers and residents to promote transit and other transportation options. The primary goals of the program are to increase awareness of transportation options available in Wilsonville and the region, reduce drive alone trips and increase communication between the City of Wilsonville, local businesses of all sizes, community organizations and regional partners.	Wilsonville		through 10 years	$0	$62,000
Car-share operations	Support 3 or more car-sharing vehicles in developing centers.	Wilsonville Town Center	Quality of life	1-5 years	$0	$200,000

2035 Regional Transportation Plan (RTP) Project List: Wilsonville

2035 RTP Project List -- City of Wilsonville

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/ Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Local Functional Classification	Project Purpose	Description	Estimated Cost ($2007)	Estimated Cost (YOE$)	Time Period	Federal FC Project	2040 Land Use	Mobility Corridor or Community Building?	HCT Priority as Adopted by JPACT and Metro Council	Primary Mode	Secondary Mode(s)	Project located in EJ Community?	Project located in Goal 5 Resources?
10092	Wilsonville		Tonquin Trail	Washington/ Clackamas County line	Boones Ferry Landing	Other	Regional trail would connect Tualatin/Sherwood with west Wilsonville, Coffee Lake Natural Area, Villebois, and the Grahams Oak Natural Area. Connections to the trail will be provided at Wilsonville road, through Villebois, Boeckman Road, Cahalin Road,	Shared use path with some on-street portions.	$ 3,000,000	$ 4,440,733	2008-2017	x	Employment area	MC		Regional Trail	Bike		
10130	Wilsonville	Wilsonville	Kinsman Rd. Extension from Barber St. to Boeckman Rd.	Barber St.	Boeckman Rd.	Minor Arterial	Provide freight access and capacity from Barber Street to Boeckman Road. A vital alternative to 110th which is being vacated. Serves as a parallel arterial to I-5.	Extend 3 lanes with sidewalks and bike lanes.	$ 10,365,000	$ 15,342,732	2008-2017	x	Employment area	CB		Freight	Roads/ bridges		
10131	Wilsonville	Wilsonville	Tooze Rd. Improvements	110th Ave.	Grahams Ferry Rd.	Minor Arterial	Continuation of the Boeckman Road Extension Project along the Tooze Road right-of-way to Grahams Ferry Road which provides a major east-west suburban to suburban connector.	Widen Tooze Rd to 3 lanes, add bike/pedestrian connections to regional trail system.	$ 3,800,000	$ 5,624,928	2008-2017	x	Employment area	MC		Roads/ bridges	Regional Trail	Yes	Yes
10132	Wilsonville	Wilsonville	Boeckman Rd/ I-5 Overcrossing Improvements	Boberg Rd.	Parkway Ave.	Minor Arterial	Boeckman Road is designated as an arterial street in the City's TSP. It provides an east-west connection in Wilsonville between Tooze Road/Graham's Ferry Road on the west and Stafford Road on the east, serving as an important non-interstate alternate.	Widen Boeckman Road bridge over I-5 to 3 lanes. Add bike/pedestrian connections to regional trail system.	$ 13,600,000	$ 20,131,322	2008-2017	x	Employment area, Industrial area	CB		Roads/ bridges	Bike	Yes	Yes
10133	Wilsonville	Wilsonville	French Prairie Bicycle/ Pedestrian Bridge	Boones Ferry Rd.	Butteville Rd..	Other	A new bicycle and pedestrian bridge crossing the Willamette River would connect the regional Tonquin Trail to the North Willamette Valley parks and recreation areas. A new bridge would provide safe and convenient passage across the Willamette River for emergency access vehicles, cyclists, and pedestrians.	New bicycle/pedestrian/emergency vehicle only bridge crossing the Willamette River.	$ 15,000,000	$ 22,203,664	2008-2017	x	Outer neighborhood	MC		Regional Trail	Bike		Yes
10134	Wilsonville	Clackamas Co.	65th/Elligsen/ Stafford Intersection Improvements	65th, Elligsen, Stafford Rd. intersections	65th, Elligsen, Stafford Rd. intersections	Rural Arterial	Improve traffic safety	Improve turn radii, sight distance and grade differential by combining intersections	$ 3,000,000	$ 4,440,733	2008-2017	x	Other	MC		Freight	Bike		
10152	Wilsonville	ODOT	Wilsonville Rd/ I-5 Interchange Improvements - Auxiliary Lanes	N. of Interchange	S. of Interchange	Major Arterial	Add capacity to the interchange, thus providing congestion relief and remove a freight bottleneck. Improve safety by reducing congestion on I-5 and ramps.	Provide auxiliary lanes for enhanced safety and capacity.	$ 12,500,000	$ 18,503,054	2008-2017		Town Center	MC		Through-ways	Freight		
10153	Wilsonville	Wilsonville	Barber St. Extension from Kinsman Rd. to Villebois Village	Kinsman Rd.	Villebois Village	Other	The project will reduce the need to use I-5 and OR 217 by providing needed connections to the Villebois Village housing development and employment areas in Wilsonville and with the new Commuter Rail site.	Extend 3 lanes with sidewalks and bike lanes.	$ 8,900,000	$ 13,174,174	2008-2017	x	Employment area	CB		Roads/ bridges			
10154	Wilsonville	ODOT	Wilsonville Rd/ I-5 Interchange Improvements - Setback Abutments & Widen Wilsonville Rd.	Town Center Loop W	Boones Ferry Rd.	Minor Arterial	Add capacity to the interchange, thus providing congestion relief and remove a freight bottleneck. Improve safety by reducing congestion on I-5 and ramps.	Provide additional left-turn lanes, setback abutments, improves signal synchronization, fixes sight distance problems, and provides for enhanced bike/pad safety.	$ 11,000,000	$ 16,282,687	2008-2017	x	Town Center	MC		Through-ways	Freight		Yes

2035 RTP Project List -- City of Wilsonville

Metro Project ID	Nominating Agency	Facility Owner / Operator	Project/ Program Name	Project Start Location (Identify starting point of project)	Project End Location (Identify terminus of project)	Local Functional Classification	Project Purpose	Description	Estimated Cost ($2007)	Estimated Cost (YOE$)	Time Period	Federal FC Project	2040 Land Use	Mobility Corridor or Community Building?	HCT Priority as Adopted by JPACT and Metro Council	Primary Mode	Secondary Mode(s)	Project located in EJ Community?	Project located in Goal 5 Resources?
10155	Wilsonville	ODOT	Wilsonville Rd/ I-5 Interchange Improvements - On/Off Ramps	N. of Interchange	S. of Interchange	Interstate	Add capacity to the interchange, thus providing congestion relief and remove a freight bottleneck. Improve safety by reducing congestion on I-5 and ramps.	Widen and lengthen on/off ramps.	$ 12,000,000	$ 17,762,931	2008-2017	x	Town Center	MC		Through-ways	Freight		Yes
10156	Wilsonville	Wilsonville	Boeckman Rd. at Boeckman Creek	Canyon Creek Rd. N	Stafford Rd.	Minor Arterial	Boeckman Road is designated as an arterial street in the City's TSP. It provides an east-west connection in Wilsonville between Tooze Road/Graham's Ferry Road on the west and Stafford Road on the east, serving as an important non-interstate alternate.	Widen Boeckman Road to 3 lanes with bike lanes, sidewalks and connections to regional trail system, remove culvert and install bridge.	$ 5,800,000	$ 8,585,417	2008-2017		Inner neighborhood	CB		Roads/ bridges	Bike		
10852	Wilsonville		95th/Boones Ferry/ Commerce Circle Intersection Improvements	95th Ave.	Southbound off-ramp of I-5/Stafford Interchange	Major Arterial	Reduce congestion & improve feight access into regionally signficant industrial lands	Construct dual left-turn and right-turn lanes; improve signal synchronization, access management & sight-distance	$ 2,500,000	$ 3,700,611	2008-2017	x	Industrial Area	MC		Freight	Roads/bridges	Yes	
10853	Wilsonville	Wilsonville	Kinsman Rd. Extension	Ridder Rd.	Day St.	Local	Improve freight access to Coffee Creek regionally significant industrial area	Construct three lane road extension with sidewalks & bike lanes	$ 6,500,000	$ 9,621,588	2008-2017	x	Industrial Area	CB		Freight	Roads/ bridges	Yes	
11107	SMART		Extension of transit service from Wilsonville to downtown Portland			Other	Development of high-quality transit service	Additional Service hours for new services and related bus stop and ROW improvements	$ 1,152,000	$ 1,705,241	2008-2017	X	Other	CB		Transit capital			
11108	SMART		New Service to West Wilsonville Developments			Other	Development of high-quality transit service	Additional Service hours for new services and related bus stop and ROW improvements	$ 1,550,000	$ 2,294,379	2008-2017	X	Town Center	MC		Transit capital		Yes	Yes
11109	SMART		Bus Replacements			N/A	Purchase replacement buses to ensure safe and reliable service.	Purchase buses to replace those that are no longer safe or reliable.	$ 14,000,000	$ 25,260,876	2008-2035	X	Other	MC		Transit capital			
11110	SMART		Wilsonville Park & Ride Expansion			N/A	250 Space Expansion of Wilsonville Park & Ride	Design & construct an additional 250 spaces of parking at the Wilsonville Stations	$ 4,500,000	$ 6,661,099	2008-2017	X	Station community	MC		Transit capital			
11111	SMART		SMART Administrative Building			N/A	Enhance Administrative Office Space to meet the needs of the growing SMART system	Design and construct SMART offices near the Wilsonville commuter rail station	$ 4,000,000	$ 5,920,977	2008-2017	X	Other	MC		Transit capital			
11112	SMART		Wilsonville SMART Fleet Services Facility			N/A	Enhance Maintenance Facility to meet the needs of the growing SMART system	Design and construct a transit fleet services facility near the Wilsonville commuter rail station	$ 8,000,000	$ 11,841,954	2008-2017	X	Other	MC		Transit capital		Yes	
11113	SMART		Transportation Management Association (TMA)			N/A	Form a TMA to provide coordinated transportation services to local employers	Form a transportation management association (TMA) to provide transportation services and information on alternatives to local employers and employees	$ 1,190,000	$ 2,410,722	2018-2035	X	Employment area, Industrial area	CB		TDM	Pedestrian/ bike	Yes	
11243	Wilsonville	Washington Co.	Day Street	Grahams Ferry Rd.	Boones Ferry Rd.	Arterial	Improve structural integrity of road to accommodate increased freight traffic to industrial areas	Reconstruct road to accommodate increasing volumes of heavy trucks	$ 3,200,000	$ 4,736,782	2008-2017	x	Industrial Area	MC		Roads/ bridges			
11327	SMART		Commuter Service to Tualatin/ Sherwood				Development of high-quality commuter services	Additional Service hours for new services and related bus stop and ROW improvements	$ 600,000	$ 1,215,490	2018-2035		Employment area, Industrial area	MC		TDM			Yes
11328	SMART		New Service to Clackamas TC				Development of high-quality grid-like transit service from Wilsonville to CTC	Additional Service hours for new services and related bus stop and ROW improvements	$ 3,000,000	$ 6,077,450	2018-2035		Employment area, Regional Center	MC		Transit capital			
11343	SMART		Pedestrian Improvements				Development and improvement of pedestrian access to transit	Design & construct a variety of pedestrian improvements to enhance access to transit	$ 7,000,000	$ 10,361,710	2008-2017		Town Center	CB		Transit capital	Pedestrian, Bike		

Appendix G

Solutions Analysis and Proposed Funding Program (DKS, 2012)

Technical Memorandum

TO: Project Management Team

FROM: Scott Mansur, PE; Carl Springer, PE; Brad Coy, PE; DKS Associates

DATE: July 6, 2012

SUBJECT: **Solutions Analysis and Proposed Funding Program (Task 6.4)** P10068-007

This memorandum documents the transportation solutions (including strategies and projects) being considered as part of the City of Wilsonville Transportation System Plan (TSP) update to address the identified transportation system needs. Please refer to the prior *Transportation System Gaps and Deficiencies* memorandum, dated February 9, 2012, for more information about system needs.

The analysis of individual projects was performed as the initial step of the solutions analysis to provide a basis for developing a preferred package of transportation solutions. If it is determined that there are funding limitations that prevent full package of solutions from being financially feasible, then the information in this memorandum will also assist in the development of a financially-constrained transportation solutions package for the City. The following sections identify various strategies and improvement projects to be considered for inclusion in City's preferred and financially-constrained solutions packages:

Improvement Priorities

The City of Wilsonville is responsible to manage a transportation system that efficiently and effectively transports people and goods within the City with the purpose of supporting the quality of life of residents and the economic vitality of businesses. This is no easy task, particularly in the current economic climate. However, the City will make sustainable progress that improves system efficiency, reduces congestion, and saves money for both the City and system users by first reducing travel demand, then improving operations and safety, and finally investing in expanded facilities. In practice, Wilsonville should be engaged in these three activities simultaneously through a balanced effort that addresses the City's existing needs while laying the framework for also meeting its future transportation system needs. In doing so, Wilsonville will receive the greatest value from its infrastructure expenditures. It can also ensure that its transportation system is not overbuilt, which has negative impacts to the City's ongoing operations and maintenance budget and to community livability.

The City can best manage its transportation system by considering the following solutions as it prepares to meet future needs:

1. Transportation System Management and Operations (TSMO) strategies that improve the safety and efficiency of the current system
2. Transit, bicycle, and pedestrian system improvements that target key system gaps and safely accommodate those users who choose to travel by one of these modes
3. Land use strategies[1] that (1) provide equal accessibility and connectivity to those users who choose to travel by transit, bicycle, and pedestrian modes and (2) utilize the City's functional classification hierarchy to reduce out-of-direction travel and manage congestion on arterials
4. Connectivity improvements to provide parallel arterials, collectors, or local streets that include pedestrian and bicycle facilities in order to provide alternative routes and encourage walking, biking, and access to transit
5. Motor vehicle capacity improvements upon a demonstration that the other strategies are not appropriate or cannot adequately address identified transportation needs

These solutions are listed in order of priority based on their cost-effectiveness at supporting safety, growth, livability, and economic viability. Because operational, safety, and multi-modal solutions (i.e., priority solutions 1 and 2) are most effective when implemented as components of a complete system, the City of Wilsonville can best implement these priority solutions by having policies, programs, and master plans in place that support their continued programmatic implementation as parcels develop and infrastructure projects are built. This approach will optimize the value of the City's transportation infrastructure without burdening the City with the requirement to reevaluate this list of priorities for every identified transportation gap or deficiency.

By taking a programmatic approach (primarily through the implementation of its master plans) the City of Wilsonville can also ensure consistency with Section 3.08.220 of the Regional Transportation

[1] Specific land use strategies that should be considered are identified in OAR 660-012-0035(2).

Functional Plan (RTFP),[2] which indicates that higher priority measures should be considered first and that the City should explain its choice of strategies. Similarly, Policy 1G of the *1999 Oregon Highway Plan* indicates that higher priority measures should be implemented, except when a lower priority measure is clearly more cost-effective or better supports safety, growth management, or other livability and economic viability considerations.[3]

Based on these priorities, transportation solutions (including a mixture of policies and projects for the entire transportation system) were evaluated to help the City of Wilsonville meet its expected transportation improvement needs through the year 2035. General solutions are provided below, while specific solutions are documented in the remaining sections of this memorandum.

In general, the City of Wilsonville would benefit from the following solutions:

- **Transportation System Management and Operations (TSMO):** Implement applicable strategies and projects that address access management, intelligent transportation system (ITS), transportation demand management (TDM), and safety. TSMO strategies provide the greatest benefits to arterials and highways; therefore, the City can best implement these strategies and projects in coordination with Clackamas County, Washington County, and the Oregon Department of Transportation (ODOT).
- **Bicycle and Pedestrian:** Construct stand-alone improvements to fill key gaps in the pedestrian and bicycle network (particularly the low-cost and safety-related projects), including Safe Routes to School projects and connections to transit stops. Construct other bicycle and pedestrian facilities as part of roadway improvement projects or development.
- **Transit:** Maintain existing transit service and perform ongoing service updates based on demand and available financial resources. Service updates would be most beneficial following major roadway improvements, pedestrian and bicycle system completion, and Master Plan Area development or other major growth areas. Also construct other improvements, such as transit stop amenities and technology improvements, as funding is available. Transit service improvements are also best supported when constructed in coordination with land use development and focused on activity centers.
- **Land Use:** Continue to encourage master plan developments with complementary land uses (jobs, retail, services, and housing) that support convenient access to nearby destinations for all travel modes. For example, by placing housing near desired destinations (e.g., employment areas, retail, and services) and then providing bicycle and pedestrian facilities, the City can help reduce the need for transportation improvements while also creating more walk-able communities.
- **Freight:** Designate freight routes throughout Wilsonville. In addition, construct improvements that support freight reliability and mobility while taking due consideration for the needs of other users.
- **Developer Coordination:** Perform ongoing coordination with developers to widen fronting

[2] Metro Code Chapter 3.08: The Regional Transportation Functional Plan (Ordinance No. 10-1241B, § 5, adopted 06/10/10, effective 09/08/10). The RTP priority list also include traffic-calming designs and devices; however, no traffic calming needs have been identified for the City of Wilsonville, and any future needs are expected to primarily relate to safety concerns, which would already be addressed by priority 1.

[3] *1999 Oregon Highway Plan* (as amended January 2006), Policy 1G, Policy Element, page 85.

roadways and construct roadway extensions (including associated bicycle and pedestrian facilities) consistent with cross section standards as adjacent parcels develop or redevelop. If the developer's proportional share only covers partial completion, then the City should consider funding the remaining portion of the project. In addition, coordinate with Master Plan Area developers to ensure that land use patterns and internal transportation infrastructure support all travel modes.

- **Roadway Connectivity:** Partner with developers and other agencies to fund and construct roadway extensions that provide significant connectivity benefits, including the Barber Street and Kinsman Road extensions in the vicinity of Villebois.
- **Roadway Capacity:** Construct additional roadway improvements (with any associated bicycle and pedestrian facilities) with the assurance that the capacity increases are warranted and will support the system's long-term performance and vitality, consistent with policy objectives.
- **Funding:** Pursue grants and other funding resources to assist the City in constructing infrastructure improvements, buying new transit buses, and making other improvements that support the transportation system.

Transportation System Management and Operations (TSMO)

Transportation System Management and Operations (TSMO) is the general term for implementing various solutions that enhance the performance of existing and programmed transportation infrastructure. The focus of TSMO is to reduce congestion and save money by improving the transportation system's efficiency before expanding infrastructure. Improving efficiency requires a collaborative effort by both the system managers/operators and the system users. This collaboration occurs both prior to or during a trip being made by a transportation system user. Four of the primary TSMO strategies include:

- **Access Management** strategies reduce traffic conflicts at intersections and driveways in order to improve traffic flow and safety.
- **Intelligent Transportation System (ITS)** strategies involve the deployment and management of advanced technologies that collect and distribute information to both users and operators staff so they can most effectively use and manage the transportation system.
- **Transportation Demand Management (TDM)** strategies encourage users to choose other transportation modes besides traveling alone in their vehicles or to travel at off-peak periods of the day.
- **Safety Improvements** support the efficient use of existing infrastructure by reducing the avoidance of a given location by reducing safety-related incidents.

Access Management

Access management refers to the broad set of techniques that are used to balance the transportation system's need to provide safe, efficient, and timely travel with the ability to allow access to individual properties. Access is an important component of the City's transportation infrastructure and significantly affects system operations and safety.

The City currently has minimum access spacing standards that apply to City roadways based on functional classification. These standards are considered by City staff during the development review process to provide direction to developers. The Oregon Department of Transportation (ODOT) also has access spacing standards that apply to the I-5 interchange areas and to the section of Boones Ferry Road that is under ODOT jurisdiction (i.e., between the I-5 interchange and Day Road). One of the major components of the I-5/Wilsonville Road Interchange Area Management Plan (IAMP) addressed access improvements that are needed.

It is important for the City of Wilsonville to continue to manage access to its roadways because it improves both traffic flow and the safety. By limiting access to higher classification roadways (especially Major and Minor Arterials), conflicts between vehicles entering and exiting driveways and vehicles on the roadway are reduced. Access management also benefits the walking and cycling public by reducing conflicts with vehicles entering and exiting the roadway.

The City of Wilsonville can continue to improve safety, mobility, and access to its transportation system by implementing the following access management strategies:

- **I-5/Wilsonville Road Interchange Access Management:** Eliminate or consolidate accesses on Wilsonville Road within one-quarter mile of the I-5 interchange as opportunities arise. Specific access management deficiencies were identified as part of the I-5/Wilsonville Road Interchange Area Management Plan (IAMP).[4]
- **I-5/Elligsen Road Interchange Access Management:** Eliminate or consolidate accesses on Elligsen Road and Boones Ferry Road within one-quarter mile of the I-5 interchange as opportunities arise.
- **Parkway Avenue (Boeckman Road to Xerox) Access Management:** Eliminate or consolidate accesses that do not conform to the City's 600-foot access spacing standard for Minor Arterials on this section of Parkway Avenue as development or redevelopment occurs.
- **Access Management Adjacent to High Volume Intersections:** Pursue appropriate treatments at driveways or other roadway connections adjacent to high volume intersections. For example, the planned median on 95th Avenue at the northern intersection with Commerce Circle will provide an important safety improvement due to the proximity of the Boones Ferry Road/95th Avenue intersection.
- **Ongoing Development Review and Conditions of Approval for Site Access:** Continue to use access spacing standards to manage driveway location and spacing on a case-by-case basis for new developments and when a site redevelops. Where existing or proposed driveways do not meet spacing standards, City staff should consider mitigation treatments, such as consolidating accesses or restricting turn movements to right-in/right-out.

Intelligent Transportation System (ITS)

The development and management of intelligent transportation system (ITS) solutions is one of the most important areas of recent transportation-related technological advancement. ITS strategies involve the deployment and management of advanced technologies that collect and distribute

[4] *Interchange Area Management Plan; Interstate 5/Wilsonville Road (Exit 283)*, DKS Associates, October 2009

information to both users and operators staff so they can most effectively use and manage the transportation system.

ODOT currently manages and operates the ITS infrastructure along the I-5 corridor. In addition, Clackamas County currently manages and operates the ITS infrastructure in and around the City of Wilsonville. One of the basic ITS strategies is to effectively operate the City of Wilsonville traffic signals. Two of the signalized roadway corridors currently have coordinated signals that allow improved traffic flow:

- Wilsonville Road from Kinsman Road to Town Center Loop East
- Boones Ferry Road/Elligsen Road from Day Road to Parkway Center Drive

One way in which the City has been upgrading its traffic signals is by removing the "dog house" style signal lights and replacing them with signal lights that use flashing yellow arrows to inform drivers when a left-turn is permitted but must still yield to oncoming traffic. Under appropriate circumstances, these flashing yellow arrows can send a clear message to drivers that they must first yield, but then they are able to make the turn when a gap in traffic allows it. Therefore, in many locations, this ITS solution improves safety due to clarity of message and improves efficiency due to improved utilization of available gaps. There are only a few traffic signals left where this replacement is still needed.

The Clackamas County Intelligent Transportation System (ITS) Plan[5] identifies system improvement needs within Wilsonville. Identified projects include the following (with additional details and maps available within the ITS Plan):

- Connect the City of Wilsonville to the Regional Fiber Network via Wilsonville Road
- Connect the following roadways to Clackamas County's fiber network:
    - Wilsonville Road from Willamette Way East to Boeckman Road/Advance Road
    - Elligsen Road/Boones Ferry Road from Day Road to Canyon Creek Road
    - 95th Avenue from Boones Ferry Road to Boeckman Road
    - Boeckman Road from 95th Avenue to Parkway Avenue
    - Boberg Road from Boeckman Road to Barber Street
    - Barber Street from Boberg Road to Kinsman Road
    - Kinsman Road from Barber Street to Wilsonville Road
- Connect the I-5/Elligsen Road and I-5/Wilsonville Road interchanges to ODOT's fiber network
- Install CCTV cameras at the following locations and connect to Clackamas County's Network:
    - Wilsonville Road/Boones Ferry Road intersection
    - Wilsonville Road/Rebekah Street intersection
    - I-5 Boones Bridge over the Willamette River
- Deploy adaptive signal timing and install video monitoring cameras and vehicle detection equipment (to collect traffic counts and speeds) on Wilsonville Road from Brown Road to Town Center Loop East

[5] *Clackamas County ITS Plan Update – ITS Action Plan*, DKS Associates, May 2011

- Install video monitoring cameras and vehicle detection equipment (to collect traffic counts and speeds) on Elligsen Road from Day Road to Canyon Creek Road
- Install railroad crossing alert system at Portland and Western at-grade railroad crossings

The City of Wilsonville has been installing 3-inch conduit as part of all major roadway improvement projects in preparation for future fiber communications. This conduit can be used for fiber, traffic counters, and other ITS equipment. By connecting its existing fiber network to the City's traffic signals and traffic control cameras, Clackamas County will be able to transfer information back to their operations center in order to more effectively monitor and operate the City's traffic signal system. This infrastructure will also support emergency responders in performing rapid incident detection and response.

Providing traveler information is another important use of the City's ITS infrastructure. By collecting and distributing information about current roadway and transit conditions, the City can help transportation users make more informed decisions, which in turn will benefit the entire transportation system. Some potential improvements include variable message signs, Internet resources, mobile apps, or other tools for relaying quick and reliable information to the public, media outlets, and freight companies. One example that would benefit transit users is a reader board display at the WES Station and SMART Central Transit Center that tells passengers how long they will be waiting for the next train or bus. This same information could also be posted to the SMART and TriMet websites to assist transit users who are preparing for transit trips.

In addition to benefiting transportation users, data about the transportation system operations can also benefit transportation planners and decision makers. The information collected by ITS infrastructure would be a valuable resource for evaluating transportation system operations. Therefore, it can inform new performance measures that the City would be able to use for planning and tracking system improvements.

The City of Wilsonville would benefit from the following ITS strategies:

- **Replace all Remaining "Dog House" Signal Lights with Flashing Yellow Arrow:** Finish current efforts to replace the left-turn signal lights by installing flashing yellow arrows at the remaining three signalized intersections that operate with "Dog House" signal lights: Parkway Avenue/Town Center Loop, Wilsonville Road/Montebello Drive, and Wilsonville Road/Brown Road.
- **Fiber Network:** Continue to install 3-inch conduit as part of all major roadway improvement projects. Also coordinate with Clackamas County and the Oregon Department of Transportation to connect to their regional ITS networks.
- **Data Collection and Management:** Evaluate ways to collect and distribute information, in coordination with Clackamas County, to assist transportation system users in making information decisions regarding their choice of mode, departure time, and routing. This information would also be beneficial to the City for evaluating its transportation system operations and planning and tracking system improvements.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is the general term for implementing various strategies that reduce the number of vehicles on the roadway (i.e., the "demand"). By managing transportation demand, the City of Wilsonville will ensure more optimal use of the system's available capacity and also support members of the community who may otherwise be increasingly burdened by the rising fuel prices. The two primary methods for managing demand are to (1) reduce the overall number of vehicles on the roadway and (2) shift demand to less congested (i.e., off-peak) periods. These methods are best achieved by a combination of educational and outreach programs as well as supporting infrastructure and services (i.e., bicycle and pedestrian facilities and transit services).

Vehicle Reduction

One way the City can manage transportation demand is to encourage users to make fewer trips or to choose travel modes that require fewer vehicles to be on the roadways. The City of Wilsonville is currently involved in implementing TDM measures through the SMART Options Program, which includes the following services:

- The SMART Options Program provides individualized marketing and trip planning to employees and residents of Wilsonville. The most recent and robust individualized marketing campaign targeted all Wilsonville residents during 2011 through the "Discover Wilsonville Program". The final report for this intense effort will be available Spring 2012.
- The SMART Options Program Is an active partner with the Statewide and Metro-region Drive Less, Save More and Drive Less Connect campaign to encourage ridesharing and active transportation choices (i.e., other modes of transportation besides driving alone). The SMART Options Program offers incentives for riding the bus, taking WES, walking, bicycling, and ridesharing.
- The SMART Options Program provides car-sharing information at outreach and information events and has had conversations with Zipcar about the future of car-sharing in Wilsonville.

Because many of the trips in Wilsonville (especially those during the peak periods) are made by commuters, it is very beneficial for the City to coordinate efforts with employers, particularly those with a large number of employees. By providing free assistance to employers setting up transportation programs through the SMART Options commuter program, SMART Transit helps employees find the best way to get to work, whether by transit (bus or train), car/vanpooling, walking, bicycling, teleworking, car sharing, close-to-home commuting, park & rides, creative work schedules, or commuter rail.

Research has shown that a comprehensive set of complementary TDM policies implemented over a large geographic area can be an effective tool in reducing the number of vehicle miles traveled to and from that area.[6,7] However, the same research indicates that in order for TDM measures to be most effective, they should go beyond the low-cost, uncontroversial measures commonly used such as carpooling, transportation coordinators/associations, priority parking spaces, etc. The more

[6] *The Potential for Land Use Demand Management Policies to Reduce Automobile Trips*, ODOT, by ECO Northwest, June 1992.
[7] *Evaluation of Potential Measures for Achieving Modal Targets*, Metro, July 2005; http://library.oregonmetro.gov/files/finalreport_modaltargets.pdf

effective TDM measures include elements related to parking and congestion pricing, improved services for alternative modes of travel, and other market-based measures.

Table A in the appendix lists several TDM strategies for employers as well as the potential trip reductions that may be expected following the implementation of each strategy. These strategies are part of the Employee Commute Options (ECO) Rules, which are administered by the Oregon Department of Environmental Quality (DEQ) and required of all Portland Metro area businesses with more than 100 employees at one worksite.[8] When coordinating with employers, SMART reviews these strategies to help the employers identify which ones are most appropriate. The strategies at the top of the table are expected to have the greatest potential for reducing vehicle trips. Therefore, they should be more highly encouraged, as feasible. If free support is insufficient to obtain the desired results, then appropriate incentives may be considered.

In coordinating with employers, the City would also benefit from efforts by SMART to solicit feedback regarding additional bicycle, pedestrian, and/or transit facilities or services (e.g., earlier transit service to support early morning shifts) that are needed to support employers and improve the successful implementation of TDM strategies. It may also be beneficial to request and incentivize employers to survey their employees regarding their mode choices. A comprehensive survey program would help the City to know what transportation choices are being made and would be beneficial for tracking changes. This information would also help the City determine if it is making progress towards meeting the RTFP-required Non-Drive Alone Modal Targets, which Metro has identified as targets to be achieved for each area of the City by the year 2035.[9]

Another option for implementing and monitoring this type of TDM program (besides using the current SMART Options program) may be through the formation of a transportation management association (TMA). The Regional Transportation Plan (RTP) identifies the formation of a TMA as an RTP project (#11113). However, it is expected that the City would be better served by focusing its efforts on the SMART Options Program and seeking opportunities to incorporate public-private partnerships into the program.

Because the Town Center is classified as a "Center" in Metro's RTP, a parking management plan will be needed for RTFP compliance but can be completed separate from the TSP update.[10] The City may also consider creating a parking management area in the Town Center area. The goal would be to ensure that parking is supplied, maintained, and operated in a way that supports the continued economic growth of the Town Center area while also unbundling parking costs from nearby developments and encouraging the use of active travel modes and ridesharing to access the Town Center area.

The WES station is classified in the RTP as a "Station Community" and also requires a parking management plan for RTFP compliance. This plan should focus on the station's primary use as a park-and-ride lot for commuters to the Portland Metropolitan Area and should support future park-and-ride demand increases to avoid impacts resulting from inadequate capacity.

[8] http://www.deq.state.or.us/nwr/ECO/eco.htm; viewed on March 2, 2012.
[9] See Metro's Regional Transportation Functional Plan (RTFP), Table 3.01-1.
[10] See Metro's Regional Transportation Functional Plan (RTFP), Title 4, Parking Management Sec 3.08.410I).

The Portland Regional TSMO Plan[11] also identifies multiple TDM strategies that would be beneficial for the City. The Transportation System Gaps and Deficiencies memo[12] lists these strategies along with the related efforts already being undertaken by SMART.

Off-Peak Shifts

The City can also manage transportation demand by implementing policies that encourage shifting vehicle usage to less congested periods. Because the City's transportation facilities are designed to accommodate average weekday p.m. peak hour traffic (i.e., the commuter's evening rush hour), the system may be underutilized throughout the rest of the day unless users are encouraged to use the system at other times of the day. If some of the traffic demand can be shifted, then the system is able to have improved operations without requiring as many system improvements.

If peak traffic demand isn't intentionally spread over time, then it is more likely that the system will be over capacity during peak periods. The result will be peak hour congestion that will force demand spreading to occur as vehicles wait in traffic. Therefore, intentional traffic demand spreading allows more vehicles to be accommodated without the congestion that results from excess demand.

In the past, the City has coordinated with large employers to run off-peak shift changes. This coordination was beneficial to both the City and the employers because it allowed development to occur even though there were capacity limitations at the Wilsonville Road interchange. Traffic counts and observations suggest that the majority of these large employers still operate with off-peak shift changes, but the City should develop consistent policies for encouraging, tracking, and managing off-peak shift changes.

The City of Wilsonville would benefit from the following TDM strategies, which are likely to be increasingly important as fuel prices continue to rise:

- **Mode Choice Surveys:** Survey residents and employees in each of the City's neighborhoods and commercial/industrial areas to better understand what transportation choices are being made. This information would also allow the City to determine if it is making progress towards meeting Metro's Non-Drive Alone Modal Targets for each area of the City.
- **Enhanced TDM Coordination with Businesses:** Enhance the SMART Options Program's travel demand management (TDM) coordination with businesses by performing mode choice surveys, helping to achieve trip-reduction targets, incentivizing the implementation of the strategies listed in Table A in the appendix, and soliciting feedback relating to active transportation infrastructure and service needs. While the Regional Transportation Plan identifies the formation of a transportation management association (TMA) as a recommended project in Wilsonville (RTP Project #11113), it is expected that the City would be better served by focusing its efforts on the SMART Options Program and seeking opportunities to incorporate public-private partnerships into the program.

[11] *Portland Regional Transportation System Management and Operations Plan: 2010 – 2020*, Metro, June 2010

[12] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

- **Car Sharing Coordination:** Continue to monitor feedback from residents and businesses regarding car-sharing demand; optional services include car-sharing companies (e.g., Zipcar or Car2Go) and peer-to-peer car sharing (e.g., www.getaround.com).
- **Town Center Parking Management Plan:** Prepare and adopt a parking management plan that includes an inventory of parking supply and usage, an evaluation of bicycle parking needs, and the identification of strategies and policies consistent with RTFP Title 4, Parking Management Sec 3.08.410. Car sharing considerations and coordination should also be included in the management plan.
- **WES Station Parking Management Plan:** Prepare and adopt a parking management plan that supports the station's primary use as a park-and-ride lot for commuters to the Portland Metropolitan Area. This plan should include an inventory of parking supply and usage, an evaluation of bicycle parking needs, and the identification of strategies and policies consistent with RTFP Title 4, Parking Management Sec 3.08.410 (for example, the addition of carpool parking). These considerations should support future park-and-ride demand increases to avoid impacts resulting from inadequate capacity.
- **Off-Peak Shift Change Policies and Practices:** Develop consistent policies and practices for encouraging, tracking, and managing off-peak shift changes, particularly for those employers who have already agreed to operate off-peak shifts. These efforts could be performed in conjunction with the SMART Options program. They should also be coordinated with the City's Transportation System Development Charges (SDCs) and Public Facilities (PF) conditions.

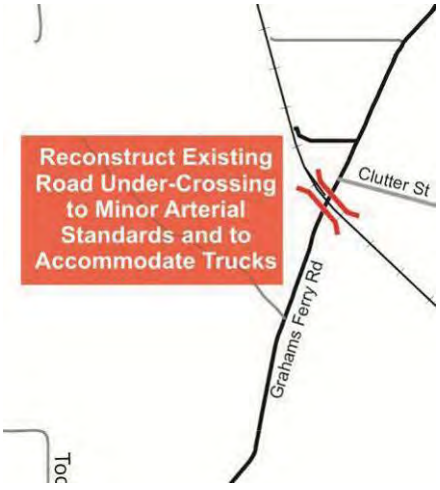
Safety Improvements

The prior *Transportation System Gaps and Deficiencies* memorandum[13] identified seven key locations in the City of Wilsonville where safety-related transportation improvements are needed. Table 1 lists four of the locations that require pedestrian, bicycle, and or intersection improvements and are addressed in conjunction with other improvement projects.

Table 1: Identified Safety Need Addressed with Other Project

System Need	Evaluation Comment
Horizontal curvature on Boones Ferry Road north of Day Road	No additional evaluation; being improved by Washington County widening project currently under design and funded for construction
Sidewalk and bike lane gaps on Parkway Avenue between the Xerox campus and Parkway Center Drive	See pedestrian and bicycle improvement project (Project C40)
Stafford Road/65th Avenue intersection spacing, congestion, travel speeds, and horizontal curvature	See intersection improvement project (Intersection #11)
Narrow northbound shoulder on I-5 Boones Bridge over the Willamette River is unsafe for bicyclists	Not evaluated; referred to ODOT for consideration; in the long-run, this safety need would be resolved by a Willamette River bike and pedestrian bridge or other river crossing solution

Three of the identified safety needs are particularly critical for improved safety, and the projects for addressing these deficiencies were evaluated using the TSP evaluation criteria documented in the prior *Goals and Evaluation Criteria* memorandum.[14] Planning level cost estimates were also prepared. The project details and evaluation results are described in the following tables.

Grahams Ferry Road Undercrossing Improvements at Railroad Bridge	**Evaluation Score: 75** **Cost Estimate: $4.0 M**
Improvement	**Information**
	**Jurisdiction:** Washington County **Improvement Need:** Substandard vertical and horizontal clearance on Graham's Ferry Road at the undercrossing of the Portland and Western Railroad **Previously Identified Improvement Projects:** Reconstruct existing grade-separated under-crossing to City of Wilsonville Minor Arterial standards (Coffee Creek Master Plan Safety Project and Metro RTP Mobility Corridor #3 Need) **Comments:** Because this improvement is on a recommended freight route, it has important freight implications and should be built to accommodate large trucks.

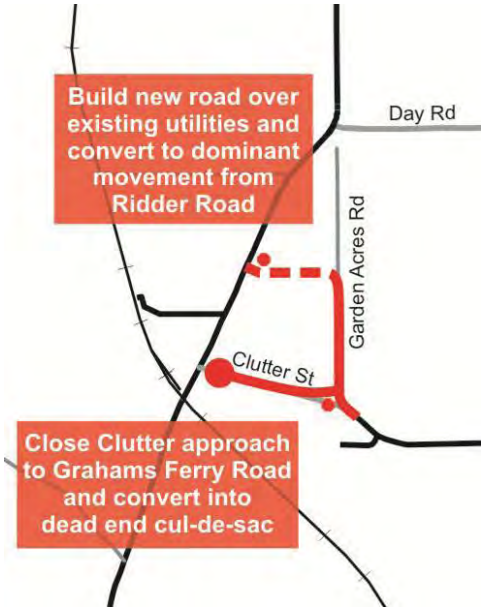
[13] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

[14] *Wilsonville Transportation System Plan Update – Goals and Evaluation Criteria (Task 2.3)*, technical memorandum #3 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, April 11, 2012 (Draft).

Grahams Ferry Road/Clutter Road Intersection Realignment

Evaluation Score: 65
Cost Estimate: $1.0 M

Improvement



Information

Jurisdiction: Washington County

Improvement Need: Limited sight distance for vehicles approaching on Clutter Road due to the nearby vertical and horizontal curvature, the grade-separated railroad crossing, and adjacent vegetation

Previously Identified Improvement Project: Realign Clutter Road approximately 500 feet to the north to align opposite Elligsen Way (Coffee Creek Master Plan Safety Project)

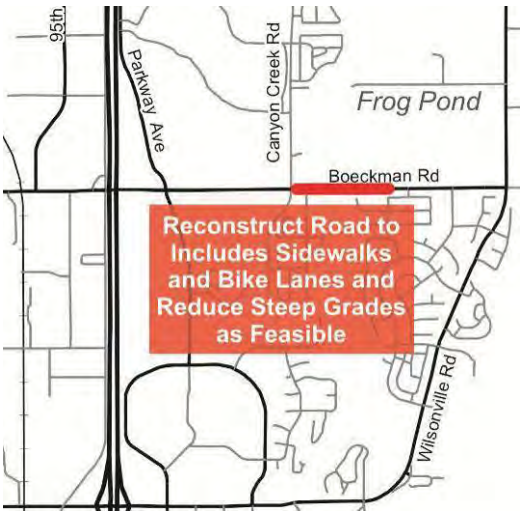
Recommended Improvement: Shown at left.

Comments: Realignment would not be necessary if sight distance can be adequately improved from a combination of vegetation removal and improvements at the nearby Grahams Ferry Road railroad undercrossing.

Boeckman Road Vertical Curve East of Canyon Creek Road

Evaluation Score: 60
Cost Estimate: $5.8 M

Improvement



Information

Jurisdiction: City of Wilsonville

Improvement Need: Non-standard vertical curve (at Boeckman Creek); along this segment, Boeckman Road is a narrow, two-lane road without shoulders, bike lanes, or sidewalks

Previously Identified Improvement Project: Reconstruct Boeckman Road to current Minor Arterial standards, with bike lanes, sidewalks, connections to regional trial system, and a bridge over the creek instead of a culvert (TSP Project W-4f and RTP Project 10156)

Comments: Minimum improvement shall include two travel lanes with bike lanes and sidewalks; other improvements may include a multi-use path and/or a raised structure to reduce the steep grades. There is also an interim improvement now scheduled for the south side of Boeckman Road through the dip.

Alternative Fuels and Transportation Electrification

Within the City of Wilsonville and throughout the Metro area, there is an increasing need to provide infrastructure to support vehicles that use alternative fuels (i.e., electrical and compressed natural gas vehicles). Alternative fuel vehicles help to reduce greenhouse gas emissions and are becoming more popular and affordable. SMART already has a compressed natural gas fueling station that it uses for its bus fleet. Charging and refueling stations would improve the available options for owners of these vehicles, but they do not need to be a free service.

The City of Wilsonville would benefit from the following alternative fuel and transportation electrification strategies:

- **Compressed Natural Gas Fueling Coordination:** Help facilitate the coordination between transportation companies that may benefit from shared use of compressed natural gas fueling stations. Two potential partners may include SMART and the West Linn-Wilsonville School District.
- **Alternative Fueling Strategies for Transit:** Transit-related fueling strategies are identified later in the transit section of this memorandum.
- **Electrical Charging Provisions in Building Code:** Include provisions in residential, commercial, and industrial building codes to accommodate future infrastructure needs, including electrical wiring and outlets in parking lots and garages to support future electric vehicle charging stations. Providing the necessary infrastructure to support future installation of electrical charging stations is significantly more economical as part of new development compared to full retrofitting costs (which are at least 25 to 35 percent higher, depending on individual circumstances).
- **Level II (240 volt) Electrical Charging Stations:** Encourage businesses to install Level II (240 volt) charging stations for use by employees during work hours. Also install Level II (240 volt) charging stations at SMART Central for use by commuters who park at the park-and-ride.
- **Level III (480 volt) Electrical Charging Station:** Pursue grant funding that may become available through the West Coast Green Highway Initiative or other resource to install a Level III (480 volt) DC fast charging station near one of the City's I-5 interchanges. The City of Wilsonville can provide a unique benefit to the electrical charging system (which is envisioned to run through British Columbia, Washington, Oregon, and California) due to its location at the southern tip of the Portland Metropolitan area along the I-5 corridor. The Town Center Loop area may be an ideal location due to its proximity to the I-5/Wilsonville Road interchange and nearby amenities, which can serve patrons during the 20 to 40 minute vehicle charge times.

Bicycle and Pedestrian Improvements

Bicycle and pedestrian facilities have the potential to offer complete community connectivity between the City's neighborhoods, retail centers, employment centers, and recreational areas. They can provide interrelated opportunities for work, play, shopping, and exercise for the City's residents, employees, and visitors. They also benefit local school children and their parents by allowing safe and convenient walking and biking routes between schools and neighborhoods.

When shorter trips can be made by foot or bike, the transportation system and all users will experience significant safety and operational benefits. Strategically placed pedestrian and bicycle facilities help reduce traffic congestion, vehicle-miles traveled, and green-house gas emissions, while increasing the vibrancy of communities and improving the health and safety of City residents. However, these benefits are only realized when there are safe and convenient routes between desired destinations. The pedestrian and bicycle networks can particularly benefit the City's transportation system by being connected to the SMART and WES transit stops (see RTP Project 11343) and to the City's primary and middle schools.

In recent years, Wilsonville has made important investments in strengthening its bicycle and pedestrian transportation options, including adopting a bicycle and pedestrian master plan, planning and building sidewalks and trails, hiring a bicycle and pedestrian coordinator, expanding programs and creating tools to encourage walking, and establishing a bicycle and pedestrian task force. The City would benefit from improved coordination with the bicycle and pedestrian task force by seeking input earlier in the planning and design processes. Additional solutions were identified in relation to the City's current Bicycle and Pedestrian Master Plan projects and Safe Routes to School Plans that are currently being developed.

Bicycle and Pedestrian Master Plan Projects

The City's 2006 Bicycle and Pedestrian Master Plan identifies 70 pedestrian and bicycle projects that address the City's gaps and deficiencies. A list of these projects, their current status as of February 2012, and other applicable information were provided previously in the *Transportation System Gaps and Deficiencies* memorandum.[15] Based on the assessment of system needs through 2035, this list of bicycle and pedestrian improvement projects is still considered comprehensive with the exception of an additional project that has been identified:

- Install an enhanced pedestrian crossing, including rectangular rapid flashing beacons (RRFBs), on Parkway Avenue at the bus stops adjacent to Pioneer Pacific College and the future location of the Oregon Institute of Technology (OIT).[16]

This new project and the prior 2006 Bicycle and Pedestrian Master Plan projects, along with their prioritization and updated cost estimates are provided in Table 2 for the community walkways/bikeways ("C") and Table 3 for the regional ("R") and local ("L") trails. Map 1 from the 2006 Bicycle and Pedestrian Master Plan is provided in the appendix and references the same project numbers. The cost estimates account for the Seattle Construction Cost Index (which increased by 2.8 percent between 2006 and 2011).[17] The prioritization is primarily based on the

[15] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

[16] A prior study by the City (*SW Parkway Avenue Pedestrian Crossing Study*, DKS Associates, July 10, 2008) identified overhead flashers as the recommended improvement concept; however, RRFBs are a more cost effective option.

2006 Bicycle and Pedestrian Master Plan due to the significant public process that was performed as part of the plan. However, the following changes or additions to the priorities are recommended:

- The new project (i.e., the enhanced pedestrian crossing and RRFBs on Parkway Avenue adjacent to OIT) should be a high priority due to the additional pedestrian crossings expected from the upcoming occupancy of OIT.
- The Town Center Loop Bike/Pedestrian Bridge over I-5 (Project C4) should be a high priority (it previously was a medium priority) due to the important connection it provides between the SMART Central Transit Center/WES Station (west side of I-5) and Town Center Loop/Brenchley Estates (east side of I-5). This bridge would significantly improve access to transit and would add value to the City's recent investment in its new transit and commuter rail facilities. In addition, one of the key recommendations of the Walk Friendly Community program, which recently gave the City of Wilsonville a Bronze Walk Friendly designation, is that the City should improve bicycle and pedestrian connectivity over I-5.
- The Waterfront Trail Improvements underneath I-5 from Memorial Park to Boones Ferry Park (Project R4a) should also be a high priority project (it previously was a medium priority) because it improves bicycle and pedestrian connectivity over I-5 and is a lower-cost project.

Table 2: Bicycle and Pedestrian Projects (Community Walkways/Bikeways)

Project Location	Project Type	Priority	2011 Cost Estimate
High Priority			
NEW- OIT-Pioneer Pacific College Pedestrian Crossing	Enhanced Pedestrian Crossing	**High (New Project)**	$65,000
C1- Town Center Loop (gaps and deficiencies throughout the area)	Pedestrian Environment	High	$96,000
C2- Town Center Loop West	Shared-Use Path	High	$357,000
C4- Town Center Loop Bridge over I-5	Bike/Pedestrian Bridge	**High (was Medium)**	$3,984,000
C6- Boeckman Road Bridge over I-5	Roadway Bridge Widening	High	$3,984,000[a]
C7- Boeckman Road (Parkway Ave to Canyon Creek Rd)	Bike Lanes and Sidewalks	High	$514,000
C8- Canyon Creek Road Extension (Boeckman Creek Rd to Vlahos Dr)	Bike Lanes and Sidewalks	High	$456,000[a]
C9- Boeckman Road (Canyon Creek Rd to Wilsonville Rd)	Bike Lanes and Sidewalks	High	$903,000[a]
C13- French Prairie Drive (County View Lane to Miley Road)	Shared-Use Path	High	$1,141,000
C14- Miley Road (I-5 Interchange to east French Prairie Drive)	Bike Lanes and Sidewalks	High	$977,000

Table 2 continued on next page.

[17] Seattle Construction Cost Index: http://enr.construction.com/economics/historical_indices/2011/0101-Seattle.asp; viewed on March 5, 2012.

(Continued) Table 2: Bicycle and Pedestrian Projects (Community Walkways/Bikeways)

Project Location	Project Type	Priority	2011 Cost Estimate
High Priority (Continued)			
C21- Water Treatment Plant Connection (Water Treatment Plant to Wilsonville Rd)	Shared-Use Path	High	$247,000
C22- Willamette Way East (south of Wilsonville Road)	Sidewalk Gaps	High	$31,000[a]
C24- Boberg Road (Boeckman Road to Barber Street)	Sidewalk Gaps	High	$375,000
C31- Grahams Ferry Road (Day Road to Tooze Road)	Bike Lanes and Sidewalks	High	$2,036,000[a]
C33- 95th Avenue (Boeckman Road to Hillman Court)	Sidewalk Gaps	High	$82,000
C40- Parkway Avenue (Xerox Drive to Parkway Center Drive)	Bike Lanes and Sidewalks	High	$530,000[a]
Total Cost of High Priority Bicycle and Pedestrian Projects			**$15,778,000**
Cost of Standalone High Priority Bicycle and Pedestrian Projects			**$7,838,000[b]**
Medium Priority			
C5- Parkway Avenue (Boeckman to Town Center Lp)	Shared lane	Medium	$24,000[a]
C10- Frog Pond Trail (Canyon Creek Road to Wilsonville Road)	Shared-Use Path	Medium	$290,000[a]
C11- School Trail (Boeckman Creek Elementary School to planned school site)	Shared Use Path	Medium	$704,000[a]
C12- Memorial Park Central Loop Trail (within Memorial Park)	Shared-Use Path	Medium	$337,000[a]
C17- Boones Ferry Road (Wilsonville Road to Boones Ferry Park)	Bike Lanes and Sidewalks	Medium	$488,000
C19a- Brown Road Extension (Wilsonville Road to Bailey Street)	Bike Lanes and Sidewalks	Medium	$334,000[a]
C20a- Brown Road Extension (Wilsonville Road to 5th Street)	Bike Lanes and Sidewalks	Medium	$177,000[a]
C26- Kinsman Road Extension (Barber Street to Day Road)	Bike Lanes and Sidewalks	Medium	$2,262,000[a]
C27- Barber Street (Kinsman Road to Grahams Ferry Road)	Bike Lanes and Sidewalks	Medium	$1,419,000[a]
C28- Eastern edge of Villebois open space (Barber Street to Villebois Drive)	Shared-Use Path	Medium	$240,000[a]
C29- Costa Circle loop	Signed Bike Route and Sidewalks	Medium	$823,000[a]
C30- Villebois Drive (Boeckman Road to Costa Circle loop)	Bike Lanes and Sidewalks	Medium	$329,000[a]
C36- BPA Power Line Trail (Day Road to Tonquin Trail)	Shared-Use Path	Medium	$504,000
C37- Area 42 Trail (Kinsman Road to Day Road)	Shared-Use Path	Medium	$221,000

Table 2 continued on next page.

(Continued) Table 2: Bicycle and Pedestrian Projects (Community Walkways/Bikeways)

Project Location	Project Type	Priority	2011 Cost Estimate
Medium Priority (Continued)			
C41- Parkway Center Connector (Wiedeman Road Trail to Parkway Center Drive)	Shared-Use Path	Medium	$120,000[a]
Willamette Way West (south of Wilsonville Road)[c]	Sidewalk Gaps	Medium	$31,000[c]
Total Cost of Medium Priority Bicycle and Pedestrian Projects			**$8,303,000**
Cost of Standalone Medium Priority Bicycle and Pedestrian Projects			**$1,244,000**[b]
Low Priority			
C15- I-5 Crossing south of Wilsonville Road interchange (Memorial Drive to 5th Street)	Bike/Pedestrian Bridge	Low	$6,375,000
C16- 5th Street (Boones Ferry Road to new I-5 Bridge)	Bike Lanes and Sidewalks	Low	$53,000
C18- Railroad Track at Wilsonville Road	Pedestrian Refuge Island/Crosswalk	Low	$24,000
C23a- Boones Ferry Road (Wilsonville Road to Barber Street)	Bike Lanes and Sidewalks	Low	$494,000
C34- Clutter Road (Garden Acres Road to Grahams Ferry Road)	Bike Lanes and Sidewalks	Low	$357,000[a]
C35- Cahalin Road (Kinsman Road extension to Tonquin trail)	Bike Lanes and Sidewalks	Low	$709,000[a]
C38- Commerce Circle loop	Sidewalk Gaps	Low	$101,000
C39- Elligsen Road (Argyle Square shopping center to Eastern City Limits)	Bike Lanes and Sidewalks	Low	$165,000[a]
C42- Canyon Creek Trail (Canyon Creek Park to Boeckman Creek Trail)	Shared-Use Path	Low	$204,000
C43- Wilsonville Road/Rose Lane intersection	Pedestrian Refuge Island/Crosswalk	Low	$48,000
Total Cost of Low Priority Bicycle and Pedestrian Projects			**$8,530,000**
Cost of Standalone Low Priority Bicycle and Pedestrian Projects			**$7,299,000**[b]
TOTAL COST OF ALL COMMUNITY WALKWAYS AND BIKEWAYS			**$32,611,000**
COST OF ALL STANDALONE COMMUNITY WALKWAYS AND BIKEWAYS			**$16,381,000**[b]

* Project costs are accounted for as part of another project (i.e., a roadway extension, roadway widening, safety, or Safe Routes to School project) or are assumed to be completed as frontage improvements of an adjacent development.

[b] The standalone costs include all project costs not account for as part of another project or as a frontage improvement of an adjacent development (see note "a").

[c] A proposed community walkway and bikeway on Willamette Way West was identified on Map 1 of the 2006 Bicycle and Pedestrian Master Plan. However, additional details for the project were not provided in the plan. Therefore, it does not have a project number.

Table 3: Bicycle and Pedestrian Projects (Regional "R" and Local "L" Trails)

Project Location	Project Type	Priority	2011 Cost Estimate
High Priority			
R1- Tonquin Trail (North-South through West Side of Wilsonville); RTP 10092	Shared-Use Path	High	$2,982,000
R3- Boeckman Creek Trail (Canyon Creek Park to Memorial Park)	Shared-Use Path	High	$1,954,000
R4a- Waterfront Trail Improvement (Memorial Park to Boones Ferry Park; Underneath I-5)	Shared-Use Path Improvements	**High (was Medium)**	$51,000
R5- Willamette River Crossing; RTP 10133	Bike/Pedestrian Bridge	High	$15,423,000
R6a- Wiedeman Road Trail—Phase 1 (Canyon Creek Road to Parkway Avenue)	Shared-Use Path	High	$339,000[a]
L10- Park at Merryfield Trail (Camelot Street to Inza Wood Middle School)	Widen and Stripe Trail	High	$48,000
Total Cost of High Priority Trail Projects			**$20,797,000**
Cost of Standalone High Priority Trail Projects			**$20,458,000[b]**
Medium Priority			
R4- Waterfront Trail (Willamette Way East to Memorial Park)	Shared-Use Path	Medium	$1,440,000
R6b- Wiedeman Road Trail—Phase 2 (Parkway Avenue to Tonquin Trail, with I-5 overpass)	Bike and Pedestrian Bridge	Medium	$3,393,000
L5- River Trail (Memorial Park Center Loop Trail)	Natural Trail	Medium	$131,000
L6- Kolbe Homestead Trail (River Trail to Memorial Park Center Loop Trail)	Natural Trail	Medium	$64,000
L7- Klein Homestead Trail (accessed from Kolbe Homestead Trail)	Natural Trail	Medium	$64,000
L14- Frog Pond Loop (Proposed Community Park)	Shared-Use Path	Medium	$289,000[a]
Total Cost of Medium Priority Trail Projects			**$5,381,000**
Cost of Standalone High Priority Trail Projects			**$5,092,000[b]**
Low Priority			
R2- Stafford Spur Trail (Canyon Creek Park to Stafford Road)	Shared-Use Path	Low	$1,645,000
R6c- Wiedeman Road Trail—Phase 3 (Canyon Creek Road to Stafford Spur Trail)	Shared-Use Path	Low	$720,000[a]
L8- Park Access Trail (accessed from Montgomery Way)	Low Volume Roadway	Low	$12,000
L12- Villebois Loop Trail (Villebois Greenway to Tonquin Trail)	Shared-Use Path	Low	$177,000[a]

Table 3 continued on next page.

(Continued) Table 3: Bicycle and Pedestrian Projects (Regional "R" and Local "L" Trails)

Project Location	Project Type	Priority	2011 Cost Estimate
Low Priority (Continued)			
L15- Rivergreen Trail (Tonquin Trail/SW Willamette Way to Waterfront Trail)	Natural Trail	Low	$258,000
Total Cost of Low Priority Trail Projects			**$2,812,000**
Cost of Standalone High Priority Trail Projects			**$1,915,000**[b]
TOTAL COST OF ALL TRAILS			**$28,990,000**
COST OF ALL STANDALONE TRAILS			**$27,465,000**[b]

* Project costs are accounted for as part of another project (i.e., a roadway extension, roadway widening, safety, or Safe Routes to School project) or are assumed to be completed as frontage improvements of an adjacent development.

[b] The standalone costs include all project costs not account for as part of another project or as a frontage improvement of an adjacent development (see note "a").

The prior tables identify high priority pedestrian and bicycle projects. Some of these projects will be constructed in conjunction with roadway improvements or adjacent land development; however, the City should construct the majority of the high priority pedestrian and bicycle improvements independent of roadway projects (unless there are imminent roadway improvements). The specific projects that should be constructed as soon as feasible include the following (with the associated Bicycle and Pedestrian Master Plan project identified in parenthesis):

Community Walkways and Bikeways

- Oregon Institute of Technology (OIT)/Pioneer Pacific College Enhanced Pedestrian Crossing (New improvement)
- Town Center Loop Pedestrian Environment (Project C1)
- Town Center Loop West Shared-Use Path (Project C2)
- Town Center Loop Bike/Pedestrian Bridge over I-5 (Project C4)
- Boeckman Road Bike Lanes and Sidewalks from Parkway Avenue to Canyon Creek Road (Project C7)
- Boeckman Road Bike Lanes and Sidewalks from Canyon Creek Road to Wilsonville Road (Project C9); previously identified as a safety improvement project
- French Prairie Drive Shared-Use Path from County View Lane to Miley Road (Project C13)
- Miley Road Bike Lanes and Sidewalks from I-5 Interchange to east French Prairie Drive (Project C14)[18]
- Water Treatment Plant Shared-Use Path connecting to Wilsonville Road (Project C21)
- Boberg Road Sidewalk Gaps between Boeckman Road and Barber Street (Project C24)
- 95th Avenue Sidewalk Gaps between Boeckman Road and Hillman Court (Project C33)
- Parkway Avenue Bike Lanes and Sidewalks from Xerox Drive to Parkway Center Drive (Project C40); costs accounted for in associated roadway widening project

[18] If possible, the parking area on the south side of Miley Road near Lawnview Circle should be maintained because it is currently used as a common starting location for recreational bike rides.

Regional and Local Trails

- Tonquin Trail through West Wilsonville (Project R1)
- Boeckman Creek Trail from Canyon Creek Park to Memorial Park (Project R3)
- Waterfront Trail Improvements Underneath I-5 from Memorial Park to Boones Ferry Park (Project R4a)
- Willamette River Crossing Bicycle and Pedestrian Bridge (Project R5 and RTP Project 10133)
- Park at Merryfield Trail Widening from Camelot Street to Wood Middle School (Project L10)

These pedestrian and bicycle projects are also shown in Figure 1 and include minor revisions to the project list identified in the prior *Transportation System Gaps and Deficiencies* memorandum.[19] The bicycle and pedestrian projects that are not included in this list but that are associated with a motor vehicle improvement are expected to be funded and constructed along with the associated motor vehicle project. The remaining projects that are neither identified in the above stand-alone list nor associated with a motor vehicle project should be constructed as funding becomes available.

[19] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

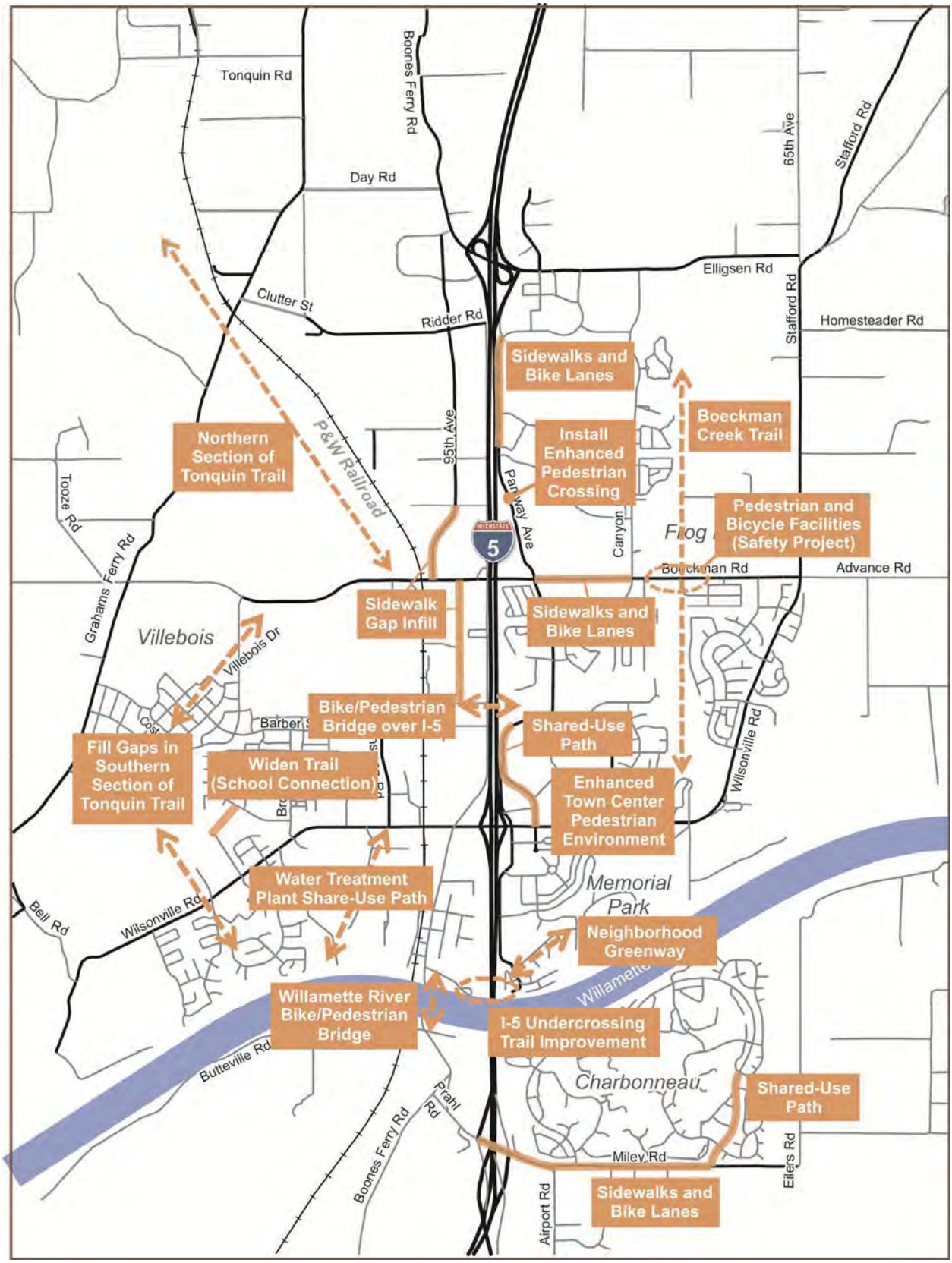


Figure 1: Stand-Alone Bicycle and Pedestrian Projects

Safe Routes to School (SR2S)

As part of the TSP update, the City has been working with the parents and administrators of each of the City's primary and middle schools to prepare Safe Routes to School plans. These plans are intended to reduce school-related traffic demand and provide numerous additional benefits, including improved safety, increased physical activity and related health benefits, increased sense of community, and reductions in transportation-related air pollution. To be successful, these plans will require the coordinated effort and support of school officials, parents, residents, and City of Wilsonville planning and engineering staff.

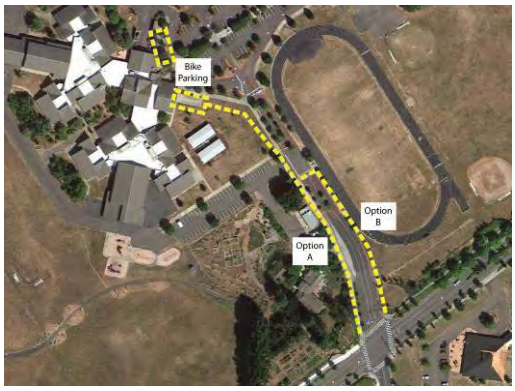
The Safe Routes to School plans will include a combination of education and outreach programs along with supporting pedestrian and bicycle infrastructure improvements. The focus in this memorandum is on the infrastructure improvements that are needed to address the school-related pedestrian and bicycle gaps and deficiencies identified in the prior *Transportation System Gaps and Deficiencies* memorandum.[20] The project details and cost estimates for the infrastructure improvement projects are described in the following tables. The 2006 Bicycle and Pedestrian Master Plan provides standard cross-sections that should be used for the trails.

SR1: Willamette Way East Sidewalks (Safe Routes to School – Boones Ferry Primary)	**Cost Estimate: $50,000**
Improvement	**Information**
	Sidewalk Gaps: • Construct sidewalks along the Eastern edge of Willamette Way E (school entrance, near track area) just north of Wilsonville Road. • Construct missing sidewalk link: Western edge of Willamette Way E, south of Chantilly.

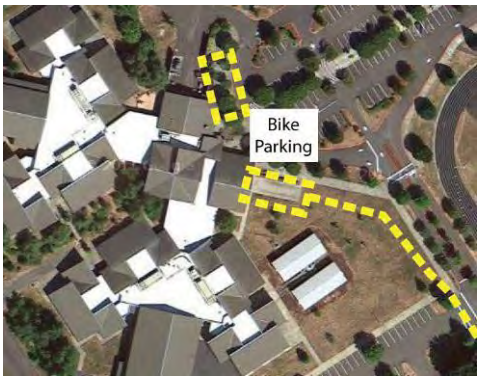
SR2:North Campus Connection (Safe Routes to School – Boones Ferry Primary)	**Cost Estimate: $50,000**
Improvement	**Information**
	Sidewalk Deficiencies: • Construct raised curb along the north fire lane located between Wood Middle School and Boones Ferry Primary • Extend path (10 to 12 feet wide) from Hazelwood (adjacent to Wood Middle School parking lot) with guided route through parking lot to the school.

[20] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

SR3: Boones Ferry Primary Bicycle Access Route (Safe Routes to School – Boones Ferry Primary)	Cost Estimate: $300,000

Improvement	Information
	Bicycle Gaps: • Construct a 10 to 12-foot bike path between the school bicycle parking and Wilsonville Road

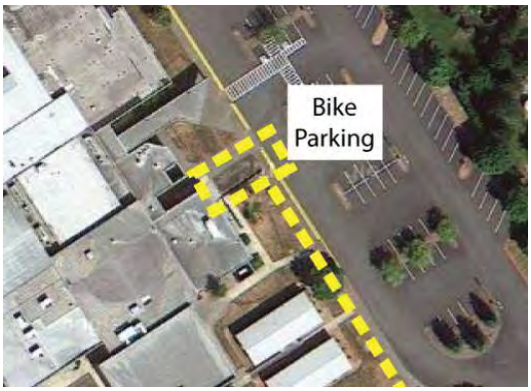
SR4: Boones Ferry Primary Bicycle Parking Shelter (Safe Routes to School – Boones Ferry Primary)	Cost Estimate: $15,000

Improvement	Information
	Bicycle Deficiencies: • Construct a cover over bike parking for weather protection.

SR5: Wood Middle School Bicycle Access Route (Safe Routes to School – Wood Middle School)	Cost Estimate: $300,000

Improvement	Information
	Bicycle Gaps: • Construct a 10 to 12-foot bike path between the school bicycle parking and Wilsonville Road

SR6: Wood Middle School Bicycle Parking Shelter (Safe Routes to School – Wood Middle School)	Cost Estimate: $15,000

Improvement	Information
	Bicycle Deficiencies: • Construct a cover over bike parking for weather protection.

SR7: Boeckman Creek Primary Multi-Use Access Path (Safe Routes to School – Boeckman Creek Primary)	Cost Estimate: $50,000

Improvement	Information
	Sidewalk/Bicycle Deficiencies: • Construct new 10 to 12-foot bike path on the south side of the existing sidewalk that meanders south of the tree line. This path would connect to the existing marked crosswalk.

Transit Improvements

The City's transit service, which is operated by South Metro Area Regional Transit (SMART), plays an important role in providing mobility for residents, employees, and students who travel to, from, and within Wilsonville. It provides an important connection to the region, particularly due to Wilsonville's strong employment base and central location between Portland and Salem.

SMART is a department of the City of Wilsonville and operates several fixed bus routes that serve Wilsonville and make connections to TriMet in Portland, Cherriots in Salem, and Canby Area Transit. The primary transit hub in Wilsonville is the SMART Central transit center, which provides connections to all SMART bus routes, is adjacent to TriMet's Westside Express Service (WES) commuter rail station, and includes a 400-stall park-and-ride lot. SMART also manages various programs, including Dial-a-Ride (curb-to-curb service for elderly and disabled residents) and SMART Options (support services for those who chose another transportation alternative besides driving alone).

In 2008, the City of Wilsonville adopted its Transit Master Plan (TMP), which identifies transit projects and implementation measures throughout Wilsonville. A list of these projects, their current status as of February 2012, and other applicable information were provided previously in the *Transportation System Gaps and Deficiencies* memorandum.[21] Based on the updated assessment of system needs through 2035, this list of projects and implementation measures is in the process of being updated as part of the TSP update. The proposed route maps will also be updated consistent with current SMART routes and anticipated changes.

In addition to revising the 2008 Transit Master Plan projects and implementation measures, the City of Wilsonville would benefit from the following transit strategies:

- **Public Feedback Process:** Develop a process for responding to public feedback regarding transit services, including bus routing and transit stop amenity decisions. This process should address both complaints and additional service requests while allowing an equal opportunity for input from those with opposing viewpoints. It should also give consideration to the needs of youth, seniors, people with disabilities, and environmental justice populations (including minorities and low-income families) due to the greater dependence that these citizens have on transit services for basic mobility.
- **Service Coverage:** Provide transit routes throughout the City so that all residents and businesses who desire transit service are within one-quarter mile walking distance from a transit stop. Service changes should follow the public feedback process that is also being recommended. The current neighborhoods that are outside the one-quarter mile coverage area include the majority of Charbonneau, the southern portion of Willamette Way East, the area south of Memorial Drive, and a small section along Canyon Creek Road south of Boeckman Road.
- **Basic Transit Stop Amenity:** Develop a new transit stop amenity that includes a seat for waiting passengers but does not require the same installation and maintenance cost as a transit shelter. Once a design has been determined, then install this amenity at appropriate transit stops throughout the City as resources are available.
- **Transit Requirements in Development Code and Public Works Standards:** Revise City Code and Public Works Standards to require developers to coordinate with SMART and then to install appropriate transit stop amenities when a stop is located within a Master Plan Area or along the project frontage. Also require convenient pedestrian and bicycle connections between developments and the City's pedestrian and bicycle network, particularly in the vicinity of transit stops.
- **Master Plan Area Transit Requirements:** Revise City Code to require Master Plan Area developers to lay out the internal roadway, pedestrian, and bicycle networks to support the feasibility of transit service and also to provide transit stops and amenities where appropriate. In larger areas, this includes providing a transit-friendly street that accesses a primary transit stop near the center of the Master Plan Area. This primary transit stop should also be conveniently accessible by foot and bike.

[21] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

- **Service Expansion in New Growth Areas:** Expand transit service to new growth areas as development occurs (for example, Coffee Creek, Villebois, and Frog Pond Master Plan Areas) and coordinate new transit routes and associated transit facilities with developers as part of development agreements. In addition, coordinate a service area transfer with TriMet as the City annexes additional areas on its periphery (for example, the Coffee Creek Master Plan Area) so that the SMART service area boundaries align with City limits. RTP Project 11108 identifies new transit service to developments in west Wilsonville.
- **Transit Advisory Board:** Evaluate whether to form a Transit Advisory Board comprised of interested stakeholders, including residents, employees, and employers. Determine what role this board would play and how it would function.
- **Bus Fleet Replacement (with Alternative Fuel Buses):** Update SMART's bus fleet by replacing older buses (previously identified in 2008 TMP and RTP Project 11109). SMART currently operates two compressed natural gas (CNG) buses and should consider additional CNG or other alternative fuel buses whenever it makes a new purchase. SMART should pursue grant funding to assist with bus purchases. Additional bus purchases may be needed to increase the size of the bus fleet if service coverage and/or frequency are increased.
- **Fiber Network:** Connect the new service and operations center to Clackamas County's fiber network once fiber is installed along the roadways between SMART's new facility and where the network currently ends near the I-5/Wilsonville Road interchange. Being connected to the fiber network will allow improved integration with traffic operations.
- **Information Technology:** Improve transit operations by implementing new technologies as they become financially feasible. For example, SMART currently works with a consultant who keeps current SMART schedules and routes up to date on Google Transit, where the transit information integrates with TriMet and can help users plan trips. Areas of additional technological advancement to consider include enhanced integration with regional providers, transit tracking systems (installing GPS units on buses) with electronic time displays at key transit stops, alternative fuel vehicles, social media and other ways to communicate with transit users, and developing additional operational metrics and measures to enhance the understanding of system performance.

Land Use Strategies

For new development areas, the City of Wilsonville currently encourages master plan developments with complementary land uses (i.e., jobs, retail, services, and housing) that support convenient access to nearby destinations for all travel modes. These master plans include bicycle, pedestrian, and transit facilities that are coordinated with the motor vehicle network and the City's nearby transportation system. One example is the Villebois Village Master Plan,[22] which was developed to provide a community that offers many options and choices for those who live, work, and play there. Other master plan areas around the City take a similar approach. The City should continue to support the use of master plan areas.

Street Functional Classifications

The City's street functional classification system is an important tool for managing public roadways pragmatically and cost effectively. It is based on a hierarchical system of roads where higher classification roadways (freeways, expressways, and arterials) are focused on moving traffic, while lower classification roadways (local streets) are focused on providing access to individual parcels (see diagram at right). Collector roadways provide the transition between arterials and local streets and have a balance of access and mobility.

Traditional Functional Classification Hierarchy

Each classification category has associated design standards for access spacing and cross-sections (i.e., number of travel lanes, bike/pedestrian facilities, on-street parking, planter strips, etc.). Therefore, functional classification supports future construction and planning efforts by providing design and connectivity guidance. For example, system connectivity is best structured with incremental steps in classifications so that there is a smooth transition from high access/low mobility roads to low access/high mobility roads. Also, having design standards allows the City to provide clear direction to developers and others who may be constructing roadways within the City.

The City of Wilsonville currently has six functional classes,[23] which are listed in Table 4 along with their related access spacing and cross-section standards. The "spacing" distance that is referenced in the first column of Table 4 is illustrated in the Figure 2 below. A map of existing and planned City roadways and their classifications is available in Figure 4.8 of the currently adopted TSP and is attached in this memorandum's appendix.

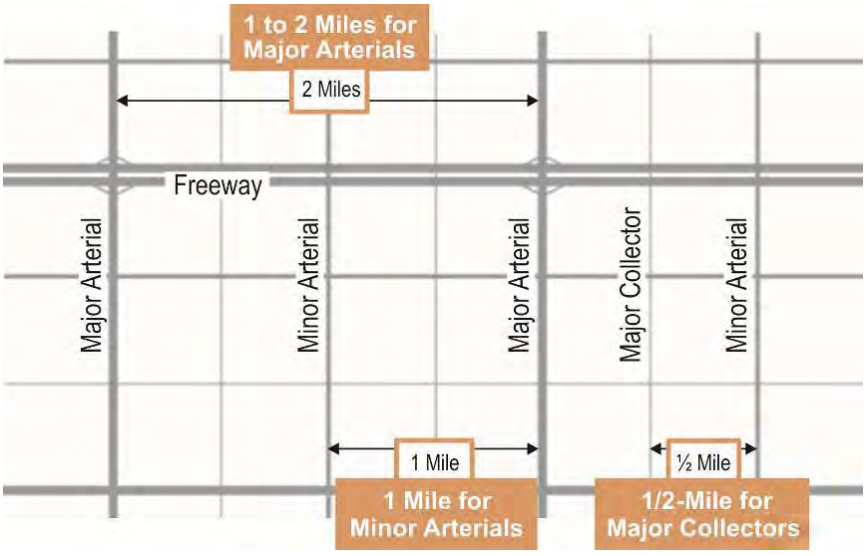


Figure 2: City of Wilsonville Arterial and Collector Street Spacing Guidelines

[22] *Villebois Village Master Plan*, August 2, 2010 (most recent amendment)

[23] City of Wilsonville functional classifications are identified on page 4-47 of the 2003 Transportation System Plan (TSP), with the roadway designations shown in Figure 4.8 on page 4-29.

Table 4: City of Wilsonville's Existing Functional Classifications

Class (Desired Spacing)*	Purpose	Location	Minimum Access Spacing	Cross-Section	Other Features
Major Arterial (1-2 miles)	Serves majority of trips entering and leaving urban areas	Primarily connects I-5 interchanges with major activity centers (i.e., Town Center and Argyle Square) but also includes Stafford Road and Boeckman Rd bridge over I-5	1,000 ft (fully- or partially-controlled access)	2 travel lanes in each direction plus center left-turn lane (can include dual left-turn lanes)	On-street parking not allowed; sidewalks, bike lanes, 8.5 ft planter
Minor Arterial (1 mile)	Focus on mobility around town but still provide access to adjacent land uses	Direct-connection roadways through town (Wilsonville Rd, Elligsen, Boeckman, Canyon Creek Parkway Ave, Grahams Ferry, Miley); usually do not penetrate identifiable neighborhoods	600 ft (primarily to larger developed areas or neighbor-hoods)	1 to 2 travel lanes in each direction plus center left-turn lane	On-street parking not allowed; sidewalks, bike lanes, 8.5 ft planter
Major Collector (1/2 mile)	Connect arterial system to residential, commercial, and industrial areas	Higher use, but indirect roadways around town (95th Ave, Boones Ferry south of Boeckman, Day, Ridder, French Prairie, Brown)	100 ft	1 travel lanes in each direction plus center left-turn lane	Optional on-street parking; sidewalks, bike lanes (where high traffic volumes), 6.5 to 8.5 ft planter (depending on parking)
Minor Collector (1/4 mile)	Connect arterial system to residential	Primarily the higher use residential or lower use industrial roadways (Memorial Dr, Meadows Lp, Barber, Boberg, Boones Ferry north of Boeckman, Kinsman, Clutter, Burns)	50 ft	1 travel lane in each direction (no center left-turn lane)	Optional on-street parking; sidewalks, bike lanes (where high traffic volumes), 6.5 ft planter
Residential Street (Local Street: 300 to 500 ft)	Provide direct access to abutting land uses; through movement discouraged	All roadways in City that are not otherwise classified	Local Street: Permitted to each lot	1 travel lane in each direction (no center left-turn lane and no striping called out for roadway center line)	On-street parking allowed; sidewalks, 4.5 ft planter; 40 ft curb-to-curb if "Transit Street" (otherwise 28-32 ft)
Rural Road	Provide direct access to rural areas	All roadways outside UGB (is a special application only to be used with prior approval from City Planning Dept. and City Engineer)		1 travel lane in each direction (no center left-turn lane and no striping called out for roadway center line)	Soft shoulder with ditch/swale on one side, sidewalk on other side (with parking)

* Desired spacing refers to distance between roadways with same or higher functional classification.

The City would benefit from revising its functional classifications to ensure consistency with existing and desired cross-sections and access spacing standards for City roadways as improvements are constructed and fronting sites develop or redevelop. The following functional classification changes are recommended:

- **Add Neighborhood Collector Classification:** This new classification would convert the existing "Minor Collector with On-street Parking" cross-section into a stand-alone classification rather than it being an option that is currently available for Minor Collector roadways.[24] The only roadways currently using this cross-section standard are the Minor Collectors within the Villebois Master Plan Area. Other future master plan areas may also benefit from the provision of a Neighborhood Collector as the primary roadway connecting residential streets to the City's arterial street network.
- **Recognize Differing Needs for Residential and Industrial/Commercial Streets:** Cross-section standards, City Code requirements, and transportation policies should recognize the differing needs of roadways depending on whether they are located in residential or industrial/commercial areas. This does not mean that a separate set of functional classifications is needed, but City policies, practices, and code language should differ based on adjacent land use type, when necessary.
- **Add Narrow Cross-Section Option for Local Streets:** A narrow cross-section option should be developed for the City consistent with RTFP 3.08.110B.
- **Change Functional Classifications of Existing Roadways:**
  - Grahams Ferry Road (north of Day Road) from a Minor Arterial to a Major Arterial
  - Day Road from a Major Collector to a Major Arterial
  - 95th Avenue (south of Ridder) from a Major Collector to a Minor Arterial
  - Advance Road (east of Stafford Road) to a Minor Arterial (outside City Limits and not previously classified)
  - Barber Street (east of Costa Circle) from a Minor Collector to a Major Collector
  - Barber Street (east of Kinsman Road) from a Minor Collector to a Major Collector
  - Kinsman Road (south of Barber Street) from a Minor Collector to a Major Collector
  - Clutter Street from a Minor Collector to a Major Collector
  - Bailey Street from a Residential Street to a Minor Collector
  - Parkway Avenue (south of Town Center Loop) from a Residential Street to a Minor Collector
  - Costa Circle from a Minor Collector to a Neighborhood Collector
  - Barber Street (west of Costa Circle roundabout) from a Minor Collector to a Neighborhood Collector
  - Boones Ferry Road (Bailey Street to 5th Street) from a Major Collector to a Neighborhood Collector
  - Boones Ferry Road (south of 5th Street) from a Residential Street to a Neighborhood Collector
- **Change Functional Classifications of Planned Roadway Extensions:**
  - Kinsman Road Extension from a Minor Collector to a Major Collector

[24] "Minor Collector with On-street Parking Standards" cross section is identified on Figure 4.17 (page 4-53) of the 2003 Transportation System Plan (TSP).

- Barber Street Extension (Kinsman Road to Montebello Drive) from a Minor Collector to a Major Collector
- Remaining sections of Barber Street and Costa Circle in Villebois Master Plan Area from a Minor Collector to a Neighborhood Collector
- Wiedeman Road Extension (new project) from a Residential Street to a Minor Collector

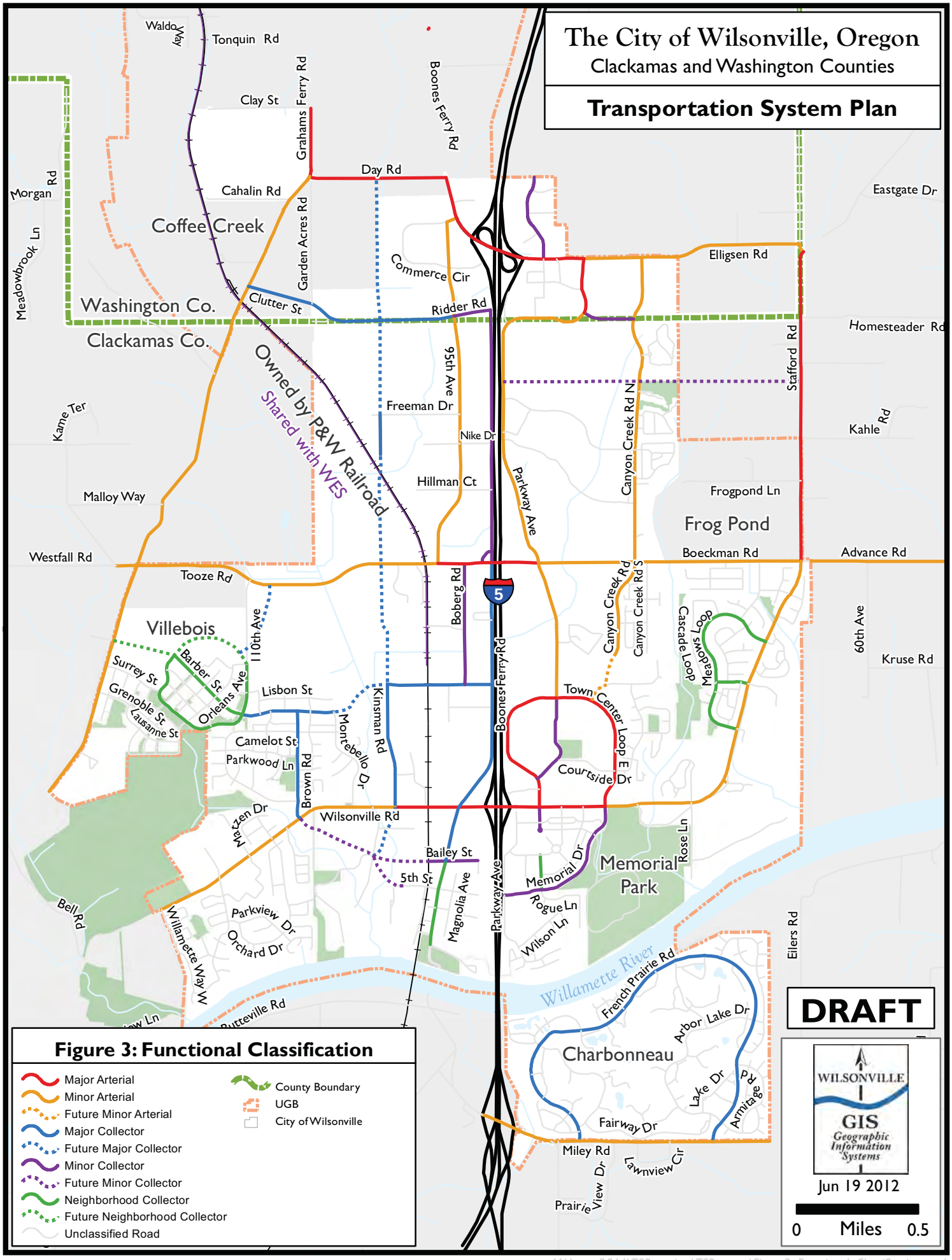
Figure 3 shows the revised functional classification designations of the City's street network. It also provides City designations for the County roadways immediately adjacent to the City to assist City staff in requiring the appropriate roadway right-of-way acquisition and half-street improvements as adjacent land develops.

Access Spacing Standards

The City's functional classifications are also used to determine the minimum access spacing requirements for a given roadway. No changes are needed to the spacing standards, but clarification should be provided on how the spacing standards should be measured.

There are two recommended clarifications to the City's access spacing standards:

- **Collector and Residential Access Spacing between Curbs:** Specify that the spacing is measured between adjacent curb returns on Major Collectors, Minor Collectors, and Local/Residential Streets.
- **Arterial Access Spacing between Centerlines:** Specify that the spacing is measured from centerline to centerline on Major Arterials and Minor Arterials.



M:\Intern2011\TSP_project\TSP_maps\Figure3_Functional_Classification.mxd

Street Design Standards

A key benefit that functional classifications provide to City staff is that they identify the standard cross-sections for each roadway. The applicable cross-section standards for all City streets, except those in the Villebois Master Plan Area, are contained in the current TSP[25] and are reproduced in the appendix. The applicable cross-section standards for Villebois are provided in the Villebois Master Plan Area. All cross-section standards include curbs, planter strips, sidewalks on both sides of the road, and bicycle facilities consistent with the Bicycle and Pedestrian Master Plan.[26] The City's functional classifications and associated roadway travel and turn lanes are listed below:

- **Major Arterials** have two travel lanes in each direction plus turn lanes. In special circumstances, such as near the I-5 interchanges, the Major Arterials may have additional travel lanes and dual turn lanes.
- **Minor Arterials** and **Major Collectors** have one travel lane in each direction plus a center two-way left-turn lane that may be striped as left-turn lane at public intersections.
- **Minor Collectors**, **Neighborhood Collectors**, and **Local Streets** all have one travel lane in each direction and no center turn lanes.

Based on feedback from City staff and a review of Metro Regional Arterial and Throughway Design Concepts,[27] only minor revisions are needed to the cross-section standards.

The City should make the following changes to its cross-section and design standards:

- **Four/Five Lane Major Arterial Cross-Section:** Remove continuous center two-way left-turn lanes (TWLTL) from the Major Arterial cross-section standard to be consistent with the RTP. Major Arterials should be four-lane roadways with either a center left-turn lane or a center median island. Therefore, the full five-lane right-of-way width should be acquired for the entire length of Major Arterial corridors.
- **Additional Right-of-Way for Sidewalk Construction:** Add 0.5 feet of right-of-way to outside edge of sidewalk to accommodate sidewalk formwork and construction.
- **Neighborhood Collector Standard:** Change the name of the "Minor Collector with On-street Parking Standards" cross-section to "Neighborhood Collector Standards".[28]
- **Depth of Asphalt:** Specify in the City's Public Works Standards the depth of asphalt (inches) to be used for roadway paving for different functional classifications due to the expected traffic volumes.

[25] City of Wilsonville functional classifications are identified on page 4-47 of the 2003 Transportation System Plan (TSP), with the roadway designations shown in Figure 4.8 on page 4-29.
[26] *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*, ITE (2010); this report has beneficial guidance for designing pedestrian facilities.
[27] *2035 Regional Transportation Plan*, Metro, June 2010; Table 2.6.
[28] "Minor Collector with On-street Parking Standards" cross section is identified on Figure 4.17 (page 4-53) of the 2003 Transportation System Plan (TSP).

Roadway Widening

Roadway widening is needed on multiple City roadways to either upgrade them to urban design standards or accommodate increased capacity (particularly when adjacent intersections require multiple through lanes). The City's standard practice for preparing for and performing roadway upgrades is to first designate roadway functional classifications based on the desired number of travel lanes and whether there will be a continual center turn lane. Then, as adjacent developments occur or City-led projects are needed, roadway cross-sections are built consistent with the corresponding functional classification cross-section standard. Table 5 lists the City's roadway widening projects along with prior priority (based on the 2003 TSP), evaluation score, and estimated cost. More specific project details, evaluation scores, and cost estimates are described in the tables on the pages that follow. These projects do not include those roadways where future widening is expected to be fully constructed as part of future development.

Table 5: Roadway Widening Project Evaluation

Roadway	Project Type	Prior Priority	Evaluation Score	Cost
Boeckman Rd (Boberg Rd to Parkway Ave) with I-5 Bridge	Road Widening (4/5-Lane)	Long (11-20 yrs)	75	$13,600,000
Parkway Ave 3-Lane Widening (Parkway Center Dr to Xerox Dr)	Road Widening (2/3-Lane)	Long (11-20 yrs)	65	$5,000,000
Tooze Rd (Boeckman Rd to Grahams Ferry Rd)	Road Widening (2/3-Lane)	Short (1-5 yrs)	50	$3,800,000
Boeckman Rd (Stafford Rd to west of Willow Creek Dr)	Road Widening (2/3-Lane)	Short (1-5 yrs)	45	$1,600,000
Stafford Rd (Boeckman Rd to Kahle Rd)	Road Widening (2/3-Lane)	Not previously identified	45	$3,900,000
Day Road(Boones Ferry Rd to Grahams Ferry Rd)	Road Widening (4/5-Lane)	Not previously identified[a]	40	$6,600,000
Grahams Ferry Rd (Day Rd to Tonquin Rd)	Road Widening (4/5-Lane)	Not previously identified[a]	40	$7,000,000
Total Cost of Roadway Widening Projects				**$41,500,000**

[a] These widening improvements may not be needed if Tonquin Road is extended east between Grahams Ferry Road and Boones Ferry Road as part of the Basalt Creek Plan

Boeckman Road 4-Lane Widening (Boberg Road to Parkway Avenue with I-5 Bridge)

Evaluation Score: 75
Cost Estimate: $13.6 M

Advantages/Disadvantages

The improvements would include widening the roadway to four lanes across I-5, with center left-turn lanes at Boberg Street and the Boones Ferry access loop, and with additional turn lanes at the Parkway Avenue intersection. It would also include bike lanes and sidewalks. This improvement is included in the RTP as Project 10132.

Approximately 3,000 additional vehicles per day would use the roadway segment if improvements are constructed, reducing traffic on Elligsen Rd, Wilsonville Rd, and Boones Ferry Road. Traffic volume would increase on Parkway Avenue and 95th Avenue to access the improved segment. Travel time through the corridor would be increased.

Alternative Schematic

Parkway Avenue 3-Lane Widening (Parkway Center Drive to Xerox Drive)

Evaluation Score: 65
Cost Estimate: $5.0 M

Advantages/Disadvantages

Widen to three lanes (including bike lanes and sidewalks), consistent with the cross-section to the north and south.

The improvements would likely be constructed in conjunction with the development of the vacant parcel on the east. The developer would be responsible for the half-street improvements on the east side of Parkway Avenue. There is no development potential on the west side of Parkway Avenue due to the proximity to Interstate-5.

Alternative Schematic

Tooze Road 3-Lane Widening (Boeckman Road to Grahams Ferry Rd)	Evaluation Score: 50 Cost Estimate: $3.8 M

Advantages/Disadvantages

Widen to three lanes (including bike lanes and sidewalks), consistent with the Boeckman Road cross section located immediately to the east. This improvement is included in the RTP as Project 10131.

The improvements would likely be constructed in conjunction with the development of the Villebois Village Master Plan Area to the south. The developer would be responsible for the half-street improvements on the south side of Tooze Road.

Alternative Schematic

Boeckman Road 3-Lane Widening (Stafford Road to west of Willow Creek Drive)	Evaluation Score: 45 Cost Estimate: $1.6 M

Advantages/Disadvantages

Widen to three lanes (including bike lanes and sidewalks). This improvement is part of RTP Project 10156, which includes widening Boeckman Road for the full length between Canyon Creek Road and Stafford Road.

The improvements would likely be constructed in conjunction with the development of the Frog Pond Master Plan Area to the north. The developer would be responsible for the half-street improvements on the north side of Boeckman Road. Existing residential development already exists on the south side of Boeckman Road.

Alternative Schematic

Stafford Road 3-Lane Widening (Boeckman Road to Kahle Road)

Evaluation Score: 45
Cost Estimate: $3.9 M

Advantages/Disadvantages

Widen to three lanes (including bike lanes and sidewalks).

The improvements would likely be constructed in conjunction with the development of the Frog Pond Master Plan Area to the west. The developer would be responsible for the half-street improvements on the west side of Stafford Road. The vacant land on the east side of Stafford Road is currently outside of the Urban Growth Boundary (UGB).

Alternative Schematic

Day Road 4-Lane Widening (Boones Ferry Rd to Grahams Ferry Road)

Evaluation Score: 40
Cost Estimate: $6.6 M

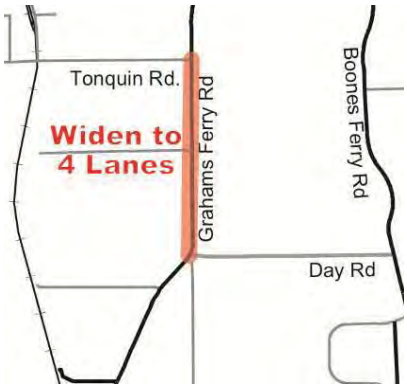
Advantages/Disadvantages

Widen to four lanes with additional left-turn lanes at Boones Ferry Road and Grahams Ferry Road intersections. To accommodate future left-turn lane locations (e.g., Kinsman Road extension), the full five-lane right-of-way width should still be acquired for the full length of the roadway. The improvement shall also include bike lanes and sidewalks.

This widening would likely occur with the development of Coffee Creek Master Plan Area. However, it may not be needed if Tonquin Road is extended east to Boones Ferry Road as part of the Basalt Creek Plan.

Day Road also has a short-term need to be converted to concrete in order to improve the structural integrity of the road and accommodate increased freight traffic to the nearby industrial area (see RTP Project 11243).

Alternative Schematic

Grahams Ferry Road 4-Lane Widening (Day Road to Tonquin Road)	Evaluation Score: 40 Cost Estimate: $7.0 M
Advantages/Disadvantages	**Alternative Schematic**
Widen to four lanes with additional left-turn lanes at Tonquin Road and Day Road intersections. To accommodate future left-turn lane locations, the full five-lane right-of-way width should still be acquired for the full length of the roadway. The improvement shall also include bike lanes and sidewalks. This widening would likely occur with the development of Coffee Creek Master Plan Area. However, it may not be needed if Tonquin Road is extend east between Grahams Ferry Road and Boones Ferry Road as part of the Basalt Creek Plan.	

Freight Routes and Improvements

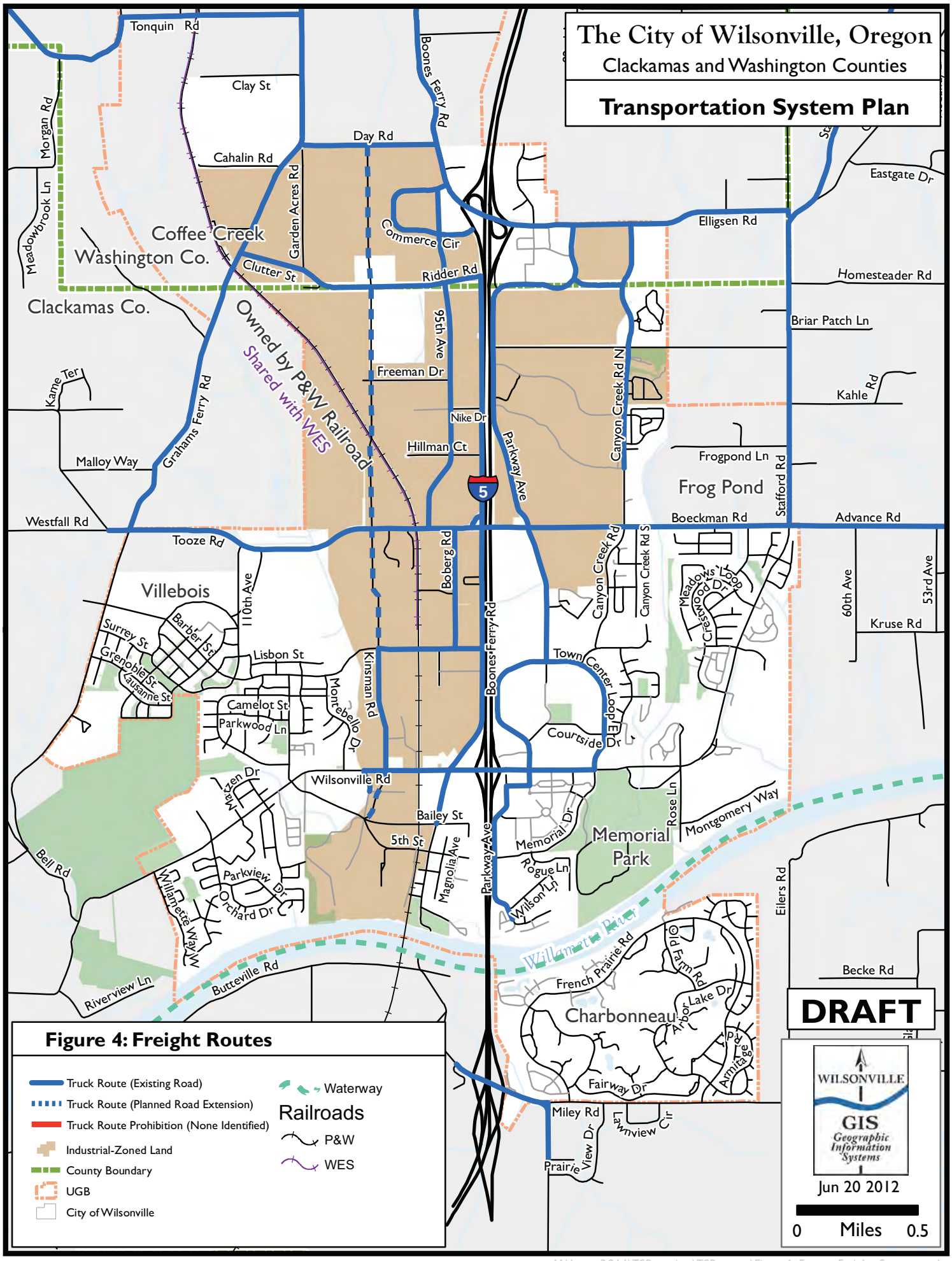
The City of Wilsonville currently does not have its own freight plan or designated freight routes, but has relied on County and Metro designated routes. As a major employment center and industry hub along I-5, the City and its freight community will receive multiple benefits from having its own freight plan with designated freight routes (which include truck routes, railroads, and waterways):

- Improved freight reliability and mobility
- Improved coordination between freight needs and the needs of other system users, particularly bicyclists and pedestrians
- Improved coordination of freight connections and travel with adjacent jurisdictions

Figure 4 identifies the recommended freight routes throughout the City. These routes are intended to connect the City's industrial and commercial sites with I-5 and other regional destinations and facilities. For example, Boones Ferry Road, Grahams Ferry Road, and Tonquin Road provide important truck connections to Washington County, and Stafford Road and Advance Road provide important truck connections to Clackamas County. In addition, the Portland and Western Railroad runs through Wilsonville, and the Willamette River has the potential for handling barge traffic.

The City would benefit from the following freight-related strategies:

- **Roadway and Intersection Improvements:** Consider truck needs for all improvements located on the City's designated truck routes (see Figure 4). Truck needs include but are not limited to turn radii, sight distance, lane widths, turn pocket lengths, and pavement design. In addition, improvements that reduce freight impacts to bicyclists and pedestrians (particularly along identified bikeways and walkways) should be considered, including buffered bike lanes, enhanced pedestrian crossings, and other ideas that improve safety.
- **Roadway Durability:** Update the City's public works standards to specify the use of concrete when constructing roadway improvements on truck routes.
- **Railroad Freight Connections:** Consider ways to support the development of new businesses that ship goods by rail, particularly in available development areas along the Portland and Western Railroad track where railroad sidings can be provided.
- **Willamette River Port:** Explore the designation of a port on the Willamette River to support local businesses in taking advantage of existing and future barged freight.
- **Freight Coordination:** Coordinate with adjacent jurisdictions and the freight community to ensure that regional freight traffic uses the City's freight routes.


The City of Wilsonville, Oregon
Clackamas and Washington Counties
Transportation System Plan
Tonquin Rd
Clay St
Morgan Rd
Meadowbrook Ln
Day Rd
Cahalin Rd
Garden Acres Rd
Boones Ferry Rd
Eastgate Dr
Elligsen Rd
Commerce Cir
Coffee Creek
Washington Co.
Clackamas Co.
Clutter St
Ridder Rd
Homesteader Rd
Briar Patch Ln
Owned by P&W Railroad
Shared with WES
95th Ave
Freeman Dr
Kame Ter
Grahams Ferry Rd
Malloy Way
Nike Dr
Hillman Ct
Parkway Ave
Canyon Creek Rd N
Kahle Rd
Frogpond Ln
Frog Pond
Stafford Rd
5
Westfall Rd
Tooze Rd
Boeckman Rd
Advance Rd
Villebois
110th Ave
Boberg Rd
Canyon Creek Rd
Canyon Creek Rd S
Meadowood Dr
Crestwood Dr
60th Ave
53rd Ave
Kruse Rd
Surrey St
Barber St
Grenoble St
Lausanne St
Lisbon St
Kinsman Rd
Boones Ferry Rd
Town Center Loop E
Camelot St
Parkwood Ln
Montebello Dr
Courtside Dr
Wilsonville Rd
Mazen Dr
Bailey St
5th St
Memorial Dr
Rose Ln
Montgomery Way
Memorial Park
Parkway Ave
Magnolia Ave
Rogue Ln
Wilson Ln
Bell Rd
Parkview Dr
Orchard Dr
Willamette Way W
Willamette River
Eilers Rd
Riverview Ln
Butteville Rd
French Prairie Rd
Old Farm Rd
Becke Rd
Charbonneau
Arbor Lake Dr
Fairway Dr
Armitage Pl
Miley Rd
Lawnview Cir
Prairie View Dr
DRAFT
Figure 4: Freight Routes
Truck Route (Existing Road)
Truck Route (Planned Road Extension)
Truck Route Prohibition (None Identified)
Industrial-Zoned Land
County Boundary
UGB
City of Wilsonville
Waterway
Railroads
P&W
WES
WILSONVILLE
GIS
Geographic Information Systems
Jun 20 2012
0
Miles
0.5
M:\Intern2011\TSP_project\TSP_maps\Figure4_Future_Freight_System.mxd

Roadway Extensions

Roadway extensions are needed throughout the City to fill the street system connectivity gaps documented previously in the *Transportation System Gaps and Deficiencies* memorandum.[29] The City's current Transportation System Plan (TSP) has already identified most of the roadway extension projects, with the exception of Wiedeman Road and Boones Ferry Road.

To understand its specific contributions to the City's roadway network, each roadway extension was evaluated separately and compared to the 2035 Baseline network that was analyzed previously in the *Transportation System Gaps and Deficiencies* memorandum. The roadway extensions were then evaluated using the TSP evaluation criteria documented in the prior *Goals and Evaluation Criteria* memorandum.[30] Table 6 lists the roadway extensions along with prior priority (based on the 2003 TSP), evaluation score, and estimated planning level cost. More specific project details, evaluation scores, and cost estimates are described in the tables on the pages that follow.

Table 6: Roadway Extension Project Evaluation

Roadway	Project Type	Prior Priority	Evaluation Score	Cost Estimate
Barber St (Montebello Dr to Kinsman Rd)	Road Extension	Short (1-5 yrs)	70	$7,300,000
Kinsman Rd (Barber St to Boeckman Rd)	Road Extension	Short (1-5 yrs)	70	$4,300,000
Kinsman Rd (Ridder Rd to Day Rd)	Road Extension	Short (1-5 yrs)	60	$6,500,000
Canyon Creek Rd (to Town Center Loop/Vlahos Dr)	Road Extension	Short (1-5 yrs)	60	$3,500,000
Brown Rd (to Boones Ferry Rd) – Bailey St or 5th St Connection[a]	Road Extension	Short (1-5 yrs)	45 to 55	$15,200,000[a]
Kinsman Rd (Boeckman Rd to Ridder Rd)	Road Extension	Short (1-5 yrs)	45	$12,000,000
Wiedeman Rd (Parkway Ave to Canyon Creek Rd)	Road Extension	Not previously identified	40	$4,300,000
Boones Ferry Rd (Commerce Circle to Ridder Rd)	Road Extension	Not previously identified	30	$2,100,000
Wiedeman Rd (Canyon Creek Rd to Stafford Rd)	Road Extension	Not previously identified	25	$8,800,000
Total Cost of Roadway Extension Projects[a]				**$64,000,000**

[a] The Brown Road extension could connect to Boones Ferry Road at either Bailey Street or 5th Street. The cost estimate that is provided is for the higher of the two options.

[29] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

[30] *Wilsonville Transportation System Plan Update – Goals and Evaluation Criteria (Task 2.3)*, technical memorandum #3 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, April 11, 2012 (Draft).

Barber Street Extension (Montebello Drive to Kinsman Road)

Evaluation Score: 70
Cost Estimate: $7.3 M

Advantages/Disadvantages

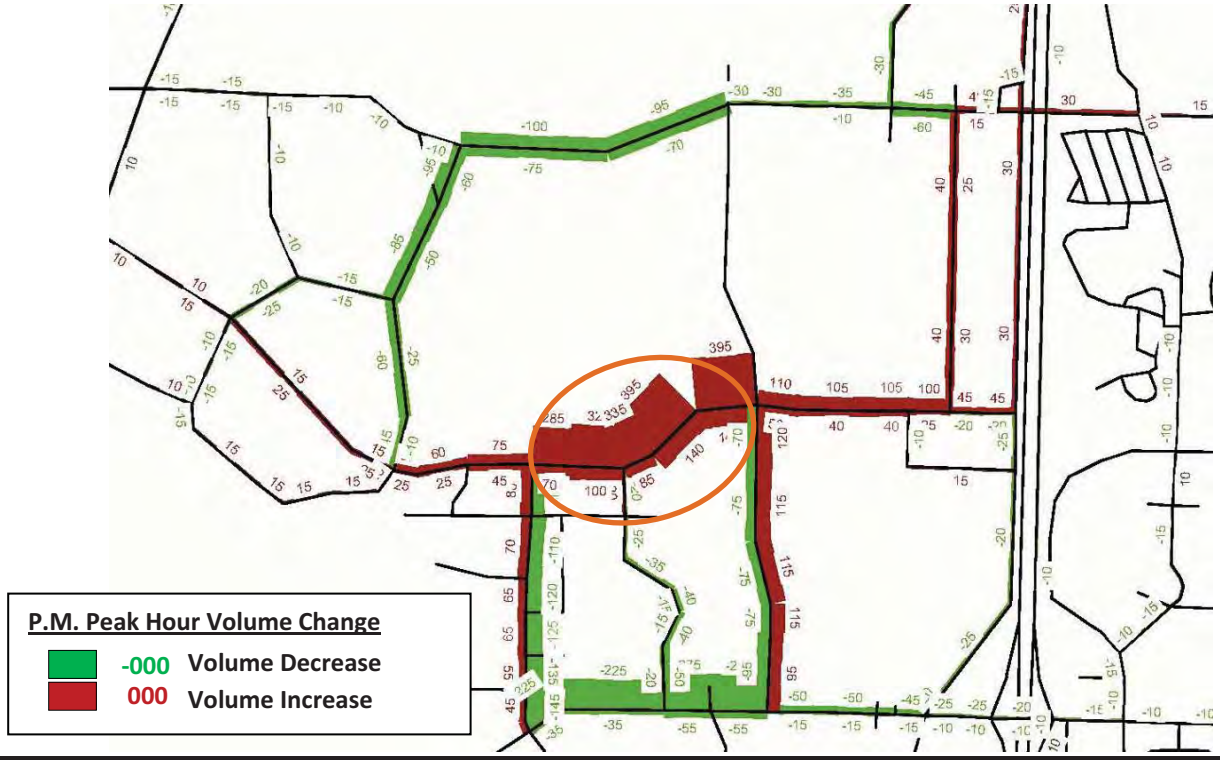
Connecting Barber Street between Villebois and Kinsman Road would improve connectivity and access in western Wilsonville. It would create more direct connections for Villebois and provide an additional east/west roadway between Boeckman Road and Wilsonville Road.

If constructed, approximately 350-550 vehicles would use the Barber Street Extension. These would primarily be local trips to/from Villebois and the nearby areas. The extension would reduce traffic on Boeckman Road, 124th Avenue, and Wilsonville. Brown Road and Montebello Drive would see decreases in traffic as well. Traffic volumes along Boberg Road and Kinsman Road would increase, to access the Barber Street Extension.

The project was included in future Baseline. It is also included in the RTP as Project 10153. Bike lanes and sidewalks shall be constructed with the roadway.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Kinsman Road Extension (Barber Street to Boeckman Road)

Evaluation Score: 70
Cost Estimate: $4.3 M

Advantages/Disadvantages

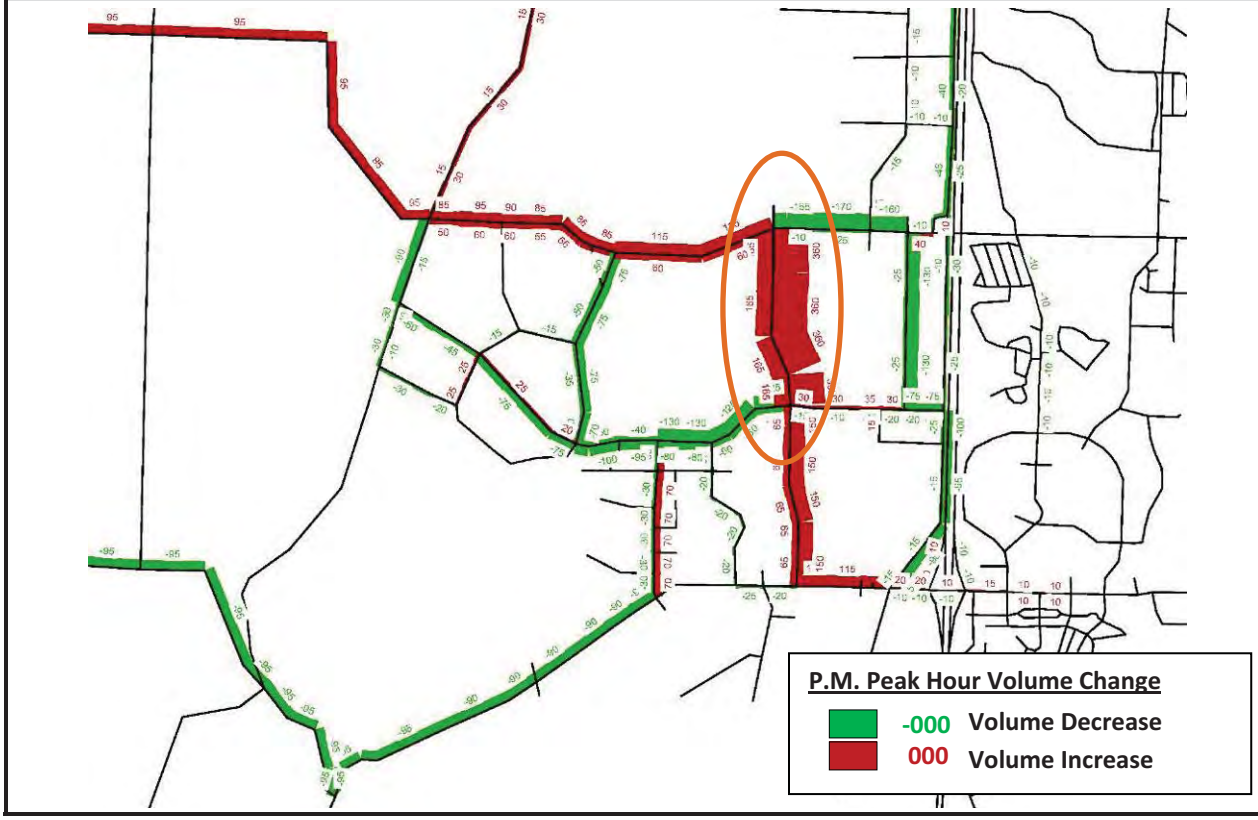
Extending the southern portion of Kinsman Road north to Boeckman would improve connectivity and access in western Wilsonville. It would create more direct connections to the Wilsonville WES station and provide an additional north/south roadway between Grahams Ferry Road and Boones Ferry Road.

The extension would reduce traffic through Villebois (on Barber Street and 110th Avenue) and on Boones Ferry Road and Boberg Road (south of Boeckman Road). If constructed, traffic would increase on Boeckman Road to access the extension. The extension would shift up to 2,000 vehicles per day away from these roadways.

The project was included in future Baseline. It is also included in the RTP as Project 10130. Bike lanes and sidewalks shall be constructed with the roadway.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Kinsman Road Extension (Ridder Road to Day Road)

Evaluation Score: 60
Cost Estimate: $6.5 M

Advantages/Disadvantages

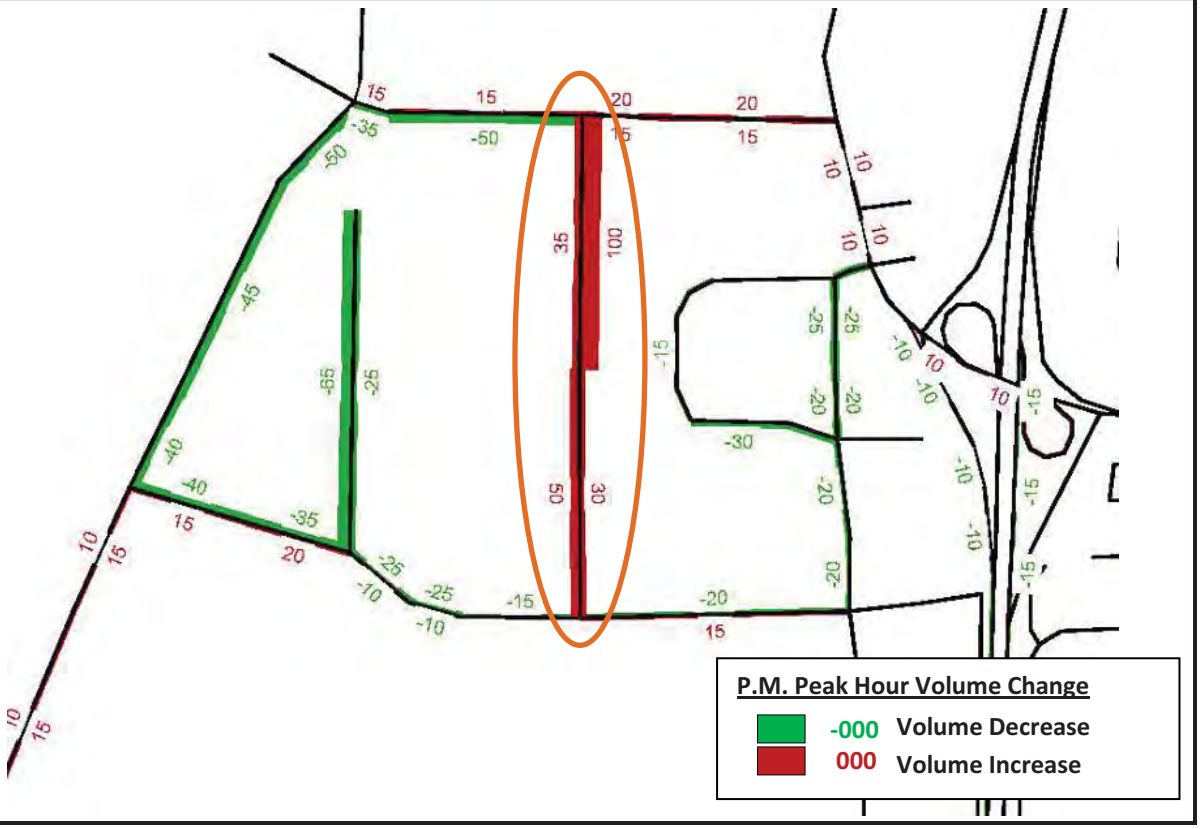
A new roadway along the Kinsman Road alignment would improve access and circulation in northwest Wilsonville.

The overall impact is relatively small and limited to local access trips. The extension would provide more direct connections for local traffic, removing up to 500 vehicles per day from Grahams Ferry Road. and 95th Avenue.

The project was included in future Baseline. It is also included in the RTP as Project 10853. Bike lanes and sidewalks shall be constructed with the roadway.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Canyon Creek Road Extension (to Town Center Loop/Vlahos Drive)

Evaluation Score: 60
Cost Estimate: $3.5 M

Advantages/Disadvantages

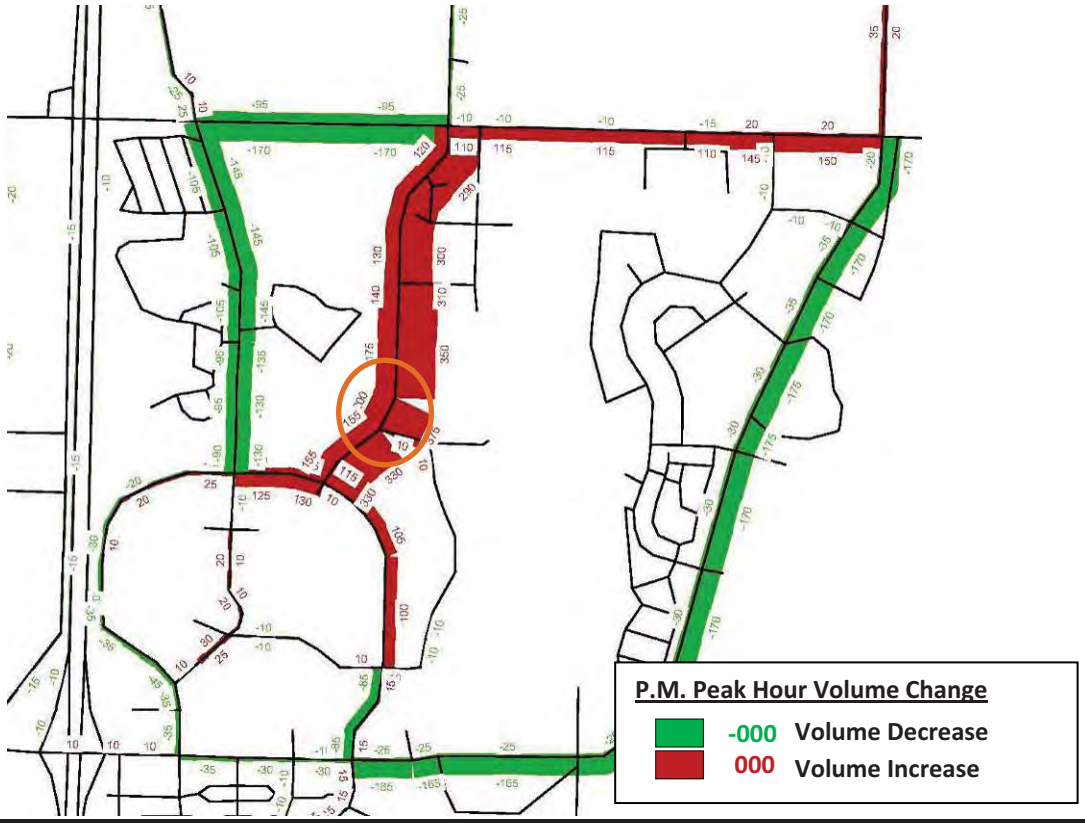
The extension would complete the short gap between the end of Canyon Creek Road and Vlahos Drive to improve connectivity in east Wilsonville. The extension would attract a significant volume of between 2,000-5,000 vehicles per day, reducing demand primarily on Parkway Avenue (north of Town Center Loop) and also on Wilsonville Road.

The project assumes reconstruction of Vlahos Drive as a "T-intersection" (i.e., through movements from/to Town Center Loop would travel north/south via Canyon Creek Road, while traffic to/from Vlahos Drive would turn).

The project was included in future Baseline. Bike lanes and sidewalks shall be constructed with the roadway.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Brown Road Extension (to Boones Ferry Road) – Bailey Street or 5th Street Connection

Evaluation Score: 45 to 55
Cost Estimate: $13.5 M to $15.2 M

Advantages/Disadvantages

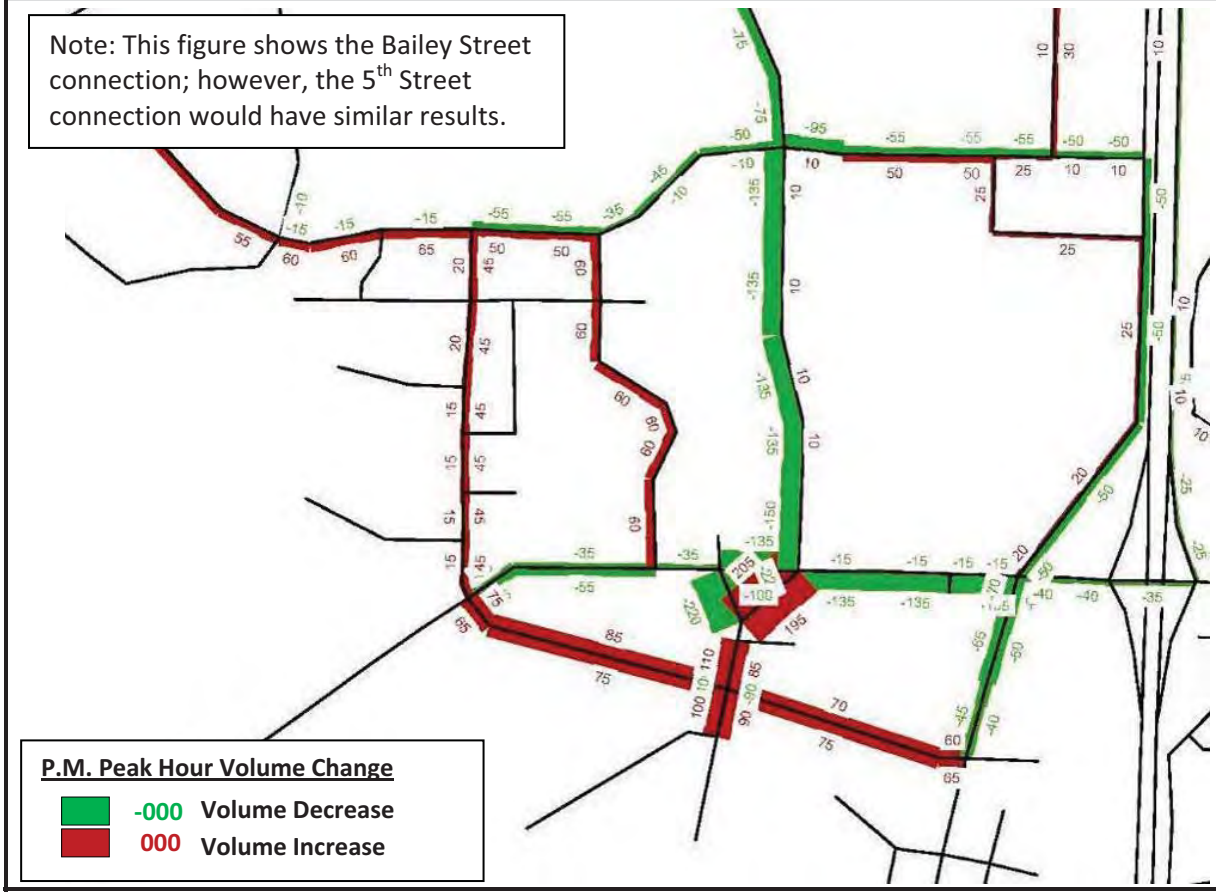
The Brown Road Extension would provide improved connectivity south of Wilsonville Road and would connect to Boones Ferry Road at either Bailey Street or 5th Street. The City of Wilsonville currently has an existing railroad crossing at 5th Street, which would have to be closed in order for the railroad to approve a new crossing at Bailey Street. Therefore, only one of the connections to Boones Ferry Road could be provided. The new roadway extension would include a new connection to Kinsman Road. Bike lanes and sidewalks shall be constructed with the roadway.

As a result of the project, a more direct travel alternative would remove 1,000-2,000 local access vehicles per day from Wilsonville Road.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)

Note: This figure shows the Bailey Street connection; however, the 5th Street connection would have similar results.



Kinsman Road Extension (Boeckman Road to Ridder Road)

Evaluation Score: 45
Cost Estimate: $12.0 M*

Advantages/Disadvantages

Building this segment of Kinsman Road could connect the two other proposed extensions to result in a continuous route between Wilsonville Road and Day Road. The extension would result in reduced vehicle demand on Grahams Ferry Road, 95th Avenue and Boones Ferry. Demand would increase on the south segment of the Kinsmen Extension (south of Boeckman Road), Barber Street, and Ridder Road (west of Kinsman Road). Travel demand model results indicate 2,500-3,500 vehicles per day would use the extension.

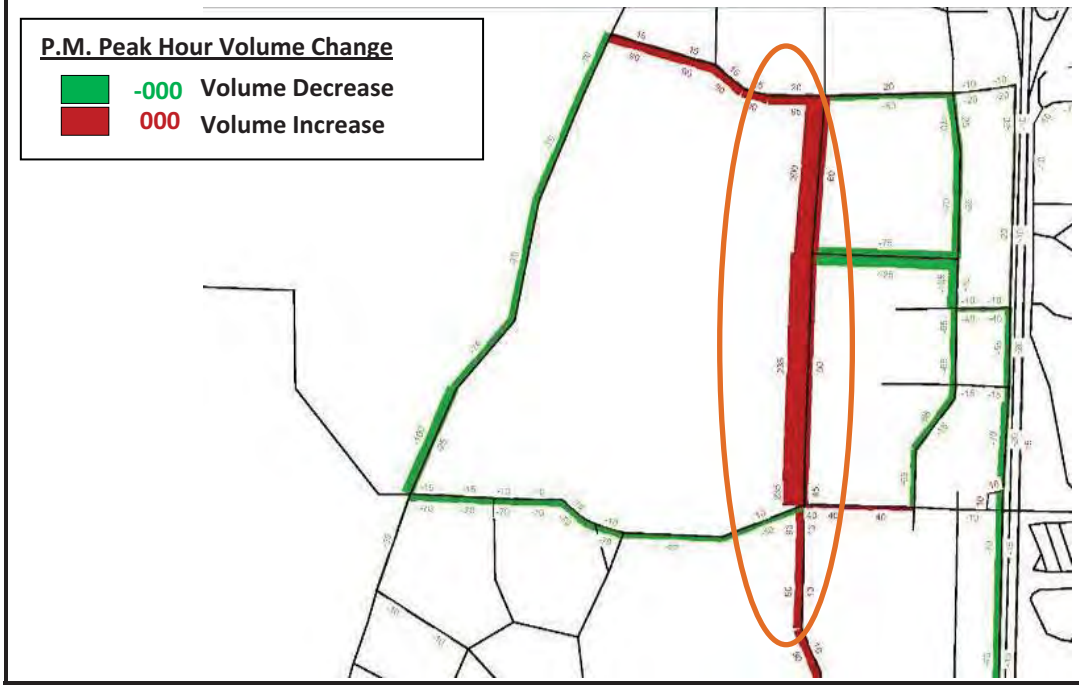
Proposed alignment must consider environmental impacts (to Coffee Lake Wetlands) and a new railroad crossing.

The project was NOT included in future Baseline. Bike lanes and sidewalks shall be constructed with the roadway.

*Assumes a $7.0 M grade separated crossing. If at-grade crossing can be achieved, intersection price would drop from $7.0 M to $1.5 M

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Wiedeman Road Extension – West Connection (Parkway Avenue to Canyon Creek Road)

Evaluation Score: 40
Cost Estimate: $4.3 M

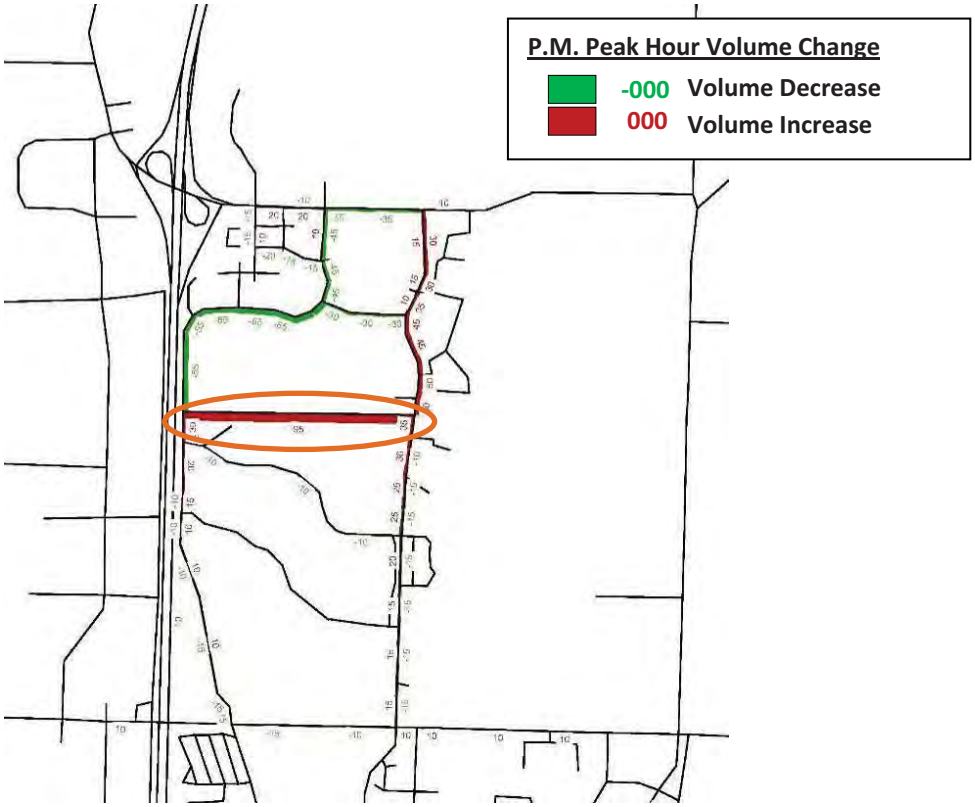
Advantages/Disadvantages

The western portion of the proposed Wiedeman Road extension would provide a more direct connection between Canyon Creek Road and Parkway Avenue south of Parkway Center Drive. The extension would primarily affect local access traffic. Construction of the extension may shift approximately 500 vehicles per day from Parkway Avenue to Canyon Creek (north of the proposed extension).

The project was NOT included in future Baseline. Bike lanes and sidewalks shall be constructed with the roadway. In addition, the Bicycle and Pedestrian Master Plan identifies a regional trail (portion of Project R6a) that should be constructed along the north side of the road (trail cost not included in roadway cost estimate).

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Boones Ferry Road Extension (Commerce Circle to Ridder Road)

Evaluation Score: 30
Cost Estimate: $2.1 M

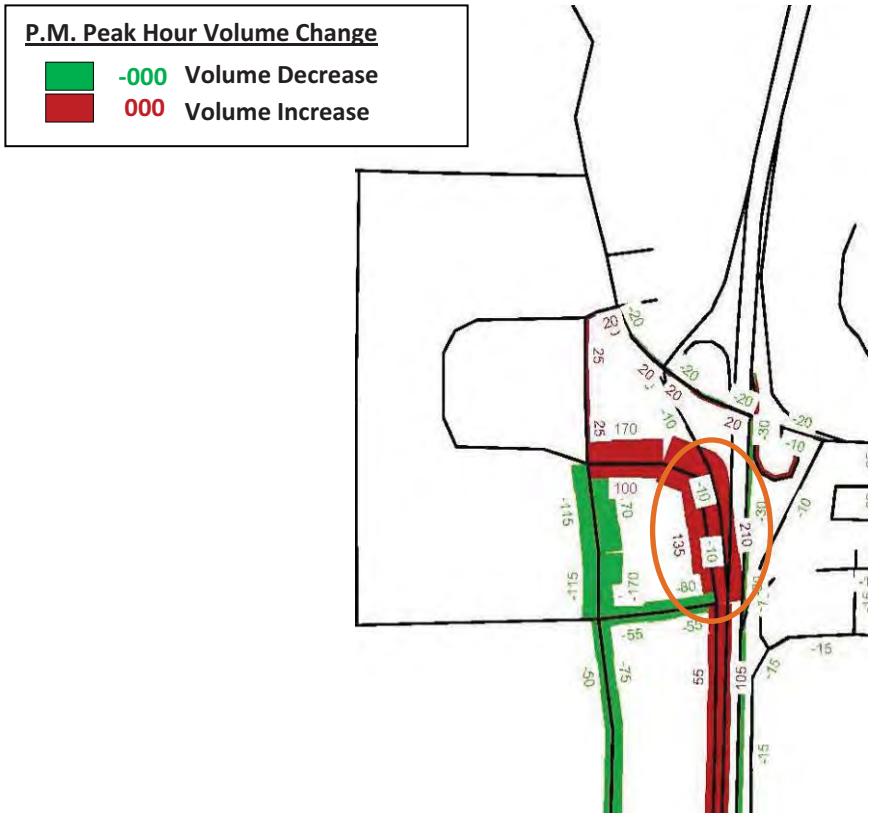
Advantages/Disadvantages

The extension would improve roadway connectivity in northwest Wilsonville. Access and circulation would be improved in the area surrounding Ridder Road and 95th Avenue. Approximately 250-350 additional vehicles would use Boones Ferry Road, north of Boeckman Road. Traffic would shift primarily from 95th Avenue, but also 25-50 vehicles from I-5.

The project was NOT included in future Baseline. Bike lanes and sidewalks shall be constructed with the roadway.

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Wiedeman Road Extension – East Connection (Canyon Creek Road to Stafford Road)

Evaluation Score: 25
Cost Estimate: $8.8 M

Advantages/Disadvantages

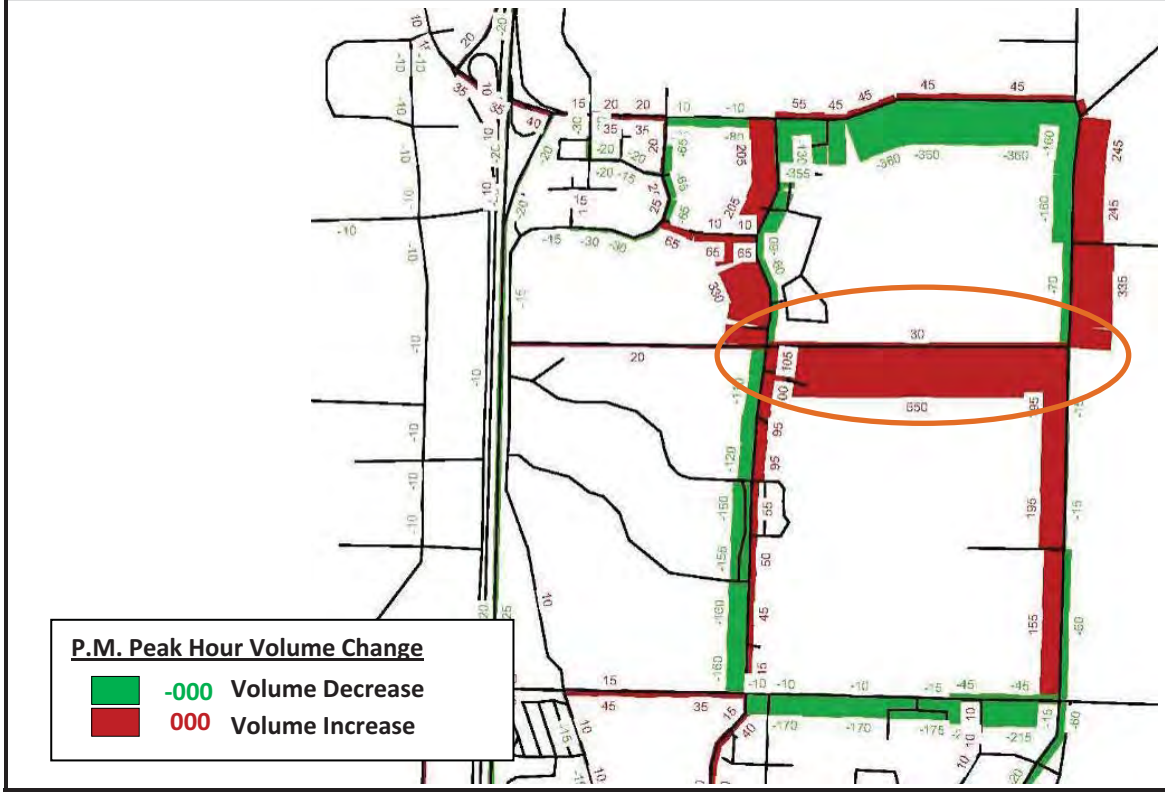
Roadway network connectivity in Northeast Wilsonville would be significantly improved with construction of the full Wiedeman Road extension (assuming both the east and west connections are constructed). The east extension demonstrates significant potential to shift traffic away Boeckman Road and Elligsen Road, east of Canyon Creek Road.

Approximately 6,000-9,000 vehicles per day would use the extension, with volume being somewhat sensitive to improvements made at the congested intersection at Stafford Road/Wilsonville Road/Boeckman Road.

The project was NOT included in future Baseline. Bike lanes and sidewalks shall be constructed with the roadway. The Bicycle and Pedestrian Master Plan identifies a regional trail (portion of Project R6a) that should be constructed along the north side of the road (trail cost not included in roadway cost estimate).

Alternative Schematic

System Circulation Changes Due to Roadway Extension (2035 P.M. Peak Hour)



Intersection Improvements

There are multiple intersections throughout the City where improvements are needed in order to meet applicable operating standards through the year 2035. These intersections are documented previously in the *Transportation System Gaps and Deficiencies* memorandum.[31] The City's current Transportation System Plan (TSP) already identified improvement project at most of these intersections. However, improvement needs were reevaluated to determine expected project changes.

To understand the specific contributions that the intersection improvements provide to the City's roadway network, each improvement was evaluated using the TSP evaluation criteria documented in the prior *Goals and Evaluation Criteria* memorandum.[32] Planning level cost estimates were also prepared. Table 7 lists the intersection improvements along with the evaluation score and estimated cost.

Table 7: Intersection Improvement Project Evaluation

Intersection (Reference Number)	Project Type	Evaluation Score	Cost
(5) Boones Ferry Rd/95th Ave	Intersection Improvements	90	$1,400,000
(1A) Boeckman Rd/Kinsman Rd	Intersection Improvements	65	[a]
(3) Grahams Ferry Rd/Clutter Rd	Intersection Improvements	65	$500,000[b]
(32) Miley Rd/I-5 SB Ramps	Intersection Improvements	55	$750,000
(34) Miley Rd/NE Airport Rd	Intersection Improvements	55	$750,000
(1) Grahams Ferry Rd/Tonquin Rd	Intersection Improvements	50	$250,000[b]
(2) Grahams Ferry Rd/Day Rd	Intersection Improvements	50	$250,000[b]
(4) Boones Ferry Rd/Day Rd	Intersection Improvements	50	$750,000[b]
(13) Boeckman Rd/Villebois Dr	Intersection Improvements	50	$500,000
(11) Stafford Rd/65th Ave	Intersection Improvements	50	$1,500,000
(17) Boeckman Rd/Parkway Ave	Intersection Improvements	45	$900,000[b]
(19) Boeckman Rd/Stafford Rd	Intersection Improvements	40	$1,000,000[b]
(15) Boeckman Rd/Boberg Rd	Intersection Improvements	40	$250,000[b]
(23) Town Center Lp/Vlahos Dr	Intersection Improvements	35	$250,000[b]
(12) Grahams Ferry Rd/Tooze Rd	Intersection Improvements	30	$1,000,000[b]
(29) Wilsonville Rd/Town Center Lp W	Intersection Improvements	30	$400,000

Table 7 continued on next page.

[31] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, technical memorandum #6 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, February 9, 2012.

[32] *Wilsonville Transportation System Plan Update – Goals and Evaluation Criteria (Task 2.3)*, technical memorandum #3 prepared by DKS Associates for the Wilsonville Transportation System Plan Update, April 11, 2012 (Draft).

(Continued) Table 7: Intersection Improvement Project Evaluation

Intersection (Number)	Project Type	Evaluation Score	Cost
(18) Boeckman Rd/Canyon Cr Rd	Intersection Improvements	25	$250,000[b]
(16) Boeckman Rd/Boones Ferry Rd Access Lp	Intersection Improvements	N/A[c]	[a]
Total Cost of Intersection Improvement Projects			**$10,700,000**

[a] Intersection improvement cost already included in a corresponding roadway improvement project.
[b] Project costs only account for the additional intersection improvements that would be needed in conjunction with the associated roadway extension, roadway widening, or safety project. Some of these intersection improvement projects may be constructed separately from (or as a separate phase of) adjacent roadway improvement projects; however, the intersection improvements would incur additional costs that are currently accounted for in the other projects.
[c] Boeckman Road/Boones Ferry Road Access Loop intersection improvements were not scored because they include basic improvements that would be built as part of the Boeckman Road widening between Boberg Road and Parkway Avenue.

More specific project details for each intersection improvement are described in the tables on the pages that follow. Each page corresponds with a separate intersection improvement. Operations analysis was not performed at this time for these intersections but will be performed as part of the preferred solutions package. At that time, project refinement may be performed based on potential traffic rerouting on the improved transportation system network.

As a solutions package is prepared for the entire transportation system, it is important to consider the impact that each of these intersection improvement projects would have on the bicycle, pedestrian, and transit network. For example, double turn lanes often are accompanied by the removal of the conflicting crosswalk to improve motor vehicle efficiency of the turn movement. Double turn lanes also impact the ease with which bicyclists are able to perform their needed turn movements. In addition, whenever lanes are added to an intersection approach, the crosswalk becomes longer and requires additional crossing time and exposure for pedestrians. It is important for the system to have a balanced approach that considers bicycle, pedestrian, transit, freight, and other motor vehicle needs as appropriate. This does not mean that every location will be the same, but instead the system planning process should identify locations where added preference may be more appropriate to give to one mode over another.

(5) Boones Ferry Road/95th Avenue Intersection Improvements

Evaluation Score: 90
Cost Estimate: $1.4 M

Background Information

Jurisdiction: Oregon Department of Transportation

Improvement Need: Approach capacity and queue storage (in addition to Boones Ferry Road expansion); Metro RTP Mobility Corridor #3 identifies intersection spacing issue that causes delay on Boones Ferry Road

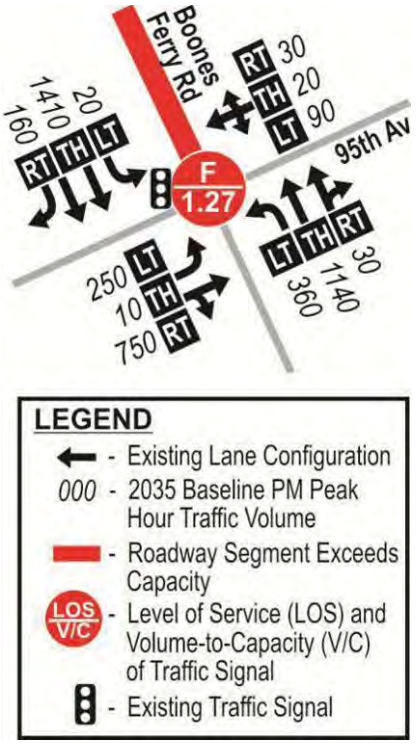
Previously Identified Improvement Projects to Reconsider: Add NB right-turn lane (dual rights), EB through pocket, and SB left-turn lane) (TSP Project S-11). Add EB right-turn lane (dual rights), WB left-turn lane, and NB left-turn lane (dual lefts) with associated widening of 95th Avenue; also install median on 95th Avenue to modify the Commerce Circle approach to right-in/right-out movements (see TSP Project S-22) (Coffee Creek Master Plan). Construct dual left-turn and right-turn lanes; improve signal synchronization, access management, and sight-distance (RTP Project 10852)

Applicable Standards: V/C ≤ 0.99

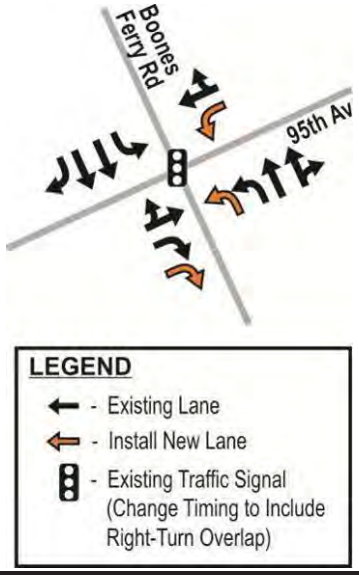
Existing Operations: LOS D, 0.74 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

This project is funded and was recently bid. Construction will be under way in 2012.

(1A) Boeckman Road/Kinsman Road Intersection Improvements

Evaluation Score: 65
Cost Estimate: $0.0 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic Control Upgrade

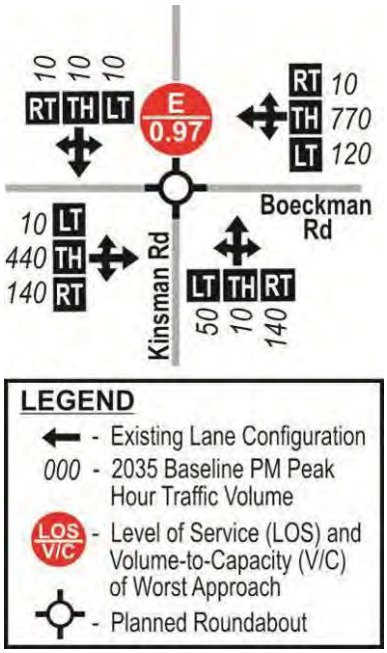
Previously Identified Improvement Projects to Reconsider: Kinsman Extension project identified a new roundabout needed.

Applicable Standards: LOS D

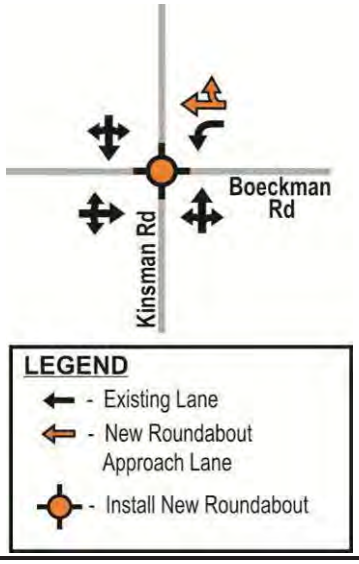
Existing Operations: LOS A, 0.41 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

A traffic signal is not an option due to overhead BPA power lines. If a single-lane roundabout is initially constructed, then a westbound slip lane may be needed to meet future 2035 operations.

*Cost for this roundabout is included in the Kinsman Road Extension project

(3) Grahams Ferry Road/Clutter Road Intersection Improvements

Evaluation Score: 65
Cost Estimate: $0.5 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic control upgrade and approach capacity expansion

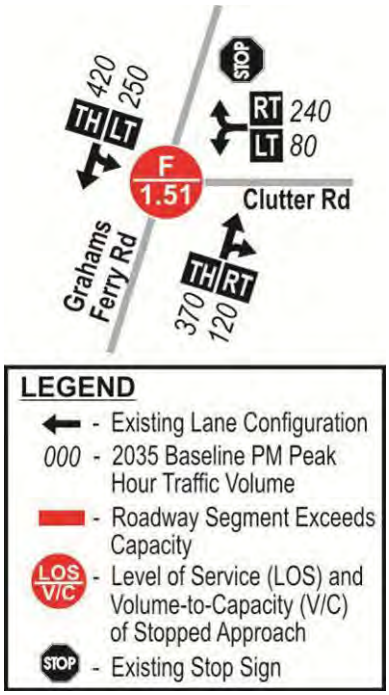
Previously Identified Improvement Projects to Reconsider: Add WB and SB left-turn lanes and install signal; realign Clutter Road approximately 500 feet to the north (Coffee Creek Master Plan Projects T-5, T-6, and T-7)

Applicable Standards: LOS D

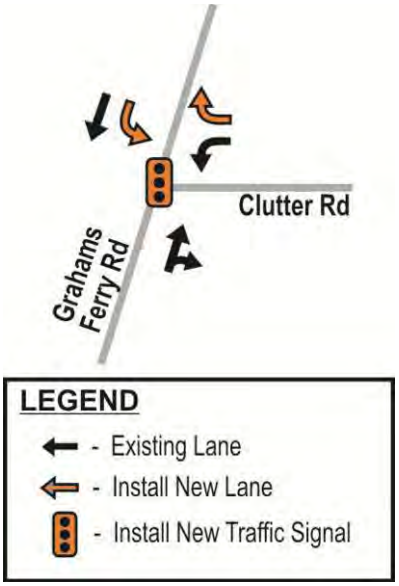
Existing Operations: LOS A/B, 0.31 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

See Grahams Ferry/Clutter Road intersection safety project, which identifies a roadway realignment due to sight distance concerns.

*Includes traffic signal only. Intersection widening is covered under the appropriate roadway widening project.

(32) Miley Road/I-5 SB Ramps Intersection Improvements

Evaluation Score: 55
Cost Estimate: $0.75 M

Background Information

Jurisdiction: ODOT

Improvement Need: Traffic control upgrade and/or approach capacity

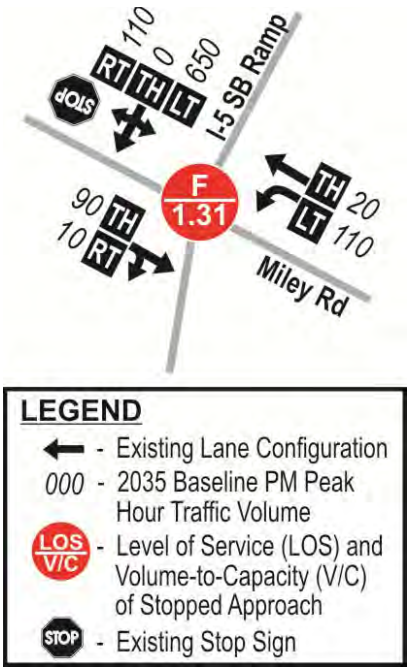
Previously Identified Improvement Projects to Reconsider: Add SB left-turn lane and install signal; also adjust lane geometry consistent with widening Miley Road to four-lanes (see TSP Project W-11) (TSP Project S-19)

Applicable Standards: V/C ≤ 0.85

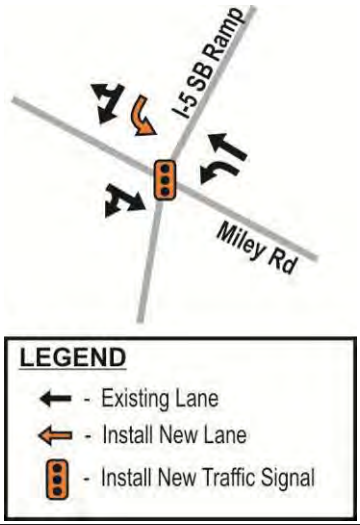
Existing Operations: LOS A/D, 0.86 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Traffic signal warrants are likely trigger for improvement needs. Before a signal can be installed, the intersection must meet signal warrants and be approved by the State Traffic Engineer.

(34) Miley Road/NE Airport Road Intersection Improvements

Evaluation Score: 55
Cost Estimate: $0.75 M

Background Information

Jurisdiction: Clackamas County

Improvement Need: Traffic control upgrade

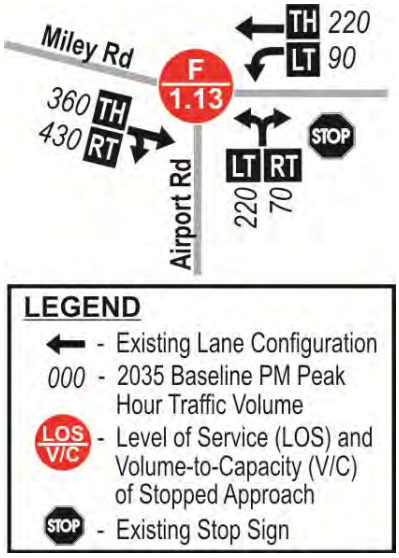
Previously Identified Improvement Projects to Reconsider: Install signal; adjust lane geometry consistent with widening Miley Road to four-lanes (see TSP Project W-11) (TSP Project S-34)

Applicable Standards: LOS D

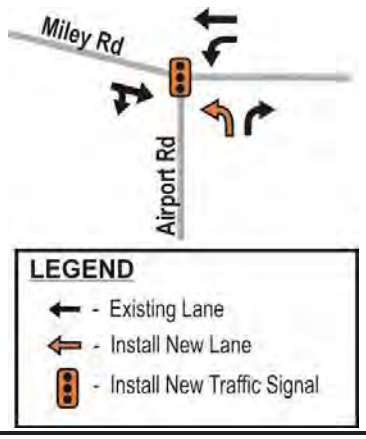
Existing Operations: LOS A/E, 0.70 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Traffic signal warrants are likely trigger for improvement needs

(1) Grahams Ferry Road/Tonquin Road Intersection Improvements

Evaluation Score: 50
Cost Estimate: $0.25 M*

Background Information

Jurisdiction: Washington County

Improvement Need: Traffic control upgrade and additional approach capacity

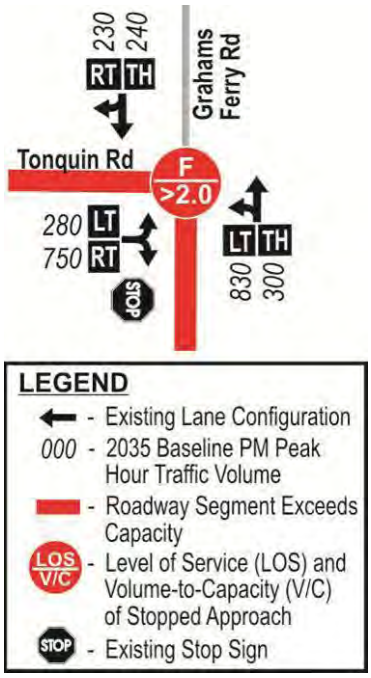
Previously Identified Improvement Projects to Reconsider: Add eastbound and northbound left-turn lanes and install traffic signal (Coffee Creek Master Plan Projects T-10, T-11, and T-12)

Applicable Standard: V/C ≤ 0.99

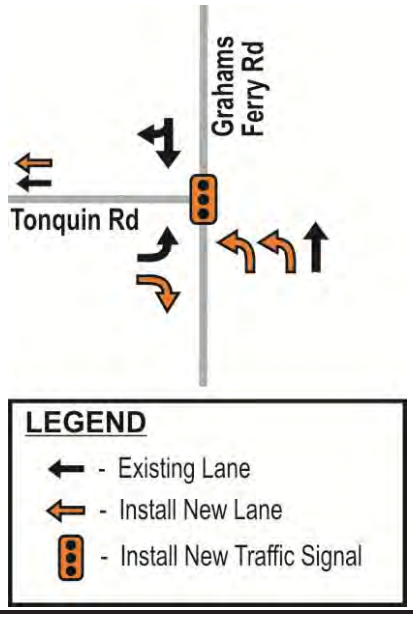
Existing Operations: LOS A/D, 0.70 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Dual Northbound Left Turns (included in Grahams Ferry Widening Project) will require two westbound receiving lanes at the intersection.

See Grahams Ferry (5-lane) and Tonquin roadway widening projects for south and west legs.

*Includes traffic signal only. Intersection widening is covered under the appropriate roadway widening project.

(2) Grahams Ferry Road/Day Road Intersection Improvements

Evaluation Score: 50
Cost Estimate: $0.25 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Approach capacity (in addition to Day Road expansion)

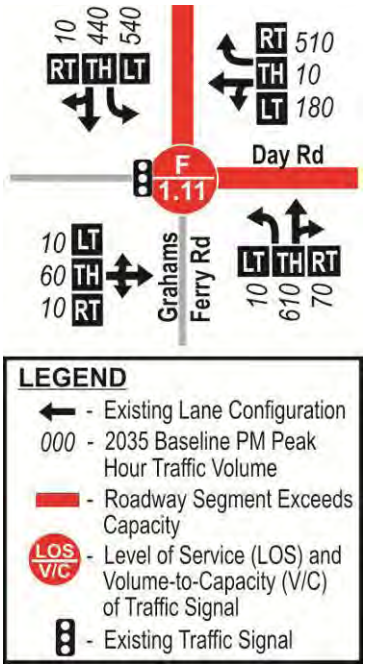
Previously Identified Improvement Projects to Reconsider: Add SB left-turn lane (dual lanes); additional eastbound travel lane needed on Day Road (Coffee Creek Master Plan)

Applicable Standard: LOS D

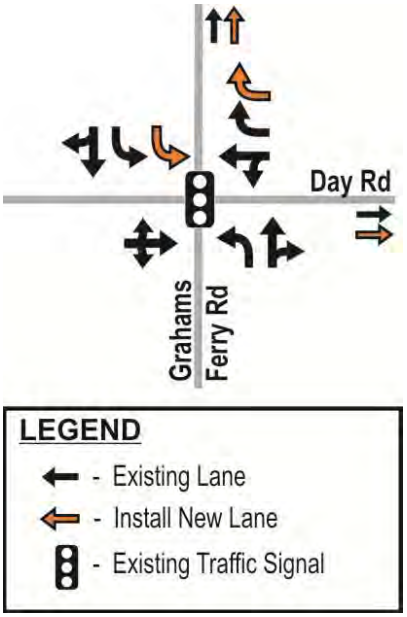
Existing Operations: LOS B, 0.54 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

See Grahams Ferry (5-lane) and Day Road widening projects for north and east legs. Based on the percentage of trucks using this intersection, a roundabout is not recommended.

*Includes traffic signal only. Intersection widening is covered under the appropriate roadway widening project.

(4) Boones Ferry Road/Day Road Intersection Improvements

Evaluation Score: 50
Cost Estimate: $0.75 M

Background Information

Jurisdiction: Washington County

Improvement Need: Approach capacity (in addition to Boones Ferry Road and Day Road expansion)

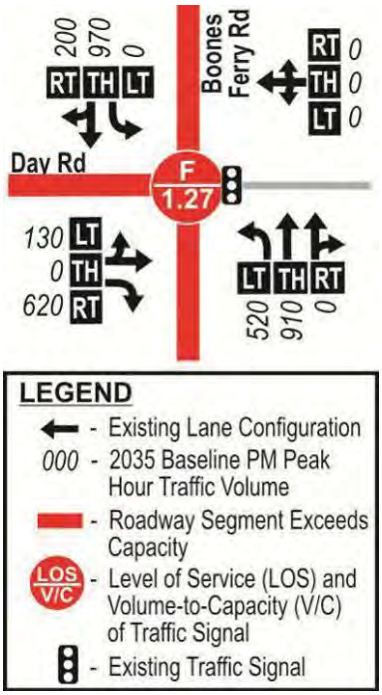
Previously Identified Improvement Projects to Reconsider: N/A

Applicable Standards: V/C ≤ 0.99

Existing Operations: LOS C, 0.71 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements

Comments

See Day Road (5-lane) widening project for west leg.

(13) Boeckman Road/Villebois Drive Intersection Improvements

Evaluation Score: 50
Cost Estimate: $0.5 M

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Roundabout expansion or slip lanes

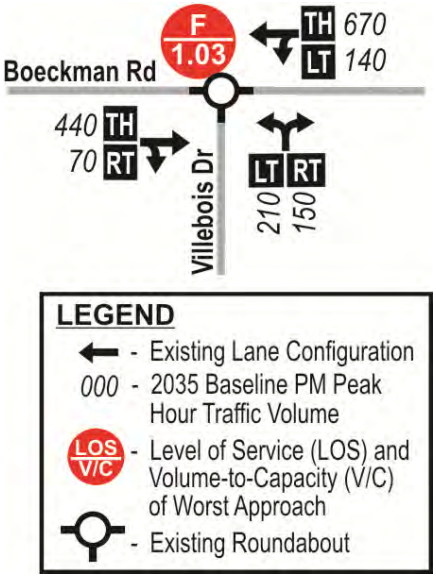
Previously Identified Improvement Projects to Reconsider: N/A

Applicable Standards: LOS D

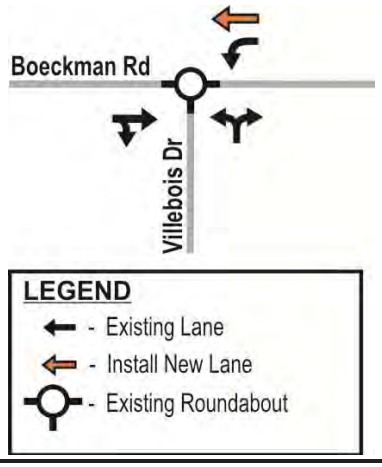
Existing Operations: LOS A/B, 0.20 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

The existing roundabout requires the addition of a new westbound slip lane to meet future 2035 operations.

Environmental impacts may exist with wetlands to the north.

(11) Stafford Road/65th Avenue Intersection Improvements

Evaluation Score: 50
Cost Estimate: $1.5 M

Background Information

Jurisdiction: Clackamas County

Improvement Need: Traffic control upgrade

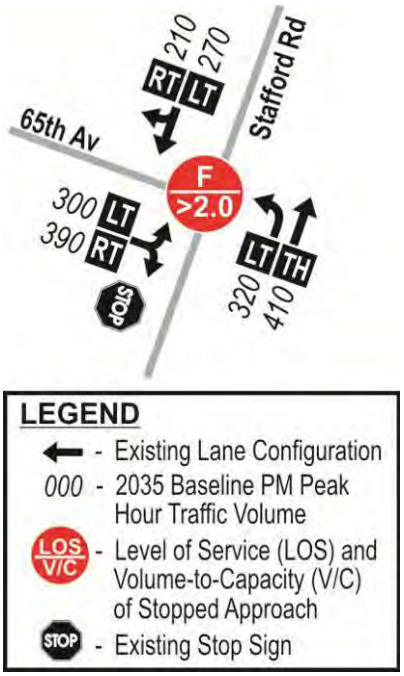
Previously Identified Improvement Projects to Reconsider: Add NB left-turn and EB right-turn lanes and install signal; also install signal at the 65th Avenue/Elligsen Road intersection (see TSP Project S-35) (TSP Project S-2). Improve turn radii, sight distance, and grade differential by combining 65th, Elligsen, and Stafford Road intersections (RTP Project 10134)

Applicable Standards: LOS D

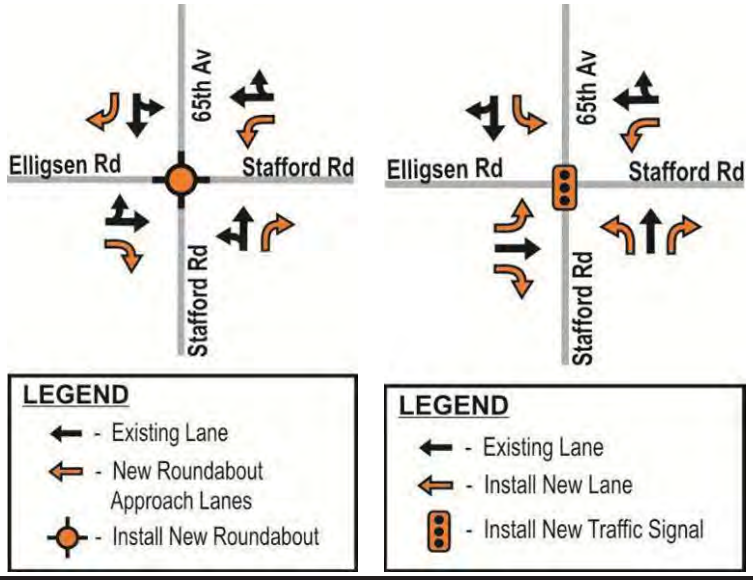
Existing Operations: LOS A/F, 1.25 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

This improvement includes roadway realignment and the combination of the 65th Avenue/Elligsen Road and Stafford Road/65th Avenue intersections.

The new intersection could be improved with either a traffic signal and turn lane improvements or the installation of a dual lane roundabout.

(17) Boeckman Road/Parkway Avenue Intersection Improvements

Evaluation Score: 45
Cost Estimate: $0.9 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Approach capacity (in addition to Boeckman Road expansion)

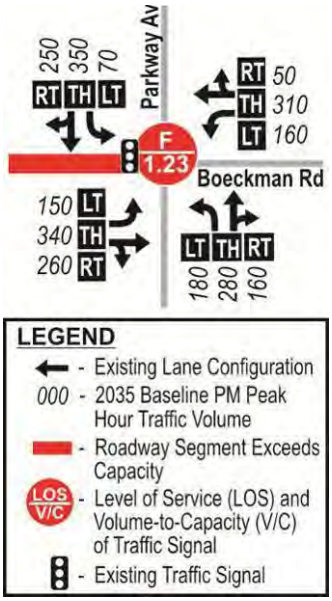
Previously Identified Improvement Projects to Reconsider: Add EB and SB right-turn lanes (TSP Project S-28)

Applicable Standards: LOS D

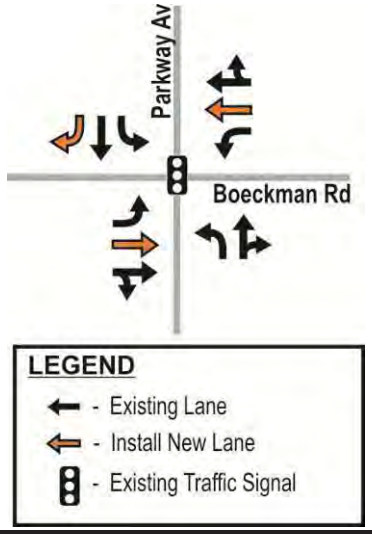
Existing Operations: LOS C, 0.77 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Boeckman Road widening improvement alone will improve west leg of this intersection. Additional approach lane also needed on east leg.

*Cost includes new traffic signal and widening as shown on the east and north legs (west leg cost included in Boeckman Road widening improvement).

(19) Boeckman Road/Stafford Road Intersection Improvements

Evaluation Score:40
Cost Estimate: $1.0 M

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic control upgrade

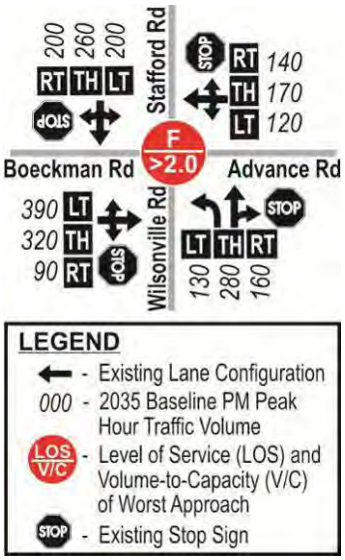
Previously Identified Improvement Projects to Reconsider: Install signal (TSP Project S-41)

Applicable Standards: LOS D

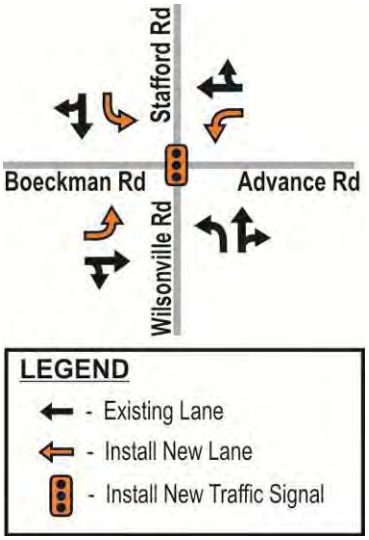
Existing Operations: LOS C, 0.67 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Both a traffic signal with turn lane improvements as well as a new roundabout were considered for this intersection. The traffic signal was determined to be the preferred improvement due to adjacent buildings on the southwest and southeast corners of the intersection.

(15) Boeckman Road/Boberg Road Intersection Improvements

Evaluation Score: 40
Cost Estimate: $0.25 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Intersection turn lanes and Boeckman Road widening.

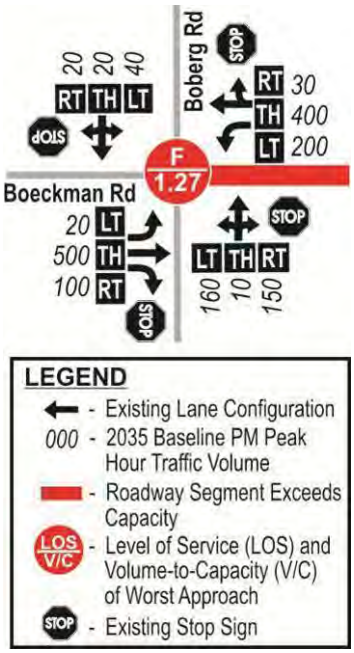
Previously Identified Improvement Projects to Reconsider: Install single-lane roundabout and acquire right-of-way for future multi-lane roundabout (Barber Street and Kinsman Road Extensions Transportation Analysis)

Applicable Standards: LOS D

Existing Operations: LOS B, 0.52 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements

Comments

All way stop will be removed at this intersection when the Kinsman Road extension is completed.

*Only cost included in this project is for the south leg (northbound left turn lane). All other work included in the Boeckman Road widening project, which includes the bridge over I-5.

(23) Town Center Loop/Vlahos Drive Intersection Improvements

Evaluation Score: 35
Cost Estimate: $0.25 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic control upgrade

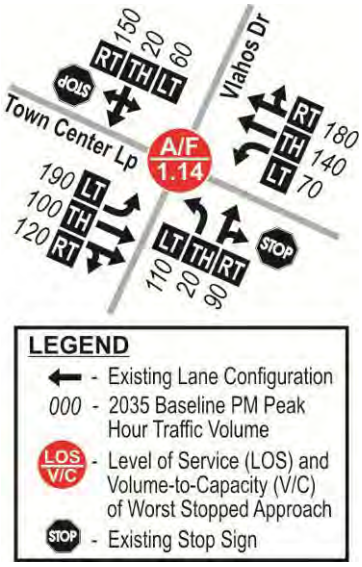
Previously Identified Improvement Projects to Reconsider: Install signal (TSP Project S-4)

Applicable Standards: LOS D

Existing Operations: LOS A/C, 0.30 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements

Comments

Canyon Creek extension improvement will improve north leg of this intersection

*Cost includes a new traffic signal only

(12) Grahams Ferry Road/Tooze Road Intersection Improvements

Evaluation Score: 30
Cost Estimate: $1.0 M

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic control upgrade

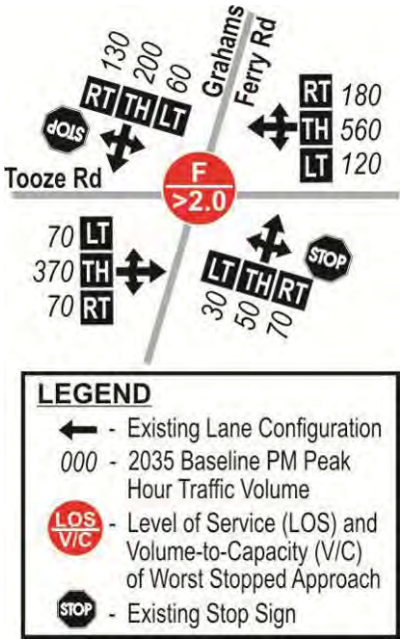
Previously Identified Improvement Projects to Reconsider: Install signal (TSP Project S-9)

Applicable Standards: LOS D

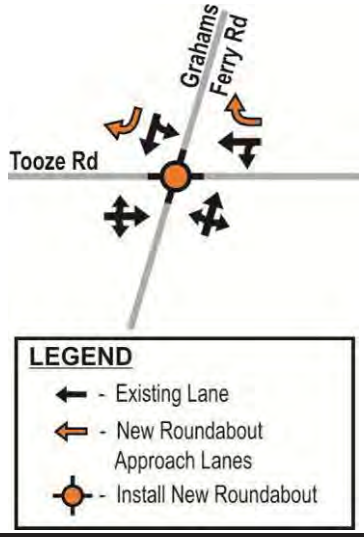
Existing Operations: LOS A/C, 0.33 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

A roundabout is recommended instead of a traffic signal to maintain consistency with adjacent intersections (including Boeckman Road/Villebois Drive, Boeckman Road/Kinsman Road, and the potential installation of a roundabout at the future Grahams Ferry Road/Barber Street intersection).

See Tooze Road widening project for east leg.

(29) Wilsonville Road/Town Center Loop W Intersection Improvements

Evaluation Score: 30
Cost Estimate: $0.4 M

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Approach capacity

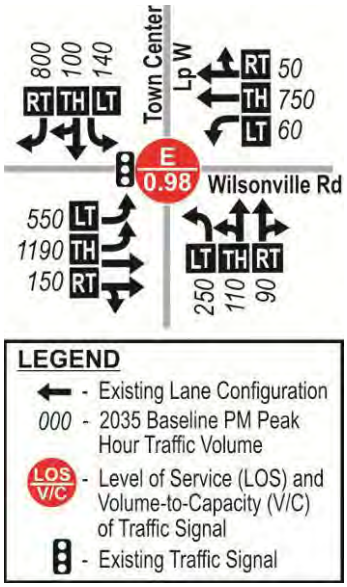
Previously Identified Improvement Projects to Reconsider: Change NB left-through to left only (TSP Project S-29). Dual SB right-turns (I-5/Wilsonville Road IAMP)

Applicable Standards: LOS D

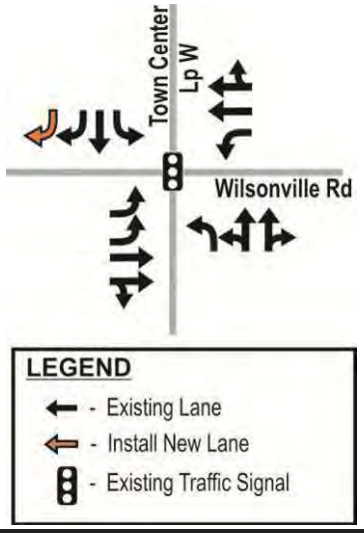
Existing Operations: LOS D, 0.81 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

This improvement likely to take place as part of redevelopment of adjacent parcel due to building impacts.

(18) Boeckman Road/Canyon Creek Road Intersection Improvements

Evaluation Score: 25
Cost Estimate: $0.25 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: Traffic control upgrade

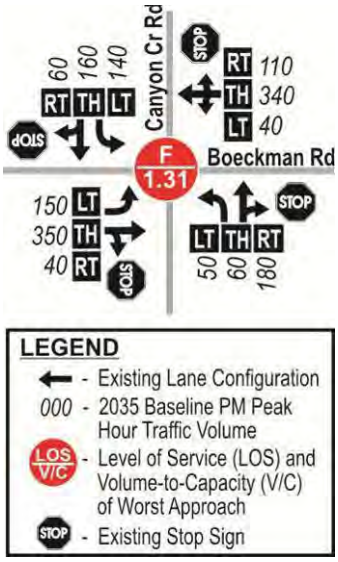
Previously Identified Improvement Projects to Reconsider: Install signal (TSP Project S-13)

Applicable Standards: LOS D

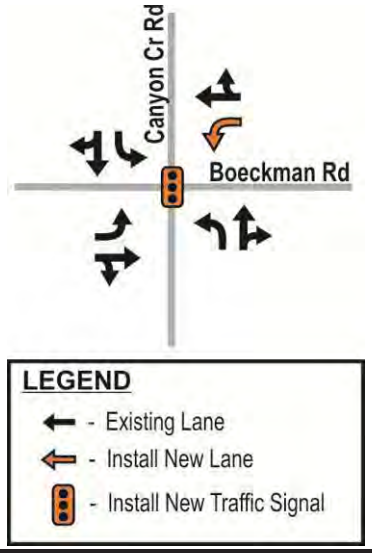
Existing Operations: LOS B, 0.49 V/C

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Boeckman Road safety/widening improvement will improve east leg of this intersection

*Cost includes a new traffic signal only

(16) Boeckman Road/Boones Ferry Road Access Loop Intersection Improvements

Evaluation Score: 00*
Cost Estimate: $0.0 M*

Background Information

Jurisdiction: City of Wilsonville

Improvement Need: None other than Boeckman Road widening.

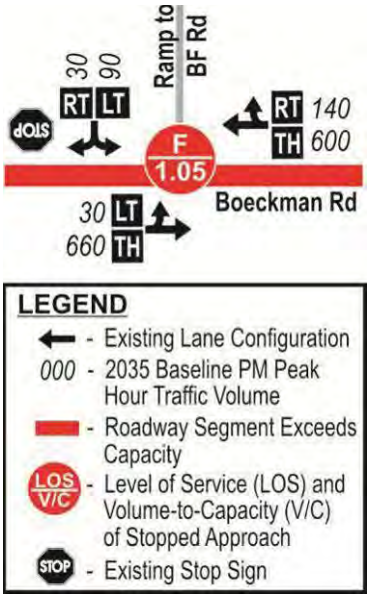
Previously Identified Improvement Projects to Reconsider: Add EB right-turn lane and install signal (TSP Project S-24)

Applicable Standards: LOS D

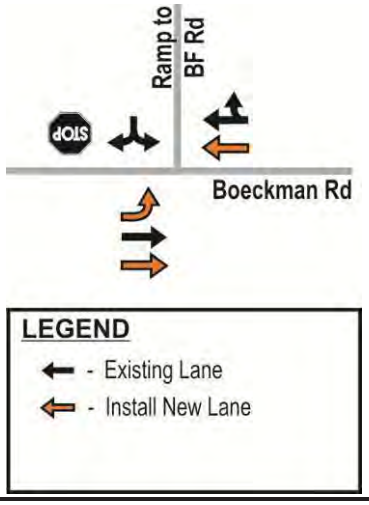
Existing Operations: LOS A/C, 0.31 V/C for stopped approach

2035 Future Operations: Shown at right

2035 Baseline Analysis



Intersection Improvements



Comments

Boeckman Road widening improvement alone will improve this intersection. No other improvements have been identified.

*Cost included in Boeckman Road over I-5 project. Not evaluated as separate project.

Regional Needs and Improvements

There are four regional needs and improvements on the outskirts of Wilsonville City Limits that are expected to affect transportation needs within the City. These include:

- I-5 Boones Bridge Congestion
- Boones Ferry Road (Norwood to Day)
- 124th Avenue Extension (Tualatin-Sherwood to Tonquin)
- Basalt Creek Planning Area

I-5 Boones Bridge Congestion

At a prior City Council/Planning Commission Work Session, concerns were raised about congestion on the I-5 Boones Bridge just south of the Wilsonville Road interchange. The Oregon Department of Transportation (ODOT) expects the current work on the Wilsonville Road interchange, including the southbound ramp meter, to reduce congestion in this area. ODOT will be monitoring any future needs that may arise on I-5 south of Wilsonville; therefore, the TSP's primary concern along this portion of I-5 is accommodating bicycle and pedestrian travel across the Willamette River. Otherwise, no improvements are expected beyond the current I-5/Wilsonville Road interchange improvement project.

Boones Ferry Road (Norwood to Day)

Washington County currently is in the design phase of a roadway improvement project for the section of Boones Ferry Road between Norwood Road and Day Road. This roadway is a two-lane arterial with minimal shoulders and no bike or pedestrian facilities. It is hilly, has substandard curves just north of Day, and sight distance concerns at existing intersections and driveways. This project falls within the Basalt Creek Planning Area.

The purpose of the project is to improve the roadway's safety and capacity for motorists, bicyclists and pedestrians. The improved roadway will include one travel lane in each direction, an intermittent center turn lane, bike lanes on both sides, and pedestrian facilities (including sidewalks on both sides of the road between Iowa Drive and Norwood Road and on one side of the road between Iowa Drive and Day road). The roadway will also be realigned to flatten the existing curves and meet 45 mile per hour arterial standards.

124th Avenue Extension (Tualatin-Sherwood to Tonquin)

Washington County currently is in the planning phase of a project that will extend 124th Avenue from Tualatin-Sherwood Road to Tonquin Road. This extension will include one travel lane in each direction and is intended to provide access to future commercial and industrial land between the cities of Tualatin and Sherwood. Due to its impact on circulation patterns in northwest Wilsonville, this roadway extension was included in the 2035 Baseline scenario analyzed in the *Transportation System Gaps and Deficiencies* memorandum. Once it is constructed and additional development occurs in the nearby area, this connection is expected to trigger additional capacity needs in Northwest Wilsonville.

Basalt Creek Planning Area

The Basalt Creek and West Railroad Planning Areas, which are located between Wilsonville and Tualatin (as shown in Figure 5), are currently in the concept planning stage. Currently, work is being performed to consider alternative land use densities and transportation facilities.

Figure 5: Basalt Creek, West Railroad, and Coffee Creek Planning Areas[33]

[33] Figure prepared by City of Wilsonville GIS department and obtained from Basalt Creek project website on April 4, 2012: http://www.basaltcreek.com

At this time, it is not clear what the project findings or recommended solutions will be from the Basalt Creek Planning Area. Therefore, the 2035 traffic forecasts that were prepared for the Wilsonville TSP's Baseline scenario are based on the completion of the 124th Avenue extension and development levels consistent with Metro's 2035 population and employment forecasts.

Many of the improvement needs in Northwest Wilsonville are related to the 124th Avenue extension and the Basalt Creek and Coffee Creek development areas. Following the completion of the Wilsonville TSP update, additional refinement to projects in northwest Wilsonville (i.e., primarily along Boones Ferry Road, Day Road, and Grahams Ferry Road) will be needed as additional findings about the Basalt Creek and West Railroad Planning Areas become available.

Funding Outlook

The City of Wilsonville uses multiple funding sources to pay for the construction, operation, and maintenance of its transportation infrastructure and services. Detailed discussion of these sources and the City's future funding outlook by transportation expenditure are documented in the prior *Existing Funding* memorandum, dated October 5, 2011. The funding analysis documented below is intended to provide a very general idea of what the City might expect regarding available funding through the year 2035. More specific funding analysis and recommendations will be developed as part of the Financially-Constrained Solutions Package.

In general, the City observes the following funding practices for its improvement projects:

- Improvements driven by new development are principally paid for using transportation system development charges (SDCs) and developer contributions.
- Improvements made to reduce blight and attract development within the City's Urban Renewal Districts (URDs) are paid for by the corresponding district (i.e., Year 2000 Plan or West Side Plan).
- Other improvements undertaken by the City are paid for using a combination of various City funds depending on project components (e.g., maintenance, operations, capital improvements, etc.).
- Transit costs are paid for by the Transit Fund, which primarily receives revenue from payroll taxes.
- Pedestrian and bicycle facilities are constructed as part of roadway projects or paid for using Park SDS funds.
- Staff time (i.e., planning, engineering, and other administration) and supply costs are paid for through the Community Development Fund, which receives transfers from other revenue sources depending on the type of project staff works on.

Based on the past ten years of projects funded by Street SDCs, developer contributions, and the East Side Urban Renewal District, the City of Wilsonville may expect approximately $77.7 million to be available for future roadway improvement projects through the year 2035 based on existing funding streams (including related overhead costs). After more development occurs within the West Side Urban Renewal District, then additional funds are also expected to be available for

related west side improvements. Additional State and Federal funding contributions can be expected for projects with regional significance, but no estimates have been performed at this time.

Table 8 lists the total cost by project type for the transportation projects identified in this memorandum. The $167.8 million total cost exceeds the City's expected revenues by $90.1 million. Therefore, based on the funding projections and project cost estimates, it is expected that more than double the amount of additional funding would be needed if the City decided to construct every single project identified in this memorandum. However, not all projects should be included in the recommended solutions package. Once a solutions package has been developed, a detailed analysis of new funding recommendations will be provided. A list of potential new funding sources was provided previously in the appendix of the prior *Existing Funding* memorandum.

Table 8: Total Transportation Improvement Costs by Project Type

Project Type	Cost
Safety Projects	$10,800,000
High Priority Stand-Alone Pedestrian and Bicycle Projects	$28,296,000
Safe Routes to School Projects	$780,000
Additional Pedestrian and Bicycle Projects (Walkways/Bikeways)[a]	$8,543,000
Additional Pedestrian and Bicycle Projects (Regional/Local Trails)[a]	$7,007,000
Roadway Widening Projects	$41,500,000
Roadway Extension Projects[b]	$60,200,000
Intersection Improvement Projects[c]	$10,700,000
TOTAL	**$167,826,000**

[a] Additional pedestrian and bicycle projects include the remaining projects that are not expected to be built as part of a roadway improvement project or an adjacent development.
[b] Assumes the Brown Road extension connects to Boones Ferry Road at Bailey Street instead of at 5th Street.
[c] Improvement costs for the Boeckman Road/Kinsman Road and Boeckman Road/Boones Ferry Road Access loop intersections are already included in the corresponding roadway improvement projects.

The projects costs identified in Table 8 do not include the additional costs that would be needed for transit-related needs, such as the recommended SMART Options Program recommendations, bus replacements, or transit facilities and capital (e.g., buses and drivers) to serve new growth areas—especially in the Coffee Creek and Basalt Creek Planning Areas. While the Transit Fund has a strong revenue source (i.e., payroll tax) to fund ongoing transit service. SMART will still face real funding challenges. Depending on the future course of the economy, the payroll tax (along with grants, which have been obtained in the past but are becoming less promising in this economic and political environment) may or may not be able to fund some of the significant upcoming transit-related needs. It is possible that to fund additional needs, SMART may need to enact some modest cuts and streamlining of existing programs.

Appendix

Transportation Demand Management Strategies for Employers

2006 Bicycle and Pedestrian Master Plan – Map 1 (Improvement Projects)

Planning Level Project Cost Estimates

Project Evaluation Scoring

Current Wilsonville Cross-Section Standards

Transportation Demand Management Strategies for Employers

Table A lists several potential Transportation Demand Management (TDM) strategies for employers and the associated trip reductions that may be expected following the implementation of a given strategy. These strategies are part of the Employee Commute Options (ECO) Rules, which are required of all Portland Metro area businesses with more than 100 employees at a worksite.[1] Another helpful reference is Metro's *Evaluation of Potential Measures for Achieving Modal Targets*.[2]

As part of its SMART Options program, SMART staff currently reviews these strategies with Wilsonville employers to help them identify which strategies are most appropriate. The strategies at the top of the table are expected to have the greatest potential for reducing vehicle trips. Therefore, they should be more highly encouraged, as feasible. If SMART's free support is insufficient to obtain desired trip reduction levels in the City, then appropriate incentives may be considered.

Table A: Transportation Demand Management Strategies for Employers[3]

Strategy	Description	Potential Trip Reduction[a]
Telecommuting	Allow employees to perform regular work duties at home or at a work center closer to home, rather than commuting from home to work. This can be full time or on selected workdays. This can require computer equipment to be most effective.	82-91% (Full Time) 14-36% (1-2 day/wk) *Per employee participating*
Provide Vanpools[b]	Organize employees that live near each other into a vanpool for their trips to and from work. The employer may subsidize the van's operation and maintenance costs. Existing programs in the area that could be utilized include Valley VanPool (for Salem destinations) and Metro VanPool (for Portland destinations)	30-40% (Fully-subsidize van) 15-25% (Run vanpool but charge fee) *Percentage of employees living more than 20 mi. away from work site*
Compressed Work Week	Allow employees to work their regularly scheduled number of hours in fewer days per week.	**Most Typical:** 16-18% (4 day/40 hr) **Other Options:** 7-9% (9 day/80 hr) 32-36% (3 day/36 hr) *Per employee participating*
Alternative Mode Subsidy[b]	Provide a monetary bonus to employees that commute to work by modes other than driving alone.	**High Transit Service:** 21-34% (full subsidy) 10-17% (half subsidy) **Medium Transit Service:** 5-7% (full subsidy) 2-4% (half subsidy) **Low Transit Service:** 1-2% (full subsidy) 0.5-1% (half subsidy)21-34%

Table A continued on next page.

[1] http://www.deq.state.or.us/nwr/ECO/eco.htm; viewed on March 2, 2012.
[2] http://library.oregonmetro.gov/files/finalreport_modaltargets.pdf
[3] *Guidance for Estimating Trip Reductions from Commute Options*, Oregon Department of Environmental Quality (DEQ), August 1996, and *Employee Commute Options (ECO) Sample Trip Reduction Plan*, Oregon DEQ, October 2006.

(Continued) Table A: Transportation Demand Management Strategies for Employers

Strategy	Description	Potential Trip Reduction
Transit Pass Subsidy[b]	Pay a portion of the cost of a monthly transit pass for employees that commute to work by bus or other public transportation methods. (The potential trip reduction is lower than the alternative mode subsidy because it does not incentivize bicycle, pedestrian, and vanpool/carpool modes.)	**High Transit Service:** 19-32% (full subsidy) 10-16% (half subsidy) **Medium Transit Service:** 4-6% (full subsidy) 2-3% (half subsidy) **Low Transit Service:** 0.5-1% (full subsidy) 0-0.5% (half subsidy)
Bicycle Program[b]	Provide support services to those employees that bicycle to work. Examples include: safe/secure bicycle storage, shower facilities, and subsidy of commute bicycle purchase.	0-10% *Percentage of employees living within 6 mi. of work site*
On-Site Rideshare Matching for HOVs	Match employees who can reasonably carpool or vanpool together based on information that employees provide regarding their work hours, availability of a vehicle, and place of residence.	6-8% (with support strategies) 1-2% (without support strategies)
Guaranteed Ride Home Program	Maintain a company owned or leased vehicle that is available in the case of an emergency for employees that arrived to work using transit or bicycle.	1-3% *When used in combination with other measures*
On-Site Services	Provide services at the work site that are frequently used by employees (and that employees would typically need to drive to use). Examples include cafes/restaurants, dry cleaners, day care centers, and bank machines.	1-2%
Time off with Pay for Alternative Mode Use	Offer employees time off with pay as an incentive to use alternative modes.	1-2%
Gift/Awards for Alternative Mode Use	Offer employees the opportunity to receive a gift or an award for using modes other than driving alone.	0-3%
Walking Program	Provide support services for those who walk to work. This could include buying walking shoes or providing lockers and showers.	0-3%
Company Cars for Business Travel	Provide company cars for business-related travel during the day	0-1%
Car-Sharing	Pay for car-sharing memberships (such as Zipcar) for business-related travel during the day	[c] *Dependent upon presence of nearby cars*
Preferential Parking for Carpools	Provide preferred parking stalls to employees using carpools and vanpools.	[c]

[a] Reduction applicable to total number of employees, unless otherwise noted.
[b] Tax benefits may be available to employers who provide their employees with certain transportation benefits (see www.irs.gov/pub/irs-pdf/p15b.pdf).
[c] Strategy not identified in Employee Commute Options (ECO) table, so potential trip reduction is unknown.

2006 Bicycle and Pedestrian Master Plan – Map 1 (Improvement Projects)

Map 1. Wilsonville Bicycle and Pedestrian Concept Map

REGIONAL TRAILS

1. Tonquin Trail
2. Stafford Spur Trail
3. Boeckman Creek Trail
4. Waterfront Trail
5. Willamette River Crossing Trail
6. Wiedeman Road Trail

COMMUNITY WALKWAY / BIKEWAY

1. See project matrix for project names and descriptions

LOCAL ACCESS TRAIL

1. See project matrix for project names and descriptions

WATER TRAIL ACCESS

1. See project matrix for project names and descriptions

Grahams Ferry Rd
95th Ave
Boones Ferry Rd
Elligsen Rd
Canyon Creek Rd
Stafford Rd
Parkway Ave
Boeckman Rd
Boberg Rd
Coffee Lake Natural Area
Villebois
Future Multi-Modal Transit Station
Barber St
Kinsman Rd
Brown Rd
Montebello Rd
Town Center Loop
Wilsonville Rd
Graham Oaks Natural Area
Boones Ferry ES
Inza Wood MS
CREST
Wilsonville High School
Boeckman Creek ES
Memorial Park
To Molalla State Park
To Champoeg State Park
French Prairie Road
Charbonneau

TRAILS, WALKWAYS AND BIKEWAYS

- Proposed Regional Trail
- Existing Community Walkway and Bikeway
- Proposed Community Walkway and Bikeway
- Existing Local Access Trail
- Proposed Local Access Trail
- Proposed Water Trail

SCHOOLS

- Existing School Site
- Planned School Site
- School District Property

PARKS AND OPEN SPACES

- Park
- Metro Greenspace
- Private Park
- General location of a proposed community park
- General location of a proposed neighborhood park

- Streets
- Railroad
- Wilsonville City Limits
- Urban Growth Boundary
- Willamette River

All trail alignments shown on this map are conceptual in nature and subject to adjustment, field verification, and additional studies.

0 0.25 0.5 1 Miles

Planning Level Project Cost Estimates

TSP Update Cost Estimates - Intersection Improvements

Intersection	Improvement	Prior 2003 TSP Estimated Cost	Current RTP Cost	Current 2012 TSP Cost	Comment
Grahams Ferry Rd/ Tonquin Rd	Install Traffic Signal		N/A	250,000	Traffic Signal Only (See Tonquin Road and Grahams Ferry Improvements)
Grahams Ferry Rd/ Day Rd	Traffic Signal Only		N/A	$ 250,000	Traffic Signal Only (See Day Road and Grahams Ferry Improvements)
Grahams Ferry Rd/ Clutter Rd	Traffic Signal (See Safety Improvements for Intersection Costs)		N/A	$ 250,000	Traffic Signal Only (intersection improvements covered in intersection safety project)
Boones Ferry Rd/ Day Rd	Traffic Signal Only		N/A	$ 750,000	Traffic Signal and Dual Northbound Left Turns Only (See Day Road Improvement for remaining work)
Boones Ferry Rd/ 95th Ave	Install new traffic signal and dual turn lanes on East and South approaches	$ 2,500,000	N/A	$ 1,400,000	Project Just Bid (Added $300 K for Design)
Stafford Rd/ 65th Ave	Dual Lane Roundabout or Traffic Signal with intersection reconstruction		N/A	$ 1,500,000	Discussion with JL, at OBEC
Grahams Ferry Rd/ Tooze Rd	Install Roundabout		N/A	$ 1,000,000	Stafford/Rosemont Road Reference
Boeckman Rd/ Villebois Dr	Widen Roundabout		N/A	$ 500,000	Potential Environmental Impacts
Boeckman Rd/ Kinsman Rd	Install Roundabout		N/A	Included in Kinsman Extension	OBEC Kinsman Cost Estimate
Boeckman Rd/ Boberg Rd	Install Northbound Left Turn Lane, Remove all-way stop approach, Make Boeckman E/W Free Flow	N/A	N/A	$ 250,000	
Boeckman Rd/ Boones Ferry Rd Access Lp	5-lane Boeckman Overcrossing Project improves intersection. No other improvements are necessary		N/A	Included in Boeckman Overcrossing	
Boeckman Rd/ Parkway Ave	West leg included in Boeckman Overcrossing Project, North and East Legs widening and traffic signal		N/A	$ 900,000	Includes traffic signal and work on north and east legs.
Boeckman Rd/ Canyon Cr Rd	Install Traffic Signal, east leg improvements covered in Boeckman Dip Project)		N/A	$ 250,000	
Boeckman Rd/ Stafford Rd	Install traffic signal and left turn lanes on east/west and north legs.		N/A	$ 1,000,000	
Town Center Lp/ Vlahos Dr	Install Traffic Signal (Intersection Improvements- See Extension Project #2)		N/A	$ 250,000	
Wilsonville Rd/ Town Center Lp W	Install Additional SB Right Turn Lane (for a total of two)	N/A	N/A	$ 400,000	
Miley Rd/ I-5 SB Off Ramp	Widen SB exit ramp for additional left turn Lane. Signalize Intersection.	N/A	N/A	$ 500,000	
Miley Rd/ NE Airport Rd	Install NB Left turn lane. Install traffic signal	N/A	N/A	$ 500,000	

TSP Update Cost Estimates - Roadway Extensions

Roadway Extension	Prior 2003 TSP Estimated Cost	Current RTP Cost	Current 2012 TSP Cost	Comment
Kinsman Road (Wilsonville Road to south Brown Road extension)	$ 3,100,000	N/A	See Brown Road Extension	Portion of this roadway was constructed with recent development
Kinsman Road—Phase 1 (Barber Street to Boeckman Road)	$ 4,550,000	$ 10,365,000	$ 4,300,000	Source: OBEC 30% Cost Estimate (RTP is appears high based on OBEC info)
Kinsman Road—Phase 2 (Boeckman Road to railroad tracks)	$ 2,850,000	N/A	$ 2,700,000	Lineal Foot Estimates
Kinsman Grade Separated RxR Crossing	N/A	N/A	$ 7,000,000	Discussion with Jerry Lane at OBEC (Assumes $5 Million for Structure and $2 million for BPA relocation)
Kinsman At-Grade RxR Crossing	N/A	N/A	$ 1,500,000	
Kinsman Road (railroad tracks to Ridder Road)	$ 3,800,000	N/A	$ 2,300,000	Lineal Foot Estimates
Kinsman Road (Ridder Road to Day Road)	$ 6,000,000	$ 6,500,000	$ 6,500,000	Used RTP Estimate (DKS $6,000,000)
Canyon Creek Road (Boeckman Road to Vlahos Drive)	$ 4,500,000	N/A	$ 3,500,000	Coordinated with Mike Ward
Brown Road south (Wilsonville Road to 5th Street; Includes Montibello Extension)	$ 4,500,000	N/A	$ 15,150,000	Source: OBEC 30% Cost Estimate, $0.75 million removed for office park road construction
Brown Road south (Wilsonville Road to Bailey Street; Includes Montibello Extension)	$ 4,500,000	N/A	$ 13,500,000	Source: OBEC 30% Cost Estimate, $0.75 million removed for office park road construction
Barber Street (Kinsman Road to Montebello Drive)	$ 4,400,000	$ 8,900,000	$ 7,300,000	Source: OBEC 30% Cost Estimate (RTP is appears high based on OBEC info)
Weidemann Road (Parkway Avenue to Canyon Creek)	N/A	N/A	$ 4,300,000	Lineal Foot Estimates
Weidemann Road (Canyon Creek to Stafford)	N/A	N/A	$ 8,800,000	Lineal Foot Estimates
Boones Ferry Road (Commerce Circle to Ridder Road)	N/A	N/A	$ 2,100,000	Lineal Foot Estimates

TSP Update Cost Estimates - Roadway Widening

Roadway Widening	Prior 2003 TSP Estimated Cost	Current RTP Cost	Current 2012 TSP Cost	Comment
Day Road Widening (from Boones Ferry Road to Grahams Ferry Road)	N/A	N/A	$ 6,600,000	Widen from 3-lane to 5-lane w/intersection improvements at both ends.
Tooze Road Improvements (From end of Boeckman improvements to Grahams Ferry Road	$ 2,500,000	$ 3,800,000	$ 3,800,000	Used RTP estimate (Includes new structure)- DKS $2,8200,000
Grahams Ferry Road Widening 2 to 5 lanes between Day Road and Tonquin Road	N/A	N/A	$ 7,000,000	Linear Foot Estimates
Boeckman Road Widening over I-5 Overcrossing	$ 9,600,000	$ 13,600,000	$ 13,600,000	Used RTP estimate (Includes new structure)
Boeckman Road (Stafford Road to west of Willow Creek Dr.	N/A	N/A	$ 1,600,000	Linear Foot Estimates
Stafford Road (Boeckman to Kahle)	N/A	N/A	$ 3,900,000	Linear Foot Estimates
Parkway Avenue (Parkway Center to Xerox Drive)	N/A	N/A	$ 5,000,000	Linear Foot Estimates

TSP Update Cost Estimates - Safety

Safety Improvement	Prior 2003 TSP Estimated Cost	Current RTP Cost	Current 2012 TSP Cost	Comment
Boeckman Dip	$ 4,300,000	$ 5,800,000	$ 5,800,000	Used RTP estimate (Includes new structure)
Grahams Ferry Road grade-separated railroad under-crossing	$ 4,000,000	N/A	$ 5,000,000	Discussion with Jerry Lane. Assumes Shoo-fly would be necessary to move trains during Construction
Clutter/Grahams Ferry Realignment	$ 850,000	N/A	$ 1,000,000	

Project Evaluation Scoring

Evaluation Criteria

Evaluation criteria and a point-based technical scoring methodology were developed for assessing how well the TSP projects contribute to the achievement of the City's revised transportation goals. Based on their criteria scores, the projects can be compared and prioritized. In this way, a consistent method will be used to evaluate and rank the alternatives based on how well they meet the City's transportation goals and policies.

Table B lists the evaluation criteria, which are categorized using the framework of the revised transportation goals. The table also identifies the applicable project types that the criteria apply to. These criteria were selected based on the City's current transportation policies. They were also refined to ensure consistency with Metro's Regional Transportation Functional Plan (RTFP).

The scoring was performed using the -1 to +1 range identified in Table B, with -0.5 and +0.5 also valid options for projects that partially met the specified scoring criteria. The final evaluation score for each project was developed by determining an average score for each goal, then averaging the scores for all five goals, and finally multiplying by 100. Therefore, the range of scores can vary between +100 (fully meets all positive criteria) and -100 (received all negative scores).

Table B: Project Evaluation Criteria and Scoring

Applicable Project Type	Criteria	Evaluation Score
Safe		
Roadway, Intersection	**Area of Special Safety Concern** Addresses the safety of an area of special concern in the City.	+1. Resolves an identified safety concern 0. Has little or no impact (or has offset impacts) to an area of special safety concern -1. Negatively impacts an area where safety concerns currently exist
Roadway, Intersection	**Geometric Design/User Expectations** Meets current design standards and is consistent with user expectations to improve overall safety of the transportation network.	+1. Improves the system's overall safety 0. Has little or no impact (or has offset impacts) to the system's overall safety -1. Negatively impacts safety or only postpones safety concerns without clear future solution
Accessible and Equitable		
Roadway	**Alternative Access Routes** Ensures all locations have multiple routes for providing access options to users and emergency vehicles.	+1. Provides additional routes and/or connections for locations with limited access 0. Has minor or no impact (or has offset impacts) -1. Reduces access such that there are potential emergency response implications

Table B continued on next page.

(Continued) Table B: Project Evaluation Criteria and Scoring

Applicable Project Type	Criteria	Evaluation Score
Accessible and Equitable (Continued)		
Roadway, Intersection	**Equity** Contributes in closing the transportation accessibility gap between the general user and youth, seniors, people with disabilities, and low-income and minority populations.	+1. Specifically benefits traditionally underserved populations 0. Neither increases nor contributes to closing the accessibility gap between the general user and traditionally underserved populations -1. Negatively impacts or increase accessibility gap to traditionally underserved populations
Functional and Reliable		
Roadway, Intersection	**Motor Vehicle Capacity** Enables roadways and intersections to have sufficient capacity to meet applicable operating standards under the 2035 future traffic scenario.	+1. Mitigates an identified capacity deficiency and/or has significant capacity benefits for the entire system 0. Does not contribute to capacity deficiency mitigation -1. Reduces capacity or limits future capacity improvement potential
Roadway, Intersection	**Efficient Operations** Improves the ability to efficiently operate the current and planned transportation infrastructure.	+1. Improves operational efficiency of infrastructure 0. Has little or no impact (or has offset impacts) -1. Negative impact on infrastructure efficiency
Roadway, Intersection	**Freight Mobility** Improves freight mobility and reliability on the City's freight routes.	+1. Improves freight movement on freight routes 0. Has little or no impact (or has offset impacts) -1. Inhibits freight movement on freight routes
Integrated		
Roadway	**Multi-Modal Facilities** Accommodates the needs of multiple modes simultaneously.	+1. Benefits all transportation modes 0. Has little or no impact (or has offset impacts) -1. Adversely impacts other transportation modes
Roadway,	**Multi-Modal Connections** Improves connections to mode transfer locations to accommodate trips using more than one mode.	+1. Improves connections to mode transfer locations 0. Has little or no impact (or has offset impacts) -1. Creates a barrier to mode transfer
Roadway, Intersection	**Regional Compatibility** Compatible with other jurisdictions' transportation plans (adjacent cities, counties, Metro, and ODOT).	+1. Compatible with other jurisdictions' plans 0. Has little or no impact (or has offset impacts) -1. Not compatible with other jurisdictions' plans

Table B continued on next page.

(Continued) Table B: Project Evaluation Criteria and Scoring

Applicable Project Type	Criteria	Evaluation Score
Sustainable		
Roadway	**Vehicle-Miles Traveled (VMT)** Reduces the expected vehicle-miles traveled (VMT), as measured using the project's travel demand model.	+1. Reduces the City's total VMT 0. Has little or no change to City's VMT -1. Increases City's total VMT
Roadway, Intersection	**Economic Prosperity** Supports economic prosperity by providing transportation facilities for existing and planned land uses and freight movements, consistent with Wilsonville's Comprehensive Plan.	+1. Provides infrastructure to support existing and planned land uses 0. Either no change or offset changes -1. Overall negative impact to infrastructure for existing and planned land uses
Roadway	**Environmental Sensitivity** Takes into account the natural environment in the planning, design, construction, and maintenance.	+1. Avoids environmental impact or improves conditions 0. Low environmental impact -1. High environmental impact
Roadway	**Fundability** Clear potential sources for funding both construction and maintenance.	+1. Clear potential sources for funding construction and maintenance 0. Feasible costs, but uncertain funding sources -1. High costs and funding difficulty expected
Roadway, Intersection	**Project Readiness** Takes into account the ease of implementation.	+1. High project readiness 0. Minimal project readiness -1. implementation roadblocks

Criteria (by TSP Goal)	Roadway Extensions						
	Kinsman Rd Extension (Barber St to Boeckman Rd)	*Kinsman Rd Extension (Ridder Rd to Day Rd)*	*Kinsman Rd Extension (Boeckman Rd to Ridder Rd)*	*Canyon Creek Rd Extension (to Town Center Loop/Vlahos Dr)*	*Wiedeman Rd Extension - West Connection (Parkway Ave to Canyon Creek Rd)*	*Wiedeman Rd Extension - Full Connection (Parkway Ave to Stafford Rd)*	*Brown Rd Extension - Bailey Rd Connection (to Boones Ferry Rd)*
Safe							
Area of Special Safety Concern	0	0	0	0	0	0	0
Geometric Design/User Expectations	0	0	0	0	0	0	0
Connected and Accessible							
Access	1	0	1	1	0	0	1
Multi-Modal Facilities	1	1	1	1	1	1	1
Multi-Modal Connections	1	0	1	0	0	0	0
Regional Compatibility	1	1	1	1	1	1	1
Functional and Reliable							
Motor Vehicle Capacity	1	1	1	1	1	1	1
Efficient Operations	1	1	1	1	1	0	1
Freight Mobility	1	1	1	0	0	0	0
Alternative Access Routes	1	1	1	1	1	1	1
Cost-Effectve							
Economic Prosperity	1	1	1	0.5	0.5	1	1
Environmental Sensitivity	-0.5	1	-1	1	1	-1	0
Vehicle-Miles Traveled (VMT)	1	1	1	1	0	1	1
Fundability	1	1	-1	1	0	0	1
Project Readiness	1	0	-1	0.5	0	-1	0.5
Average Score (by Goal)							
Safe	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Connected and Accessible	1.0	0.5	1.0	0.8	0.5	0.5	0.8
Functional and Reliable	1.0	1.0	1.0	0.8	0.8	0.5	0.8
Cost-Effectve	0.7	0.8	-0.2	0.8	0.3	0.0	0.7
Overall Average	**0.68**	**0.58**	**0.45**	**0.58**	**0.39**	**0.25**	**0.55**
Rounded Evaluation Score	**70**	**60**	**45**	**60**	**40**	**25**	**55**

	Roadway Extensions (Cont.)			Safety	
Criteria (by TSP Goal)	***Brown Rd Extension - 5th St Connection (to Boones Ferry Rd)***	***Barber St Extension (Montebello Dr to Kinsman Rd)***	***Boones Ferry Road Extension (Ridder Road to Commerce Circle)***	***Grahams Ferry Road Undercrossing Improvements at Railroad Bridge***	***Boeckman Road Vertical Curve East of Canyon Creek Road***
Safe					
Area of Special Safety Concern	0	1	0	1	1
Geometric Design/User Expectations	0	0	0	1	1
Connected and Accessible					
Access	1	1	0	1	1
Multi-Modal Facilities	1	1	0	1	1
Multi-Modal Connections	0	1	1	0	1
Regional Compatibility	1	1	0	1	1
Functional and Reliable					
Motor Vehicle Capacity	1	1	0	1	0
Efficient Operations	0.5	1	1	1	0
Freight Mobility	0	0	1	1	1
Alternative Access Routes	1	1	1	1	0.5
Cost-Effectve					
Economic Prosperity	0.5	1	1	1	1
Environmental Sensitivity	0	-1	0	0.5	-1
Vehicle-Miles Traveled (VMT)	0.5	1	0.5	0	0
Fundability	0.5	1	-0.5	0	-0.5
Project Readiness	1	1	0	0	1

Average Score (by Goal)					
Safe	0.0	0.5	0.0	1.0	1.0
Connected and Accessible	0.8	1.0	0.3	0.8	1.0
Functional and Reliable	0.6	0.8	0.8	1.0	0.4
Cost-Effectve	0.5	0.6	0.2	0.3	0.1
Overall Average	**0.47**	**0.71**	**0.30**	**0.76**	**0.62**
Rounded Evaluation Score	**45**	**70**	**30**	**75**	**60**

Criteria (by TSP Goal)	Roadway Widening					
	Boeckman Rd Improvements (Boberg Rd to Parkway Ave)	*Day Rd, Tonquin Rd, and Grahams Ferry Rd - Roadway Improvements*	*Boeckman Rd. (Stafford to Willow Creek)*	*Stafford Road (Boeckman to Kahle)*	*Parkway Ave (Parkway Center to Xerox)*	*Tooze Road (Boeckman to Grahams Ferry)*
Safe						
Area of Special Safety Concern	1	0	0	0	1	0
Geometric Design/User Expectations	1	0	0	0	1	1
Connected and Accessible						
Access	1	0	0	0	1	0
Multi-Modal Facilities	1	1	1	1	1	1
Multi-Modal Connections	0.5	0	1	1	1	1
Regional Compatibility	1	1	1	1	1	1
Functional and Reliable						
Motor Vehicle Capacity	1	1	0.5	0.5	0	0.5
Efficient Operations	1	1	0.5	0.5	0	0.5
Freight Mobility	1	1	1	1	1	1
Alternative Access Routes	1	0	1	1	0	1
Cost-Effectve						
Economic Prosperity	0.5	1	1	1	1	0
Environmental Sensitivity	0	0	0.5	0	1	0
Vehicle-Miles Traveled (VMT)	0.5	0	0	0	0	0
Fundability	-0.5	1	0	0	0	0
Project Readiness	0	0	0	0	0	0
Average Score (by Goal)						
Safe	1.0	0.0	0.0	0.0	1.0	0.5
Connected and Accessible	0.9	0.5	0.8	0.8	1.0	0.8
Functional and Reliable	1.0	0.8	0.8	0.8	0.3	0.8
Cost-Effectve	0.1	0.4	0.3	0.2	0.4	0.0
Overall Average	**0.74**	**0.41**	**0.45**	**0.43**	**0.66**	**0.50**
Rounded Evaluation Score	**75**	**40**	**45**	**45**	**65**	**50**

	Intersection Improvement								
Criteria (by TSP Goal)	*(1) Grahams Ferry Rd/Tonquin Rd*	*(2) Grahams Ferry Rd/Day Rd*	*(3) Grahams Ferry Rd/Clutter Rd*	*(4) Boones Ferry Rd/Day Rd*	*(5) Boones Ferry Rd/95th Ave*	*(11) Stafford Rd/65*	*(12) Grahams Ferry Rd/Tooze Rd*	*(13) Boeckman Rd/Villebois Dr*	*(1A) Boeckman Rd/Kinsman Rd*
Safe									
Area of Special Safety Concern	0	0	1	0	1	1	0	0	0
Geometric Design/User Expectations	0	0	1	0	1	1	0	0	0
Connected and Accessible									
Access	0	0	0	0	0	0	0	1	1
Regional Compatibility	1	1	1	1	1	1	1	1	1
Functional and Reliable									
Motor Vehicle Capacity	1	1	1	1	1	1	1	1	1
Efficient Operations	1	1	1	1	1	1	1	1	1
Freight Mobility	1	1	1	1	1	0	0	0	1
Cost-Effectve									
Economic Prosperity	1	1	0.5	1	1	0	0	1	1
Fundability	0.5	0.5	0	0.5	1	-0.5	0	0	0
Project Readiness	0	0	0	0	1	0	0	0	1

Average Score (by Goal)									
Safe	0.0	0.0	1.0	0.0	1.0	1.0	0.0	0.0	0.0
Connected and Accessible	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0
Functional and Reliable	1.0	1.0	1.0	1.0	1.0	0.7	0.7	0.7	1.0
Cost-Effectve	0.5	0.5	0.2	0.5	1.0	-0.2	0.0	0.3	0.7
Overall Average	**0.50**	**0.50**	**0.67**	**0.50**	**0.88**	**0.50**	**0.29**	**0.50**	**0.67**
Rounded Evaluation Score	**50**	**50**	**65**	**50**	**90**	**50**	**30**	**50**	**65**

	Intersection Improvement (Continued)								Safety
Criteria (by TSP Goal)	***(15) Boeckman Rd/Boberg Rd***	***(17) Boeckman Rd/Parkway Ave***	***(18) Boeckman Rd/Canyon Cr Rd***	***(19) Boeckman Rd/Stafford Rd***	***(23) Town Center lp/Vlahos Dr***	***(29) Wilsonville Rd/Town Center Lp W***	***(32) Miley Rd/I-5 SB Ramps***	***(34) Miley Rd/NE Airport Rd***	***Grahams Ferry Road/Clutter Road Intersection Realignment***
Safe									
Area of Special Safety Concern	0	0	0	0	0	0	0	0	1
Geometric Design/User Expectations	1	0	0	0	0	0	0	0	1
Connected and Accessible									
Access	0	0	0	0	0	0	1	1	0
Regional Compatibility	0	1	0	1	0	0	1	1	1
Functional and Reliable									
Motor Vehicle Capacity	1	1	1	1	1	1	1	1	1
Efficient Operations	1	1	1	1	1	1	1	1	1
Freight Mobility	0	1	0	0	0	0	1	1	1
Cost-Effectve									
Economic Prosperity	0	1	0	1	1	1	0	0	0.5
Fundability	1	0	1	0	1	0.5	0.5	0.5	0
Project Readiness	0	0	0	0	0	0	0	0	0

Average Score (by Goal)									
Safe	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
Connected and Accessible	0.0	0.5	0.0	0.5	0.0	0.0	1.0	1.0	0.5
Functional and Reliable	0.7	1.0	0.7	0.7	0.7	0.7	1.0	1.0	1.0
Cost-Effectve	0.3	0.3	0.3	0.3	0.7	0.5	0.2	0.2	0.2
Overall Average	**0.38**	**0.46**	**0.25**	**0.38**	**0.33**	**0.29**	**0.54**	**0.54**	**0.67**
Rounded Evaluation Score	**40**	**45**	**25**	**40**	**35**	**30**	**55**	**55**	**65**

Current Wilsonville Cross-Section Standards

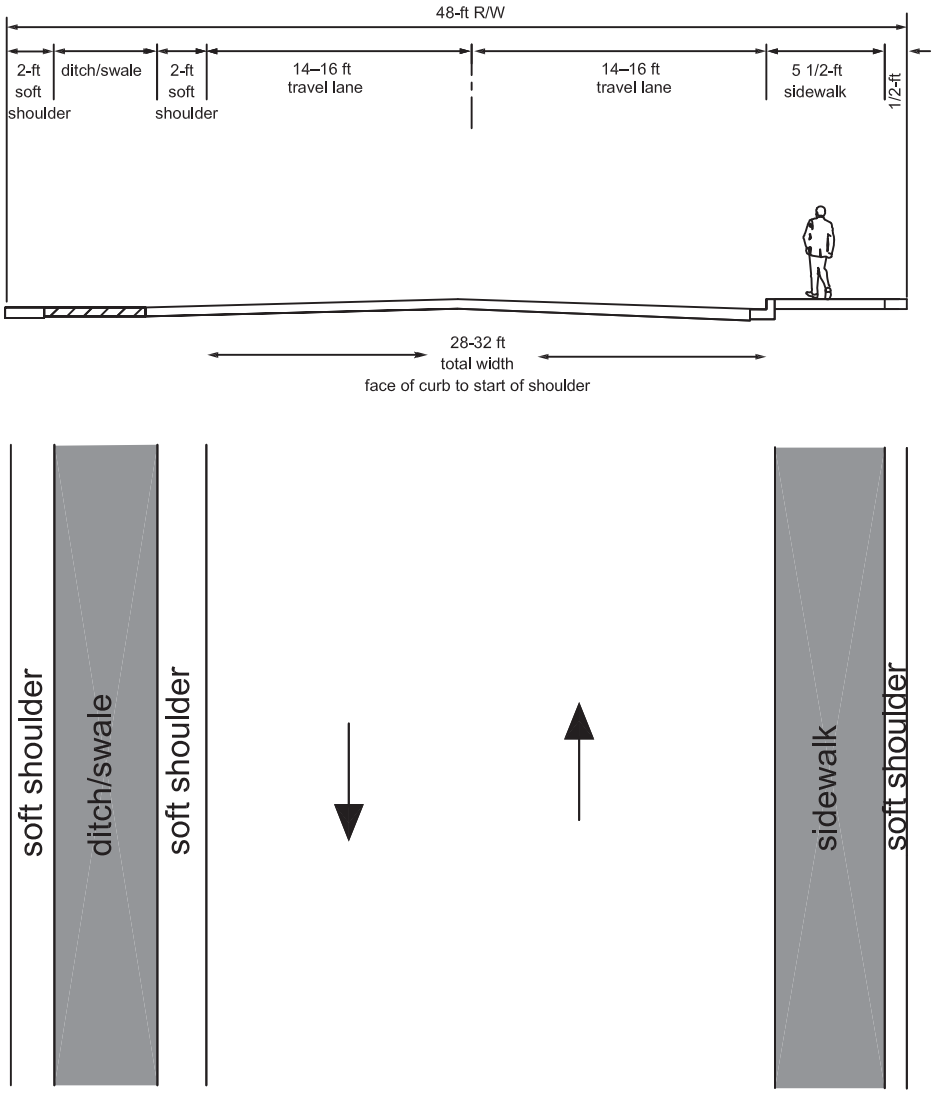
Table 4.I
Functional Classification

Functional Classification	Description	Design Capacity[1] Vehicles per Day	Number of Lanes[2]
Major Arterial	Serves major centers of activity; has highest traffic volume corridors; serves most trips entering and leaving urban areas, and through trips; serves intra-urban travel between major suburban or business districts; has fully or partially controlled access. Carries higher volumes than the minor arterial. Can include dual left turns at the intersections.	32,000	5
Minor Arterial	Interconnects and augments major arterials; serves trips of shorter distance and lower level of mobility than major arterials; places more emphasis on land access; does not usually penetrate identifiable neighborhoods. No parallel parking is included on this roadway.	10,000 – 32,000	3 – 5
Major Collector	Provides land access and traffic circulation within residential, commercial, and industrial areas; distributes trips from arterial system to ultimate destination and vice versa. This roadway type can also include on-street parking.	1,500 – 10,000	3
Minor Collector	Provides land access and traffic circulation within residential and commercial areas; provides connection from arterial system to residential and rural roadways and vice versa. This roadway type can occur with or without on-street parking.	1,200 – 3,000	2
Residential Street	Comprises all facilities not classified as a higher class; permits direct access to abutting land uses; connects to higher class systems; low level of mobility; discourages through traffic movement. Includes landscape strip and sidewalk. This classification includes residential cul-de-sacs or residential collectors with adjacent parking.	1,200	2
Rural Road	Consists of a facility outside of the urban growth area; primarily provides access to land adjacent to the collector network and serves travel over relatively short distances.	1,200	2

[1]Planning-level capacity is not based on functional classification, but primarily on the number of lanes.
[2]Number of Lanes taken from 2001 City of Wilsonville Street Standards.

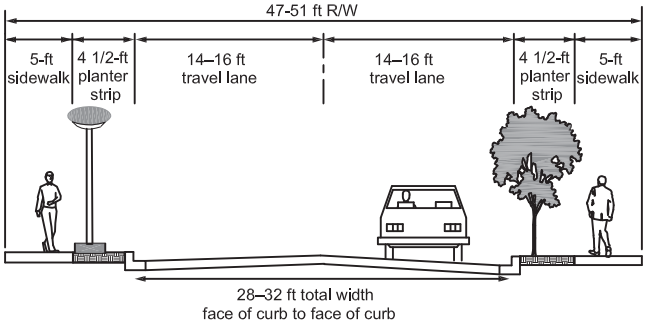
Notes: *****Design capacity based on Level of Service "D", 5 percent commercial vehicles, 10 percent right turns, 10 percent left turns, peak hour factor 95-90 percent, peak hour directional distribution 55 to 60 percent, peak hour 9 to 12 percent of daily volume and average signal timing for collector and arterial streets.

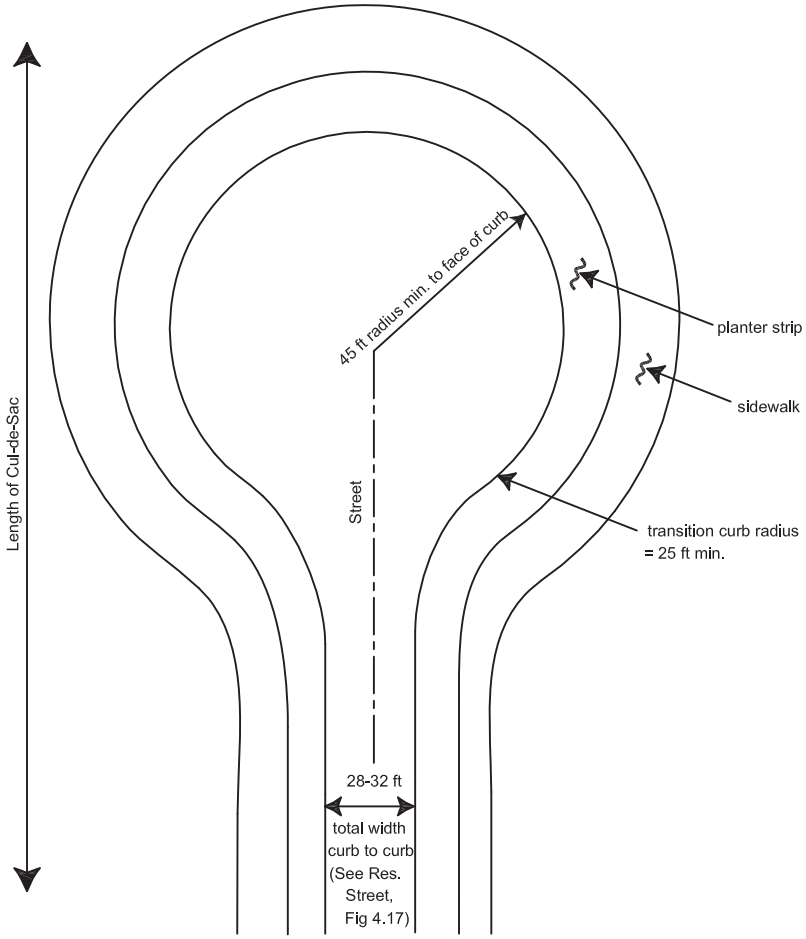
*****Functional classification is a general guide that covers planning level capacity, number of lanes, and description. These are not the only factors that go into the classification of a road. Other issues are: access, interconnection with other roads, safety, surrounding land use designations, kind of traffic usage and purpose, and intersection configuration.



Notes:
1. Curb width (1/2') is included in sidewalk/planter strip width.
2. 2' soft shoulder is provided from edge of concrete surface for maintenance and survey monument protection.
3. No striping on street. Signage as required.
4. On-street parking on sidewalk side is optional consistent with emergency requirements.
5. The rural road cross-section is a special application only. It may only be used with prior approval from City Planning Department and City Engineer.

Figure 4.12
Rural Road Street Standards

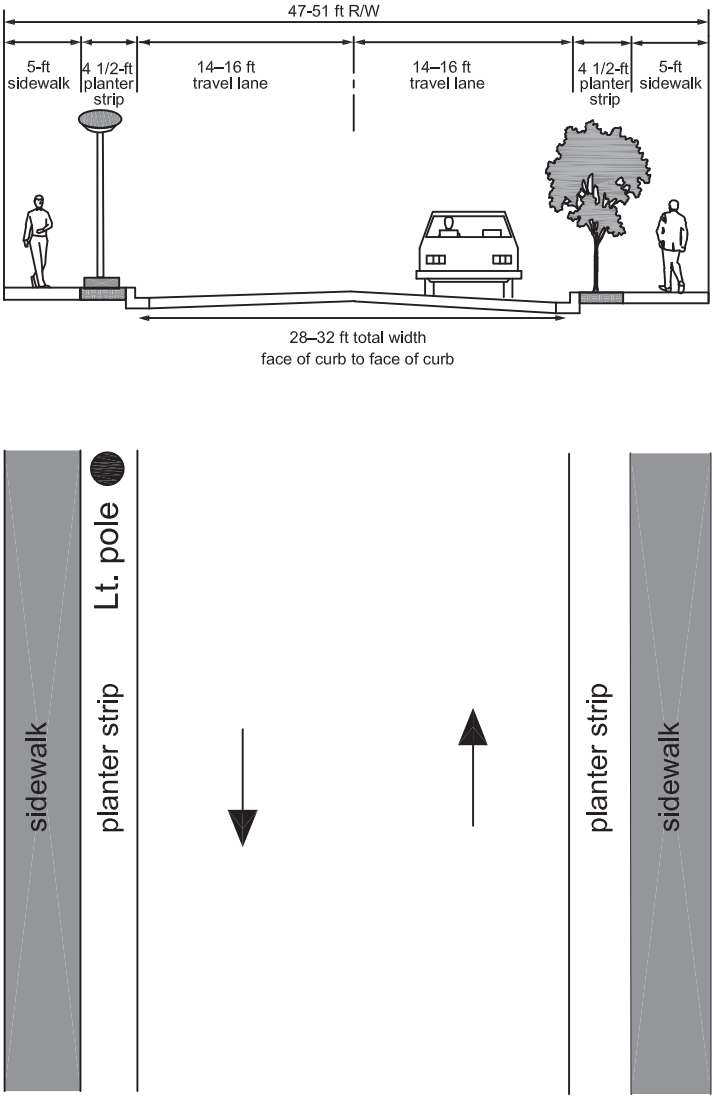




Notes:

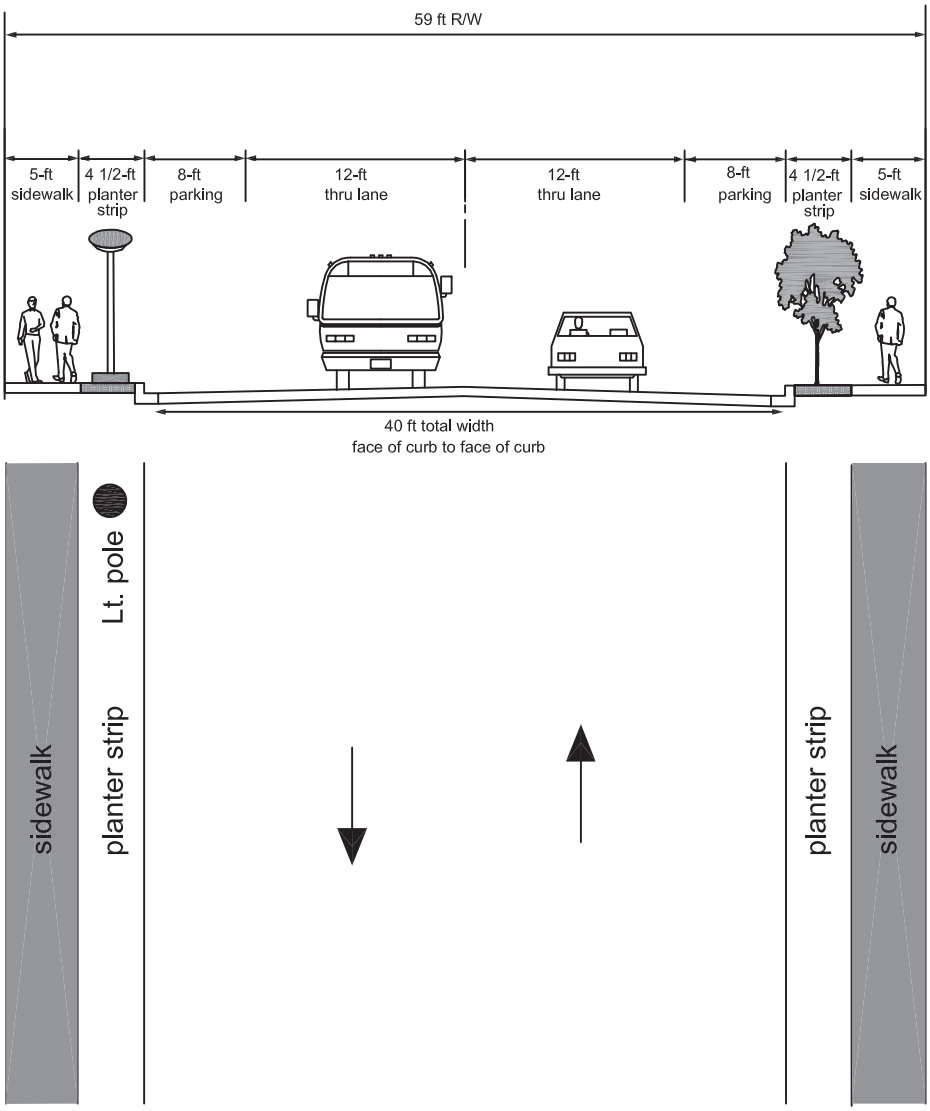
1. A 4 ½' planter strip is required on all cul-de-sacs.
2. Curb width (1/2-foot) is included in planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required.
5. On-street parking is optional consistent with emergency requirements: Parking on one side only with 28' width. Parking on both sides with 32' width.
6. The length of the cul-de-sac shall be no longer than 200' from outside right-of way of bulb to near side right-of-way of intersecting street.
7. Dead end access roads in excess of 150-feet in length shall be provided with an approved turnaround.
8. Minimum 25' inner and 45' outer turning radii required.

Figure 4.13
Residential Street Cul-de-sac Standards



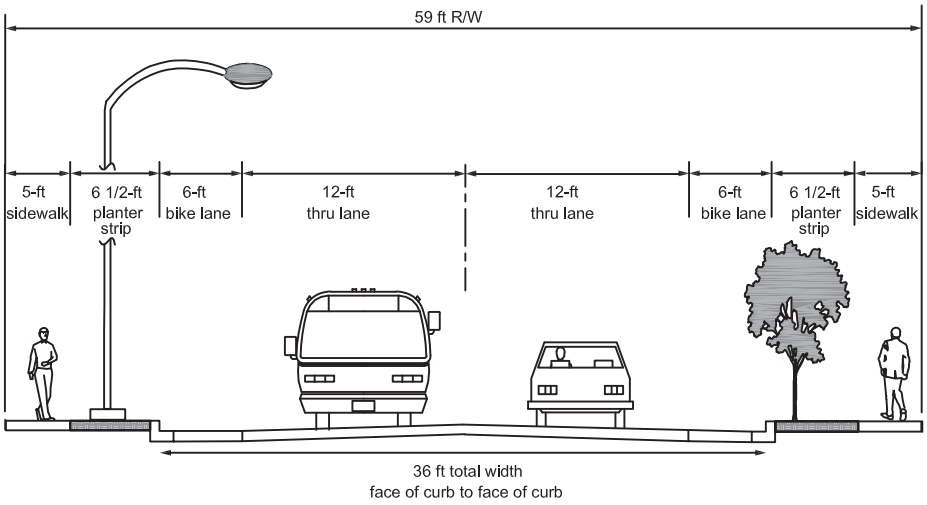
Notes:
1. A 4 ½' planter strip is required on all residential streets.
2. Curb width (½') is included in planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required.
5. On-street parking is optional consistent with emergency requirements: Parking on one side only with 28' width.

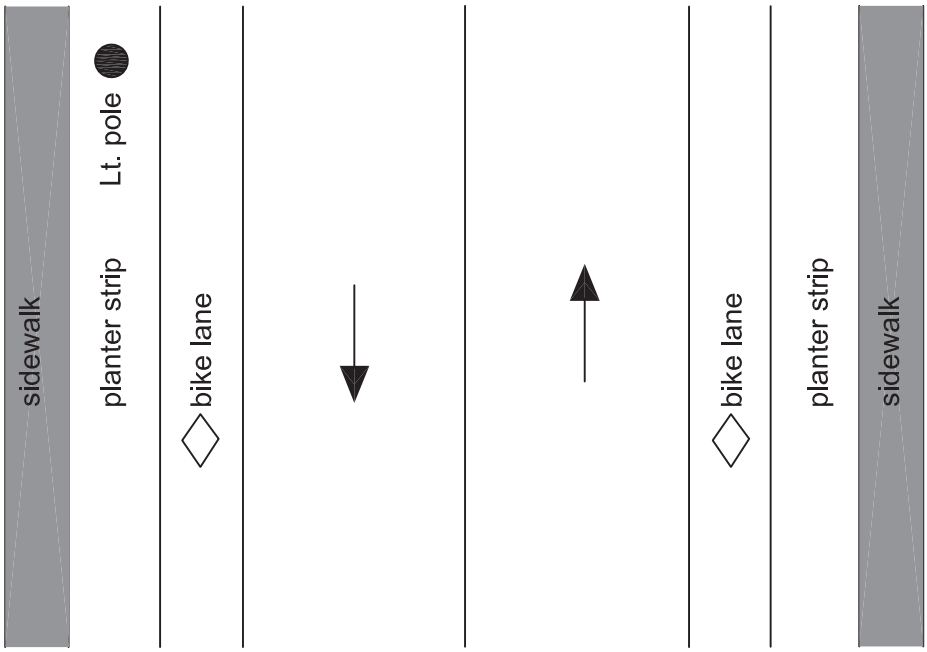
Figure 4.14
Residential Street Standards



Notes:
1. A 4 ½' planter strip is required on all residential collector streets.
2. Curb width (1/2 foot) is included in sidewalk or planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. No striping on street. Signage as required. Parking areas to be designated.
5. On-street parking on both sides is allowed consistent with emergency requirements.
6. Transit stop locations to be determined by Transit Director and located within parking area.
7. Residential (Transit) Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board, the Transit Director and the City Engineer.

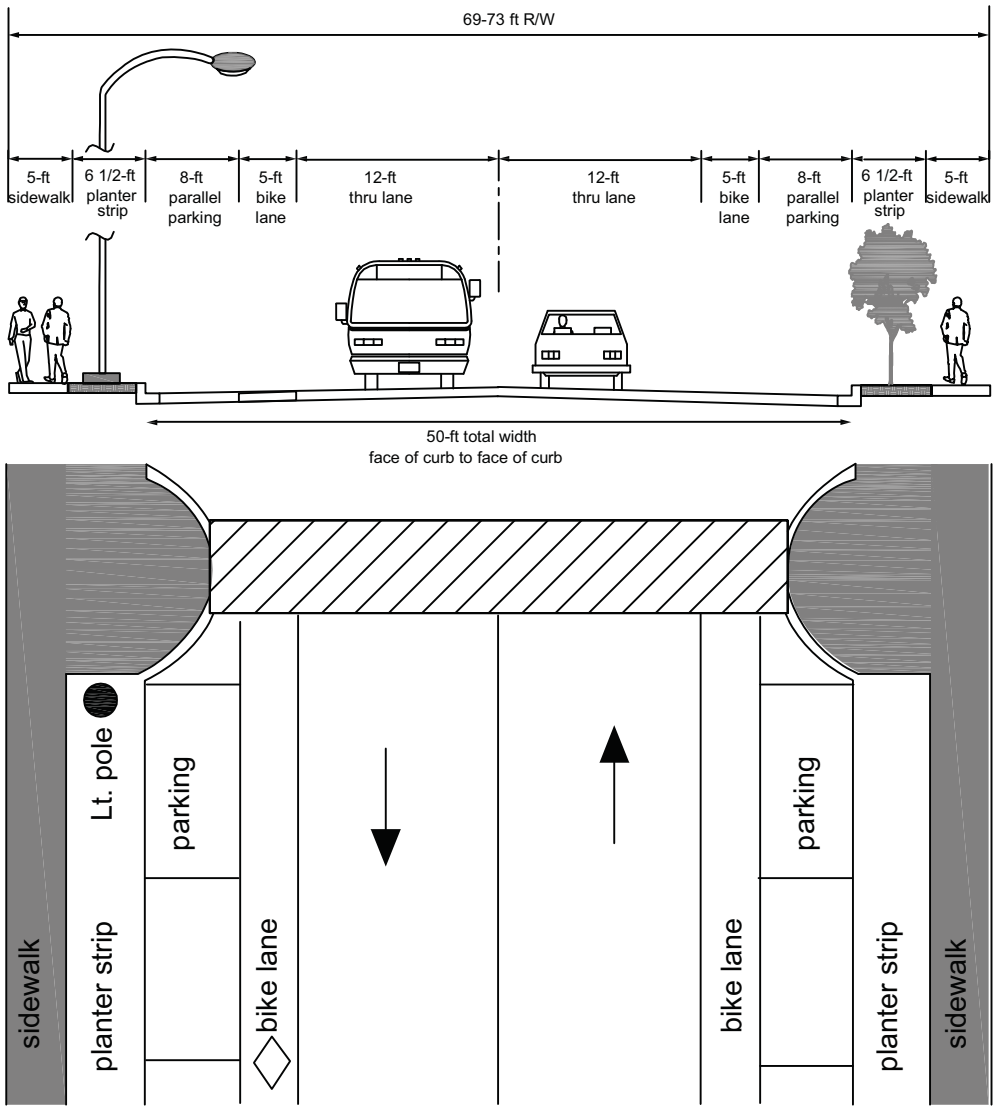
Figure 4.15
Residential (Transit) Street Standards





Notes:
1. A 6 ½' planter strip is required on all minor collector streets.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights and street trees shall be located within planter strip as required.
4. Striping and signage as required.
5. No on-street parking is allowed. Transit stop locations to be determined by Transit Director.

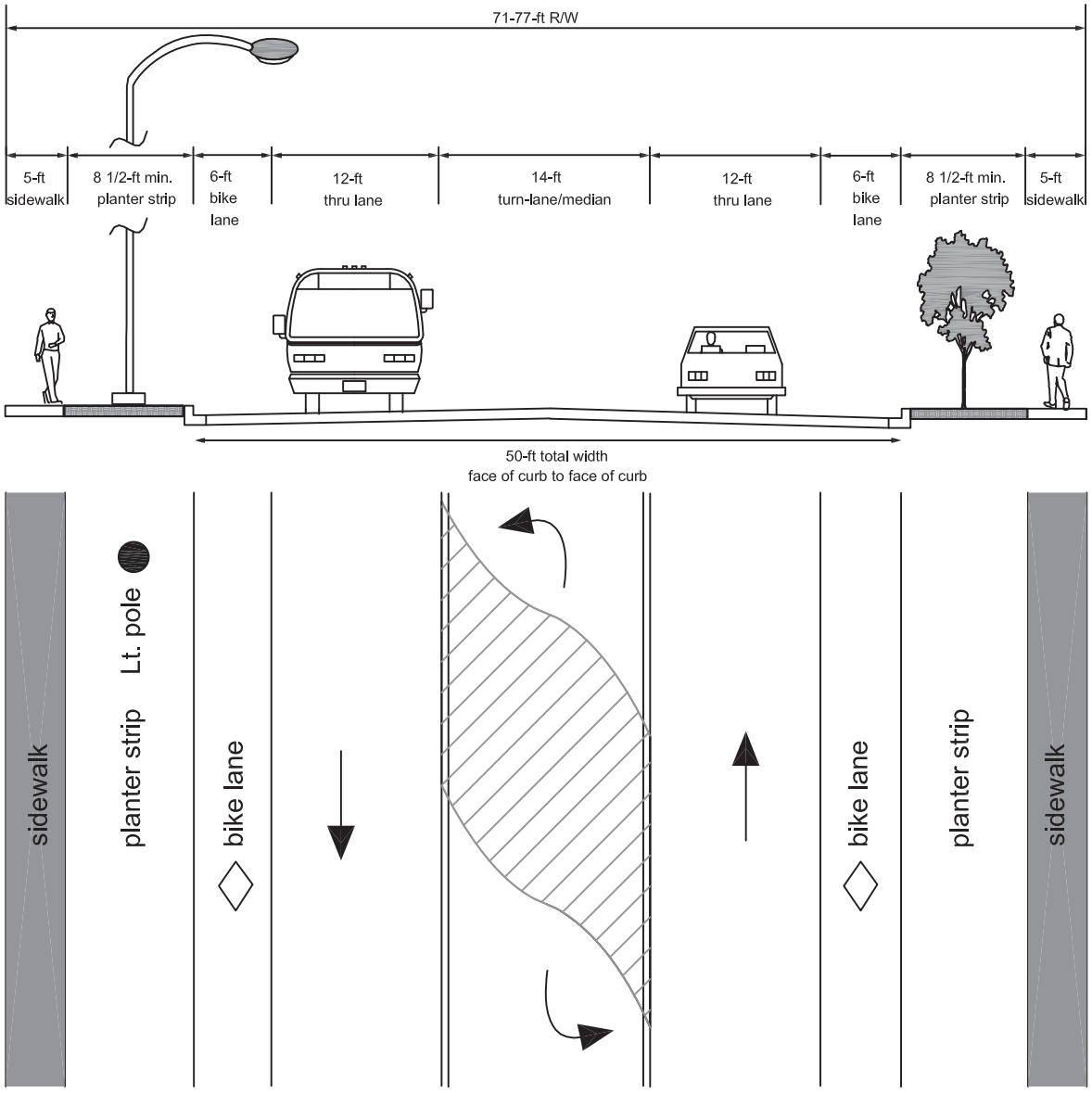
Figure 4.16
Minor Collector Street Standards
(Not to be used in residential areas)



Notes:

1. A 6 ½' planter strip is required on all minor collector with on-street parking streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 9 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 9 ½' wide and adjacent to curb, leaving a minimum of 5' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required. Bicycle lanes shall not be striped until volume reaches 1,500 vehicles/day or as determined by the City Engineer.
5. On-street parking on both sides is allowed. Transit stop locations to be determined by Transit Director and located within parking or at bulb-out area.
6. The Minor Collector with On-Street Parking Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board and the City Engineer.
7. If on-street parking is proposed, then additional modeling wil be required to confirm level-of-service standards.

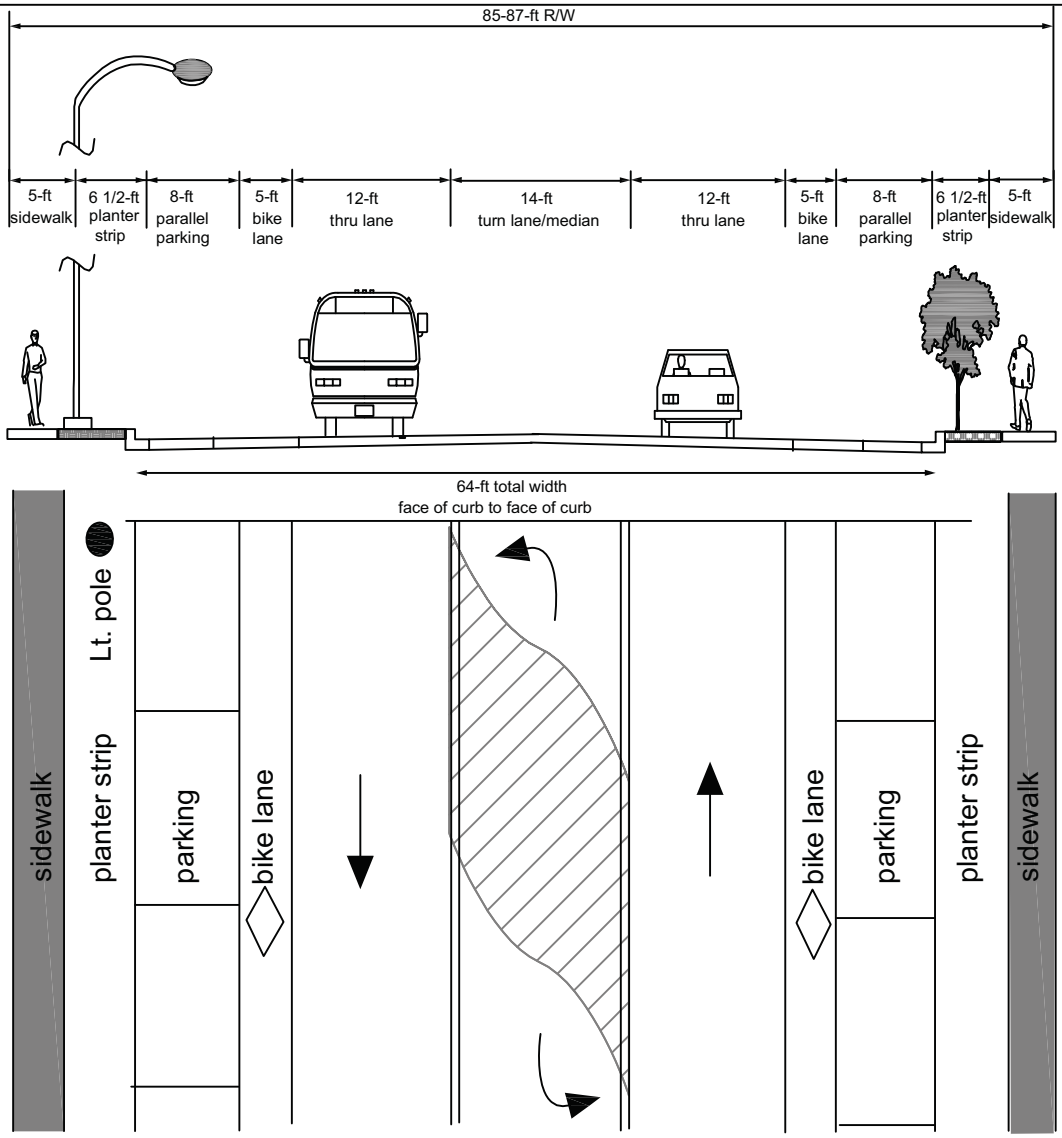
Figure 4.17
Minor Collector with On-street Parking Standards



Notes:

1. An 8 ½' planter strip is required on all major collector streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.

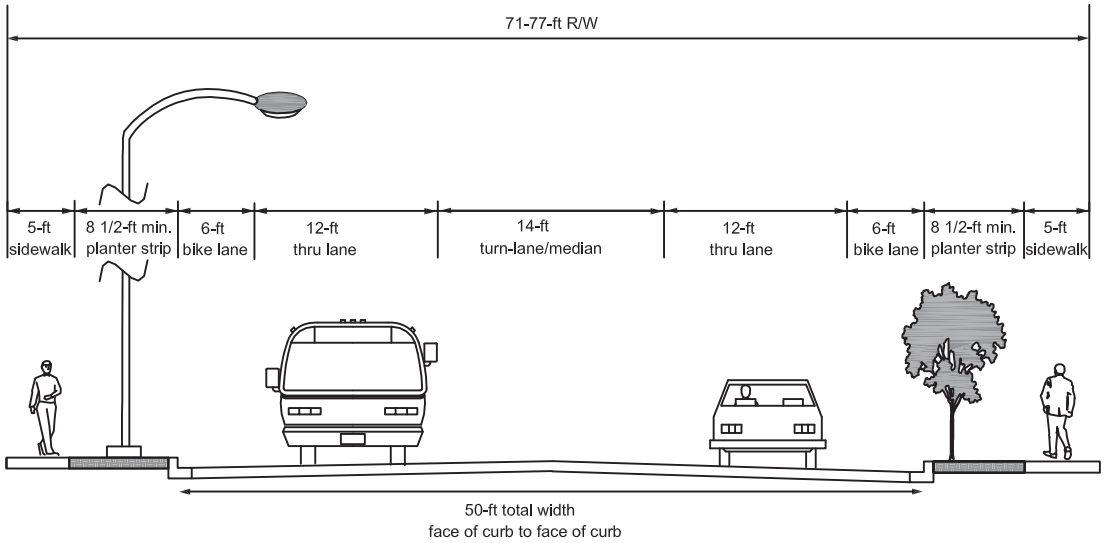
Figure 4.18
Major Collector Street Standards

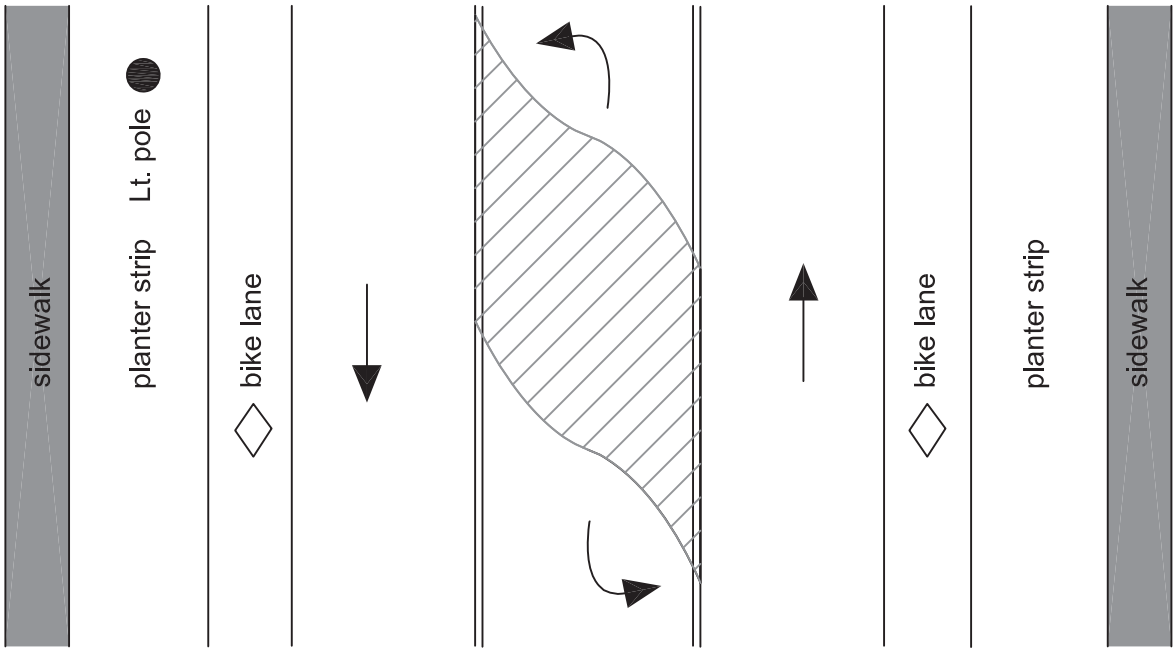


Notes:

1. A 6 ½' planter strip is required on all major collector with on-street parking streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (1/2 foot) is included in sidewalk or planter strip width.
3. Street lights shall be located in planter strip, or if commercial/retail, sidewalk as required.
4. Striping and signage as required. Bicycle lanes shall not be striped until 1,500 vehicles/day or as determined by the City Engineer.
5. On-street parking on both sides is allowed. Transit stop locations to be determined by Transit Director and located within parking or at bulb-out.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See minor collector with on-street parking for crosswalk with bulb outs.
8. The Major Collector with On-Street Parking Street Standard is a special case by case application and may only be used with prior approval from the Development Review Board and the City Engineer.
9. If on-street parking is proposed, then additional modeling wil be required to confirm level-of-service standards.

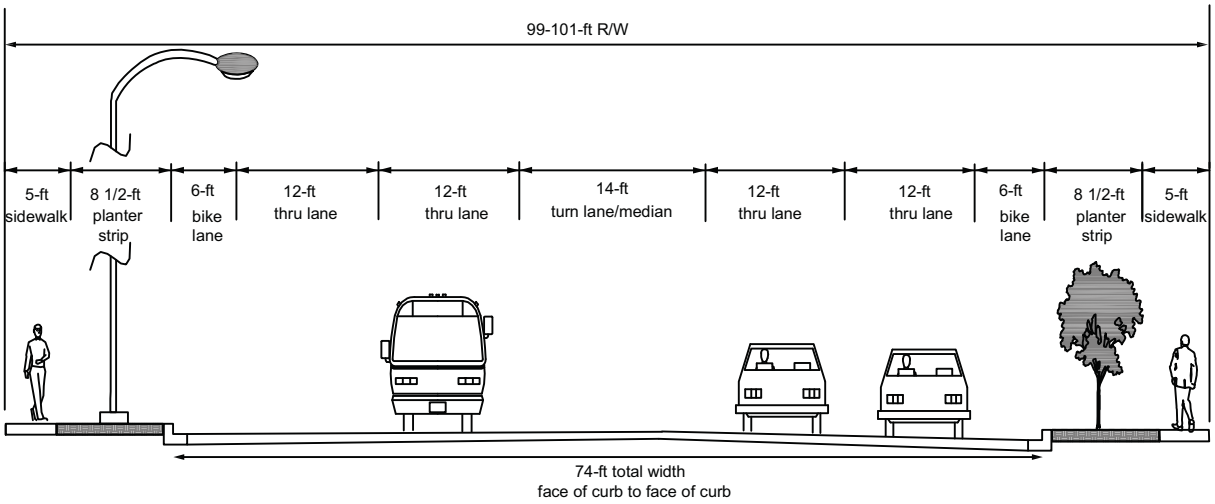
Figure 4.19
Major Collector with On-Street Parking Standards

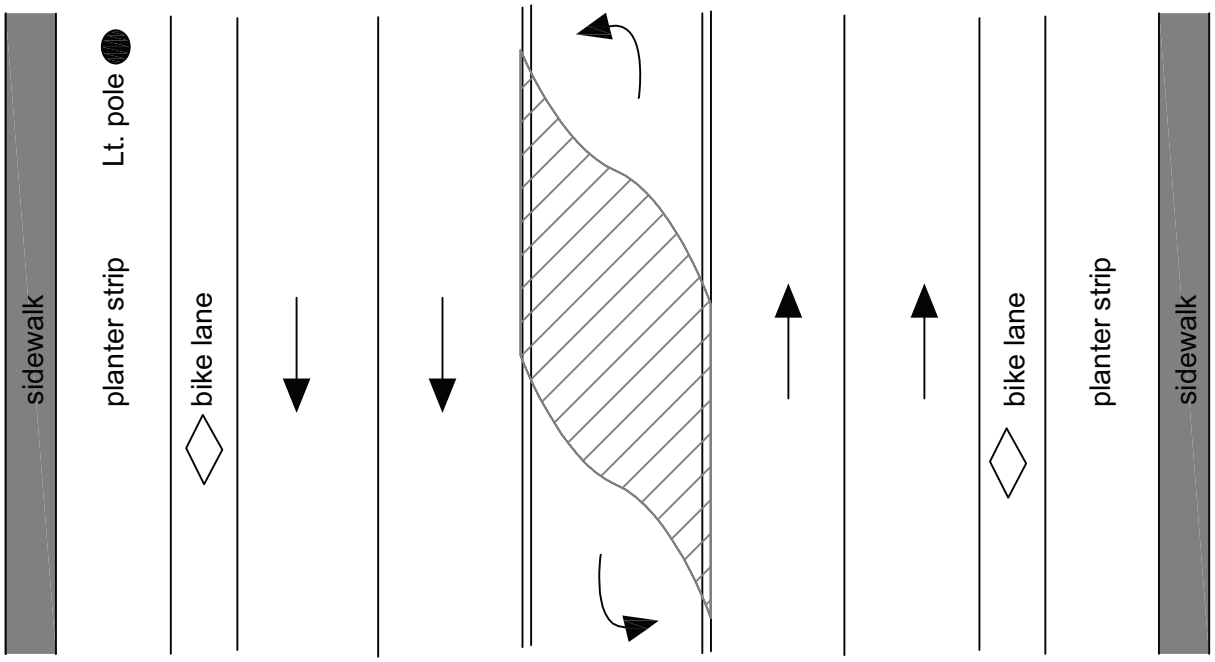




Notes:
1. An 8 ½' planter strip is required on all minor arterial streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 10 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 10 ½' wide and adjacent to curb, leaving a minimum of 6' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See special setback requirements for minor arterial street sections.

Figure 4.20
Minor Arterial Street Standards

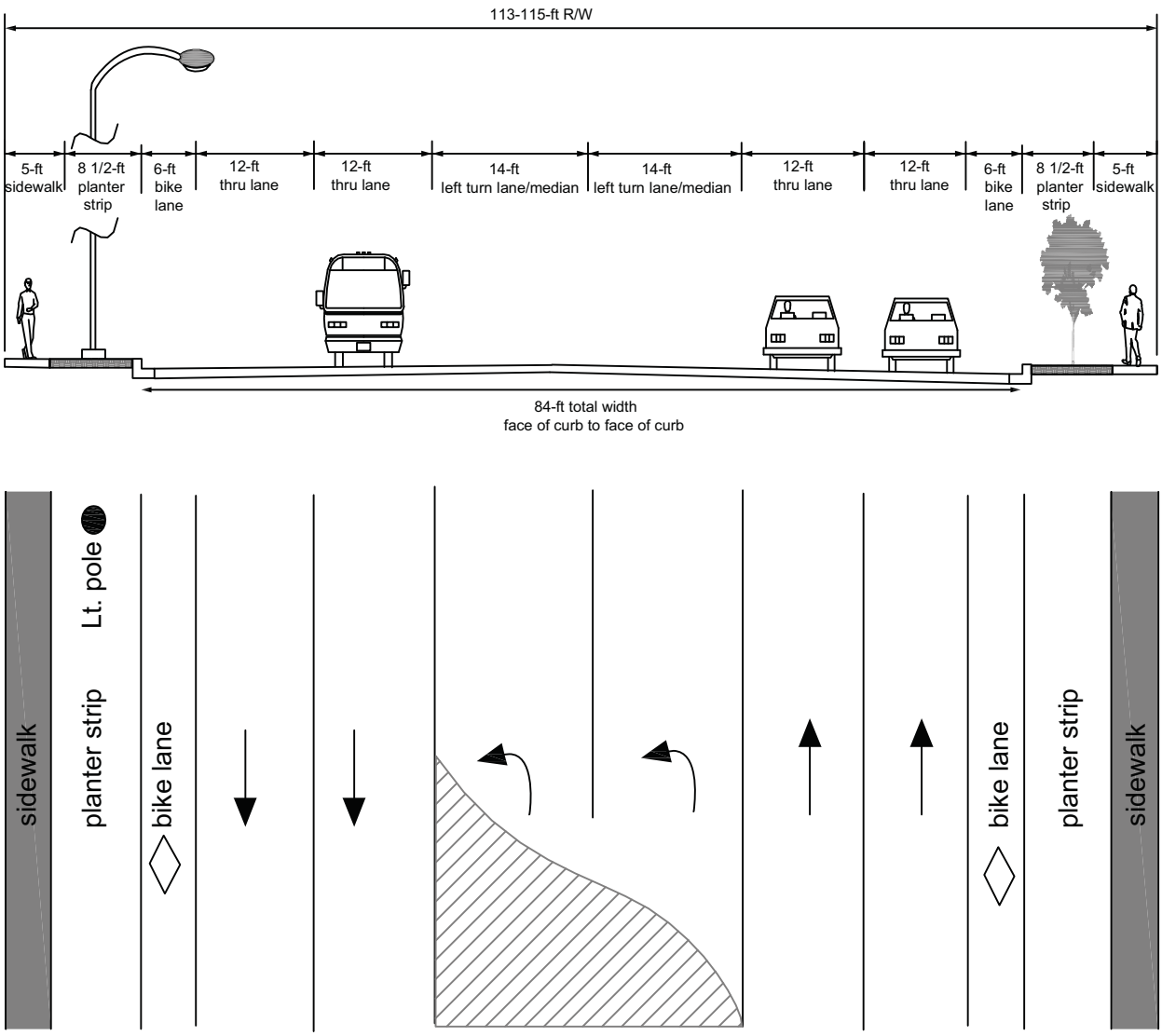




Notes:

1. An 8 ½' planter strip is required on all major arterial streets in all non- commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 12 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 12 ½' wide and adjacent to curb, leaving a minimum of 8' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.

Figure 4.21
Major Arterial Street Standards



Notes:

1. An 8 ½' planter strip is required on all major arterial with dual left-turn streets in all non-commercial/retail areas. Width of sidewalk and planting strip may be combined in commercial/retail areas for a total width of 12 ½': street trees shall be in 4' tree wells only and adjacent to curb, sidewalk shall be 12 ½' wide and adjacent to curb, leaving a minimum of 8' clear sidewalk.
2. Curb width (½') is included in sidewalk or planter strip width.
3. Street lights shall be located within planter strip or, if commercial/retail area, sidewalk as required.
4. Striping and signage as required.
5. On-street parking is not allowed. Transit stop locations to be determined by Transit Director.
6. Median shall be landscaped when not needed as a left-turn lane.
7. See special setback requirements for major arterial.

Figure 4.22
Major Arterial with Dual Left-turns Street Standards

Appendix H

Draft Recommended Higher Priority Project List (DKS, 2013)

Technical Memorandum

TO: Project Management Team

FROM: Scott Mansur, PE; Carl Springer, PE; Brad Coy, PE; DKS Associates

DATE: April 30, 2013

SUBJECT: **Draft Recommended Higher Priority Project List (Task 7.1)** P10068-007

This document presents the draft recommended "Higher Priority Transportation Solutions Package" and "Planned Transportation Solutions Package" being developed as a part of the City of Wilsonville's Transportation System Plan (TSP) update. These two solutions packages are summarized below:

- The "Higher Priority Transportation Solutions Package" includes the recommended projects reasonably expected to be funded through 2035. These are the highest priority solutions to meet the City's most important transportation system needs. These projects will inform the City's yearly budget and 5-year Capital Improvement Plan (CIP).
- The "Planned Transportation Solutions Package" includes the entire list of projects that would contribute to the City's desired transportation system through 2035. It represents a coordinated transportation network and adequate facilities to serve the community through 2035. The State stipulates that projects listed in the TSP form the legal basis for exacting developer-provided improvements. The "Planned Transportation Solutions Package" documents all of the City's desired projects so that it is clear what improvements are needed to ensure that the City's transportation network fully supports its continued growth.

This memorandum first explains the decision-making framework used to develop the packages. Then, it provides the draft project lists for these two packages for the Planning Commission and City Council to review in preparation for the public's review.

Decision-Making Framework

Many factors have contributed to the recommendations outlined in this memorandum. Technical reports were developed by professional transportation engineering and planning consultants and were overseen by a Project Management Team, the Planning Commission, and a TSP Technical Advisory Committee (TAC). The oversight helped to ensure the large array of factors were carefully considered and documented and that the plan recommendations are consistent with City, State, and regional policies and standards.

Key Planning Assumptions

The key planning assumptions that have informed the TSP update include land use growth assumptions and prior planning work. The plan assumes build-out of the current Urban Growth

Boundary and assumes population and employment growth as forecasted by Metro through 2035.[1] The research and analysis conducted to form some of the recommendations were developed in part through the Regional Transportation Plan adopted June, 2010. The City-specific research and analysis was conducted between Spring, 2011 and August 2012. The following technical memoranda support the recommendations:

- *Existing Funding* memorandum[2]
- *Transportation System Gaps and Deficiencies* memorandum[3]
- *Solutions Analysis and Proposed Funding Program* memorandum[4]

Policy Framework

Wilsonville has developed seven over-arching goals that have helped guide the plan update. These goals are consistent with current city, state, and regional goals.

1. **Safe:** Follow the most current safety practices for design, operations and maintenance of transportation facilities.
2. **Connected and Accessible:** Provide all users with access to integrated facilities and services that connect Wilsonville's neighborhoods, schools, parks, employment centers, and retail areas to each other and to the surrounding region.
3. **Functional and Reliable:** Provide, manage, and maintain sufficient transportation infrastructure and services throughout Wilsonville to ensure functional and reliable multimodal and freight operations as development occurs.
4. **Cost Effective:** Pursue cost effective transportation solutions that provide the greatest benefit to Wilsonville residents and businesses, while mitigating impacts to the City's social, economic, and environmental resources.
5. **Compatible:** Develop and manage a transportation system that is consistent with the City's Comprehensive Plan and coordinates with other local, regional, and state jurisdictions.
6. **Robust:** Encourage and support the availability of a variety of transportation choices for moving people and goods.
7. **Promotes Livability:** Design and construct transportation facilities in a manner that enhances the livability of Wilsonville and the health of its residents.

Draft TSP Policies, which are largely based on existing policies found in the Comprehensive Plan, TSP, Transit Master Plan, and Bicycle and Pedestrian Plan, have been developed to guide the plan development and help form the recommendations.

[1] *Wilsonville Transportation System Plan Update – Forecasting Methodology*, DKS Associates, October 25, 2011.
[2] *Wilsonville Transportation System Plan Update – Existing Funding (Task 2.2)*, DKS Associates, November 13, 2012.
[3] *Wilsonville Transportation System Plan Update – Transportation System Gaps and Deficiencies (Task 4.1)*, DKS Associates, February 9, 2012.
[4] *Wilsonville Transportation System Plan Update – Solutions Analysis and Proposed Funding Program (Task 6.4),* DKS Associates, July 6, 2012.

Solutions Identification

Because transportation funding is limited, Wilsonville recognizes the importance of being fiscally responsible in managing and improving its transportation system. Figure 1 illustrates the regional approach to determining cost-effective transportation improvements to address an identified traffic congestion need. Before a roadway capacity improvement is considered, the Metro Regional Transportation Functional Plan recommends considering these five categories from top to bottom until a viable solution is identified.

This process takes a multi-modal, network-wide approach to identifying transportation system solutions. It includes the following five categories, listed in the order of consideration:

- **Manage** the performance of congested locations with strategies that reduce traffic conflicts, increase safety, and encourage more efficient usage of the transportation system. Intersection improvements are considered to fall under this category.
- **Reduce** the driving demand at congested locations by improving walking, biking, and transit options.
- **Revisit** land use decisions and congestion thresholds to support shorter driving trips or modified travel decisions.
- **Extend** streets to increase connectivity and create parallel routes that reduce the driving demand on congested facilities.

Figure 1: Solutions Identification Process

- **Expand** existing streets or intersections to increase the driving capacity of congested facilities.

This approach enables more cost-effective solutions to increase transportation system capacity and helps to encourage multiple travel options, increase street connectivity, and promote a more cost-effective transportation system.

City Funding Outlook

The City of Wilsonville uses multiple funding sources to pay for the construction, operation, and maintenance of its transportation infrastructure and services. Table 1 lists the primary transportation funding sources available to the City along with an explanation of how they are used and what funding levels are estimated to be available through the year 2035 for capital improvements. Because the TSP's 2035 horizon year assumes full build-out of the City's Urban

Growth Boundary (UGB), these estimates are also based on revenues that would be obtained from the development and growth associated with full build-out of the current UGB.

As indicated, the City may expect to have approximately $104 million available from City sources for transportation-related capital improvement projects through the year 2035. These estimated funding levels were based on a review of the past ten years of projects and current budget estimates and are only planning-level approximations. They do not include the Regional, State, or Federal funds that are likely to be available to partially fund the City's projects that are included in the Regional Transportation Plan (RTP) and that are estimated later in this memorandum in association with specific projects.

Table 1: Estimated Funding Levels Available through 2035 for Capital Improvements

Funding Source	Use	Estimated Funding Available through 2035 for Capital Improvements[a]
Street System Development Charges (SDCs)	Capital improvement projects that increase transportation system capacity	$42 million
Developer Contributions	Exactions related to development impacts, on-site facilities, and half-street frontage improvements	$30 million
West Side Plan – Urban Renewal District (URD)	Improvements made to reduce blight and attract development within the West Side Plan URD	$27 million
Year 2000 Plan – Urban Renewal District (URD)	Improvements made to reduce blight and attract development within the Year 2000 Plan URD	$5 million
Park System Development Charges (SDCs)	Bicycle and pedestrian projects between and through the City parks	Minimal (may fund smaller off-street bike and pedestrian projects)
Road Maintenance Regulatory Fund[a]	Major street repairs and reconstruction (including slurry seals, overlays, and reconstruction of existing roads)	None (for maintenance only)
Road Operating Fund[a]	Roadway operations and minor repairs (including signal lights, striping, curbs, gutters, and potholes)	None (focused on operations)
Street Lighting Fund[a]	Ongoing street light maintenance, operations, and infill	None (for ongoing costs)
Transit Fund[a]	Transit operations and programs	None (for operations and maintenance)
Community Development Fund[a]	Planning, engineering, and other administration (e.g., City staff and supply costs)	None (for administration)
	Total City Funds	**$104 million**

[a] Because roadway operations and maintenance are expected to be covered by related funds, no contributions from these funds are assumed to be available for capital improvements.

In the *Solutions Analysis and Proposed Funding Program* memorandum,[5] all of the identified transportation solutions were estimated to cost the City approximately $170 million, which exceeds the expected $104 million of available funding by more than $66 million. Therefore, Wilsonville

[5] *Wilsonville Transportation System Plan Update – Solutions Analysis and Proposed Funding Program (Task 6.4),* DKS Associates, July 6, 2012.

must choose how it will invest its limited available funding to develop a "Higher Priority Solutions Package" of transportation improvements that will best meet its identified needs through the year 2035.

Evaluation and Prioritization

Due to funding limitations, the City is unable to construct all of its identified transportation solutions. To help select which projects to include in the Higher Priority Transportation Solutions Package, the projects were evaluated and prioritized. Many projects had been evaluated and prioritized in recently adopted mode-specific transportation plans. As a result, the TSP evaluation process varied for different modes as follows:

- **Motor Vehicle Projects:** The projects were ranked according to a point-based technical scoring methodology based on evaluation criteria that developed based on the City's transportation goals. This allowed for a consistent method to understand how well the projects are expected to meet the City's transportation goals and policies. However, community input is still critical to determine which projects should be considered the highest priorities and changes are likely to occur within the current recommended Higher Priority Transportation Solutions Package.
- **Bicycle, Pedestrian, and Transit Projects:** The project priorities in the 2006 Bicycle and Pedestrian Master Plan and 2008 Transit Master Plan were reviewed, and a few changes were made based on staff and public input. The majority of the higher priority bicycle and pedestrian projects were identified as potential projects to construct in the near-term, even if it would require them to be constructed separately from associated motor vehicle projects.

The details of the project evaluation and scoring are included in the *Solutions Analysis and Proposed Funding Program* memorandum.[6]

Performance Measures

Performance measurement is a valuable process that can help the City to manage and improve its transportation system. As an approach to transportation planning, performance measurement is a topic that has been receiving increased national and regional attention. The new federal transportation legislation, Moving Ahead for Progress in the 21st Century (MAP-21), transitions the nation towards performance-based, outcome-driven planning processes. In doing so, this law is not prescriptive regarding what the standards should be, but instead requires that states and metropolitan planning organizations (MPOs) establish their own targets and measures. This encourages the framework of performance measurement throughout the nation without requiring a one-sit-fits-all approach.

Though it preceded MAP-21, Metro's Regional Transportation Plan (RTP) also focuses on performance targets and standards. While there are some performance targets specified by Metro, Metro requires each city to identify its own performance measures for five areas and then to

[6] *Wilsonville Transportation System Plan Update – Solutions Analysis and Proposed Funding Program (Task 6.4),* DKS Associates, July 6, 2012.

evaluate them with each successive TSP update to check the City's progress.[7] The performance measure areas are listed in Table 2 along with the 2035 performance targets recommended for Wilsonville and how they will be measured. The majority of these performance measures were selected because they are recommended by Metro and can be relatively easily measured using Metro's travel demand model, which is also the basis for the future travel demand forecasting performed for the TSP. The one performance measure that differs is safety, and this is because the City already has such low collision rates that instead of being able to reduce them, they should just maintain them below the statewide average.

Table 2: City of Wilsonville Performance Measures

Performance Area	2035 Performance Target[a]	How Measured
Safety	Maintain collision rates below the statewide average	Analysis of ODOT collision data
Vehicle Miles Traveled (VMT) Per Capita	Reduce VMT/capita by 10% compared to 2005	Estimate using travel demand model
Freight Reliability	Reduce vehicle hours of delay for truck trips by 10% from 2005[a]	Estimate using travel demand model for roadways on City's freight network
Congestion	Reduce vehicle hours of delay[8] (VHD) per person by 10% from 2005	Estimate using travel demand model
Walking, Bicycling, and Transit Mode Shares	Triple walking, biking and transit mode share from 2005	Use Metro mode split forecasts and provide qualitative assessment

[a] Performance targets are for the 2035 horizon year. Performance tracking during intermediate years should be compared against interpolated values.
[b] Delay is defined in the 2035 RTP as the amount of time spent in congestion > than .9 V/C (see p.5-7 of RTP)

Draft Recommended Higher Priority Solutions Package

The Higher Priority Solutions Package identifies which transportation solutions have the highest priority for implementation and area reasonably expected to be funded through the year 2035. These solutions are expected to help the City to build, maintain, and operate a transportation system that most efficiently and effectively transport people and goods with the purpose of supporting the quality of life of residents and the economic vitality of businesses.

Solutions Categories

The Higher Priority projects were separated into the following categories:

- **RE – Roadway Extensions (Multi-Modal Connectivity):** New transportation facilities in Wilsonville will connect neighborhoods to one another and to other important destinations. Many of the bicycle and pedestrian improvements related to roadway extensions will fill important system gaps so that neighborhoods have improved non-motorized connectivity, while roadway extension projects are the key motor vehicle improvements that provide increased connectivity in Wilsonville. The roadway extensions help the City to meet the one-

[7] Section 3.08.230(D), *Regional Transportation Function Plan*, Metro, Effective 09/08/10.
[8] Delay is defined in the 2035 RTP as the amount of time spent in congestion > than .9 V/C (see p.5-7 of RTP)

mile arterial and half-mile collector spacing standards, consistent with City and regional policy.

- **RW – Roadway Widening (Capacity):** The purpose of the roadway widening projects is to increase roadway capacity.
- **UU – Urban Upgrades (Multi-Modal Connectivity and Safety):** The urban upgrade projects serve to complete existing roadways, and often improve connectivity by adding bike lanes, sidewalks, and turn lanes that accommodate access to adjacent neighborhoods. These projects improve the roadways so they meet the City's cross-section standards, which are based on functional classification.
- **SI – Spot Improvements (Transportation System Management and Operations):** There are multiple locations throughout the City where spot improvements are needed. These consist primarily of isolated intersection improvements but also include safety improvements.
- **BW, SR, LT, and RT – Standalone Bicycle and Pedestrian Improvements (Multi-Modal Connectivity and Safety):** While there are many bicycle and pedestrian projects that will be constructed along with an associated motor vehicle project, there are a number of projects that the City should construct separately. These include the highest priority bikeways/walkways (**BW**), Safe Routes to School projects (**SR**), local trails (**LT**), and regional trails (**RT**). In addition, the City has multiple large development areas, and future trail connections are planned through these areas, as identified in the City's Bicycle and Pedestrian Master Plan.
- **SM – SMART Transit:** The City's transit service is operated by South Metro Area Regional Transit (SMART), which is a department within the City. While the Transit Fund has a moderately strong revenue source (i.e., payroll tax) to fund ongoing transit service, SMART will still face funding challenges particularly for bus stop improvements and bus upgrades and purchases.

Higher Priority Project List

Table 3 lists the draft recommended Higher Priority Solutions Package projects along with a summary of project descriptions and costs. The project numbering for each category does not indicate priority but instead is based on the alphabetical listing by project name. Two tables that include additional project details are also provided in the appendix. Appendix Table A provides general project information, and Appendix Table B includes a sample cost breakdown of what funding sources may be used for each of the projects.

In addition, Figure 3 shows the project locations and includes five separate pages, starting on page 15. The first page shows the locations of all projects and then is followed by a separate page for each the four quadrants of the City using I-5 and Boeckman Road as dividing lines (i.e., Figure 3A/B/C/D). This set of figures identifies the projects using project numbers that correspond with Table 3 and the two appendix tables.

Table 3: Higher Priority Project List

Project		Description	Cost
Roadway Extensions			
RE-01	Barber Street Extension	Construct 2-lane roadway with bridge, bike lanes, and sidewalks from Kinsman Road to Coffee Lake Drive to facilitate access and circulation to WES Station and Villebois	$8,315,000
RE-02	Barber Street Extension (Part 2)	Construct remaining 2-lane roadway with bike lanes and sidewalks from Coffee Lake Drive to Montebello Drive to facilitate access and circulation to WES Station and Villebois	$400,000
RE-03	Barber Street through Villebois	Construct remaining 2-lane roadway with bike lanes and sidewalks from Monte Carlo Avenue to Grahams Ferry Road	$520,000
RE-04	Brown Road Extension	Construct remaining 2-lane roadway with bike lanes and sidewalks from Wilsonville Road to Boones Ferry Road (with connection at either Bailey Street or 5th Street); project also includes roadway connection to Kinsman Road (with bike lanes and sidewalks), portion of Tonquin Trail connecting to existing trial terminus on Arrowhead Creek Lane, and Brown Road/Kinsman Road intersection	$15,200,000
RE-05	Canyon Creek Road Extension	Construct remaining 3-lane roadway with bike lanes and sidewalks from existing terminus to Town Center Loop East; project also includes realigning a portion of Vlahos Drive (so it intersects Canyon Creek Road) and installing a traffic signal at the Town Center Loop East/Canyon Creek Road intersection	$3,500,000
RE-06	Costa Circle Loop Extension	Construct remaining 2-lane roadway with bike lanes and sidewalks from Barber Street to Villebois Drive to Mont Blanc Street	$3,000,000
RE-07	Kinsman Road Extension (North)	Construct 2-lane roadway with bike lanes and sidewalks from Ridder Road to Day Road when the area redevelops; project also includes traffic signals at Kinsman Road/Day Road and Kinsman Road/Ridder Road intersections	$6,500,000
RE-08	Kinsman Road Extension (South)	Construct 2-lane roadway with bike lanes and sidewalks from Barber Street to Boeckman Road; project also includes a roundabout at Kinsman Road/Boeckman Road intersection	$8,400,000
RE-09	Villebois Drive Extension	Construct 2-lane roadway with bike lanes and sidewalks from Costa Circle to Coffee Lake Drive	$390,000
RE-10	Villebois Drive Extension (Part 2)	Construct 2-lane roadway with bike lanes and sidewalks from Coffee Lake Drive to Boeckman Road	$250,000
Roadway Widening			
RW-01	Boeckman Road Bridge and Corridor Improvements	Widen road from Boberg Road to 500 feet east of Parkway Avenue to include additional travel lanes in both directions along with bike lanes and sidewalks; project includes reconstruction of the bridge over I-5 and improvements at Boeckman Road/Boberg Road and Boeckman Road/Parkway Avenue intersections	$13,600,000
RW-02	Day Road Widening	Widen road from Boones Ferry Road to Grahams Ferry Road to include additional travel lanes in both directions along with bike lanes and sidewalks; project includes improvements at the Day Road/Boones Ferry Road and Day Road/Grahams Ferry Road intersections	$6,600,000

Table 3 continued on next page.

(Continued) Table 3: Higher Priority Project List

Project		Description	Cost
Urban Upgrades			
UU-01	Boeckman Road Dip Improvements	Upgrade at vertical curve east of Canyon Creek Road to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks); project includes options should also be considered to make connections to the regional trail system and to remove the culvert and install a bridge	$5,850,000
UU-02	Boeckman Road Urban Upgrade	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks); project includes a traffic signal or roundabout at the Boeckman Road-Advance Road/Stafford Road-Wilsonville Road Intersection	$2,100,000
UU-03	Brown Road Upgrades	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks)	$3,500,000
UU-04	Grahams Ferry Urban Upgrade	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks); project includes a roundabout at the Grahams Ferry Road/Barber Street intersection	$2,400,000
UU-05	Parkway Avenue Urban Upgrade	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks)	$5,000,000
UU-06	Stafford Road Urban Upgrade	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks)	$3,900,000
UU-07	Tooze Road Urban Upgrade	Upgrade to meet applicable cross-section standards (i.e., 3 lanes with bike lanes and sidewalks); project includes a roundabout at the Grahams Ferry Road/Tooze Road intersection	$7,900,000
Spot Improvements			
SI-01	Clutter Road Intersection Improvements with Realignment or Grade Lowering	Install traffic signal and turn lanes along with either lowering grade of intersection by approximately 5 feet (Option A) or realigning Clutter Road approximately 500 feet to the north (Option B); these two options have approximately equal cost estimates and selection will depend on compatibility with future redevelopment	$1,860,000
SI-02	Grahams Ferry Railroad Undercrossing Project Development	Perform preliminary analysis to determine needs, feasibility, etc.	$500,000
SI-03	Stafford Road/65th Avenue Intersection Improvements	Improve turn radii, sight distance and grade differential by combining intersections as either a roundabout or traffic signal	$2,000,000
SI-04	Wilsonville Road/Town Center Loop West Intersection Improvements	Widen the north leg of the intersection and install a second southbound right-turn lane (dual lanes)	$500,000

Table 3 continued on next page.

(Continued) Table 3: Higher Priority Project List

Project		Description	Cost
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)			
BW-01	OIT/Parkway Avenue Enhanced Pedestrian Crossing	Install new pedestrian crossing at the transit stops near the OIT campus that include rectangular rapid flashing beacons (RRFBs), center pedestrian median island, signage, etc.	$65,000
BW-02	95th Avenue Sidewalk Infill	Fill in gaps in the sidewalk network on the east side of 95th Avenue from Boeckman Road to Hillman Court	$85,000
BW-03	Boberg Road Sidewalk Infill	Fill in gaps in the sidewalk network on the east side of the roadway from Boeckman Road to Barber Street	$375,000
BW-04	Boeckman Road Bike Lanes and Sidewalk Infill	Construct bike lanes (both sides of street) and sidewalks (south side of street) from Parkway Avenue to Canyon Creek Road	$515,000
BW-05	Willamette Way East Sidewalk Infill	Fill in gaps in the sidewalk network on the west side of the roadway from Chantilly to south of Churchill	$50,000
BW-06	Willamette Way West Sidewalk Infill	Construct a new sidewalk on west side of the roadway from Wilsonville Road to Paulina Drive	$50,000
BW-07	Boones Ferry Road Sharrows	Stripe sharrows (shared travel lanes) from 5th Street to Boones Ferry Park; this will connect Tonquin Trail (once the portion along the Brown Road Extension is completed) to Waterfront Trail	$5,000
BW-08	Town Center Loop Pedestrian Environment Improvements	Create more direct connections between destinations within Town Center area, improve accessibility to civic uses, retrofit sidewalks with curb ramps, highlight crosswalks with colored pavement, and construct other similar treatments; also construct shared-use path along Town Center Loop West from Wilsonville Road to Parkway Avenue	$460,000
BW-09	Town Center Loop Bike/Pedestrian Bridge	Construct bike/pedestrian bridge over I-5 approximately aligned with Barber Street to improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5	$4,000,000
BW-10	French Praire Drive Pathway	Construct five-foot wide shared-use path along French Prairie Drive from Country View Lane to Miley Road	$1,140,000
BW-11	Frog Pond Trails	Construct trail as part of Frog Pond development; with connections to three proposed parks and the proposed regional Boeckman Creek Trail	$290,000
BW-12	Parkway Center Trail Connector	Construct shared-use path as development occurs; with connection to proposed regional trail (Wiedeman Road Trail) on the south	$120,000
BW-13	Villebois Loop Trail	Construct shared-use path as part of Villebois development; include connections to Villebois Greenway, the Tonquin Trail, and the Village Center	$180,000
BW-14	Wayfinding Signage	Provide bicycle and pedestrian wayfinding signage directing users to/from the Tonquin Trail and other points of interest throughout the City	$65,000

Table 3 continued on next page.

(Continued) Table 3: Higher Priority Project List

Project		Description	Cost
Standalone Pedestrian and Bicycle Improvements (Safe Routes to School)			
SR-01	Boeckman Creek Primary Safe Routes to School Improvements	Construct new 10 to 12-foot bike path on the south side of the existing sidewalk that meanders south of the tree line and connects to the existing marked crosswalk near the school parking lot	$50,000
SR-02	Boones Ferry Primary Safe Routes to School Improvements	Construct shared-use path between Boones Ferry Primary and Wood Middle School, a bicycle parking shelter near the school, and a shared-use path connecting the bicycle shelter to the sidewalks along Wilsonville Road	$365,000
SR-03	Lowrie Primary Safe Routes to School Improvements	Construct shared-use path from Lowrie Primary School to Barber Street as part of Villebois development; include connections to new school, Tonquin Trail, and Barber Street	$225,000
SR-04	Wood Middle School Safe Routes to School Improvements	Construct a bicycle parking shelter near the school and a shared-use path connecting the bicycle shelter to the sidewalks along Wilsonville Road; also widen and stripe the Park at Merryfield Trail, which connects Wood Middle School to Camelot Street to the north	$365,000
Standalone Pedestrian and Bicycle Improvements (Local Trails)			
LT-01	Memorial Park Trail Improvements	Construct trails throughout Memorial Park, including the River Trail (part of the Memorial Park Center Loop Trail), Kolbe Homestead Trail, and Klein Homestead Trail	$260,000
Standalone Pedestrian and Bicycle Improvements (Regional Trails)			
RT-01	Boeckman Creek Trail	Construct north-south trail through east Wilsonville following Boeckman Creek, with connections to neighborhoods, parks, and intersecting roads (may need a boardwalk for various sections and would require a comprehensive public process)	$1,950,000
RT-02	Frog Pond Trail	Construct shared-use path through Frog Pond area (from Boeckman Creek Dip to Stafford Road) as part of development to provide an off-street alternative to Boeckman Road and link neighborhoods, schools, and parks	$290,000
RT-03	Tonquin Trail	Construct the remaining sections of the Tonquin Trail north of Boeckman Road in partnership with neighboring jurisdictions (City to construct portion within City limits and coordinate for portion farther north with other jurisdictions); portions south of Boeckman Road will be built with development or adjacent roadway improvements	$2,600,000
RT-04	Waterfront Trail Improvements	Improve the condition of the shared-use path as it passes underneath the I-5 Boone Bridge by removing the Jersey barriers, installing bollards, widening the trail, adding appropriate pedestrian features such as benches and lighting, and altering the grade of the path underneath the underpass to make it more easily accessible	$100,000
RT-05	Wiedeman Road Trail	Construct east-west trail in north Wilsonville near the Xerox campus with City responsible for portion through developed land and future developer responsible for portion on future development site	$340,000

Table 3 continued on next page.

(Continued) Table 3: Higher Priority Project List

Project		Description	Cost
Standalone Pedestrian and Bicycle Improvements (Regional Trails) (Continued)			
RT-06	Willamette River Bike/Pedestrian and Emergency Bridge Project Development	Perform feasibility study and project development for bike/pedestrian/emergency bridge over the Willamette River to provide a non-motorized alternative to the I-5 freeway deck	$1,380,000
RT-07	Villebois Eastern Open Space Trail	Construct shared-use path within open space along eastern edge of Villebois between Barber Street and Villebois Drive as part of Villebois development (will be part of Tonquin Trail)	$240,000
SMART Transit			
SM-01	SMART Buses	Replace old buses; also, outfit each bus with a tracking system and provide real-time display boards at the SMART Central station and other key routes	As Grant Funding Allows
		Total Cost of Higher Priority Projects	**$117,750,000**

Higher Priority Project Funding Sources

Table B in the Appendix includes a cost breakdown of what funding sources may be used for each of the draft recommended Higher Priority projects. While the project cost estimates are only planning level, they are intended to be sufficiently conservative to cover a moderate level of unanticipated costs that may arise at the time that the projects are constructed. Table 4 provides a side-by-side comparison of the estimated funding available (documented and explained in Table 1) and the estimated contributions that would be expected for the Higher Priority projects.

Table 4: Higher Priority Solutions Package Funding Sources through 2035

Funding Source	Capital Improvement Funding Estimates through 2035	
	Approximate Funding Available	*Contributions to Higher Priority Projects*
Street System Development Charges (SDCs)	$42 million	$44.5 million
Developer Contributions	$30 million	$24.0 million
West Side Plan – Urban Renewal District	$27 million	$26.5 million
Year 2000 Plan – Urban Renewal District	$5 million	$3.5 million
Park System Development Charges (SDCs)	$0.4 million[a]	$0.4 million
Local/Regional Partnerships	$3.0 million[a]	$3.0 million
Grants	$3.3 million[a]	$3.3 million
State and Federal Funding	$12.6 million[a]	$12.6 million
TOTAL	**$123.3 million[a]**	**$117.8 million**

[a] The approximate funding levels estimated for various sources were considered to be equal to the contributions due to the prior experience of how the City has been able to fund transportation projects. If the City is unable to obtain local/regional partnerships, grants, and/or state and federal funding, then the associated projects that assume these funding sources may have to be put on hold until other funding becomes available.

A comparison of the two columns in Table 4 shows that the estimated contributions are comparable to the estimated funding available for all funding sources. Only the estimated contribution from the

Street System Development Charges (SDCs) exceeds the available funding (by $2.5 million, or approximately 6 percent); however, the City's Street SDCs will need to be updated following the TSP update to account for the revised project list. Therefore, a slight increase of Wilsonville's Street SDC fees by approximately 6 percent could be made to cover the slightly higher funding need.

Special Considerations

The projects that have been included in the draft recommended Higher Priority Solutions Package are expected to be the highest priority solutions for the City to meet its most important transportation system needs. However, this project list is still in draft format, and there are two areas where special consideration is needed:

- **Direction Needed on Brown Road Extension Alternative:** Direction is needed regarding which Brown Road Extension to include in the TSP. The two options are to connect to Boones Ferry Road at either Bailey Street or 5th Street. Only one of the options can be provided because the existing railroad crossing at 5th Street would have to be closed in order for ODOT Rail to approve a new crossing at Bailey Street. Additional evaluation is being performed regarding these two options, and a separate memorandum comparing the alternatives will be presented as to the City Council at a future date for their consideration.
- **Pending Basalt Creek Refinement Plan Findings:** Various widening and intersection improvement projects have been identified to meet congestion needs on Day Road and Grahams Ferry Road in Northwest Wilsonville. However, these projects may not be needed depending on the findings of the Basalt Creek Transportation Refinement Plan.[9] The Basalt Creek Planning Area is located in the unincorporated urban area of Washington County between the cities of Wilsonville and Tualatin. The Transportation Refinement Plan, which is nearing completion, will define the major transportation network that will form the basis for concept planning of the area. At this time, no transportation alternatives have been selected; however, a new east-west roadway through the area would reduce traffic levels on Grahams Ferry Road and the portion of Day Road west of the Kinsman Road extension. As a consequence, these roadways could remain as three-lane roadways. Otherwise, if the "Improve Existing" option is selected, then Grahams Ferry Road and Day Road would need to be widened to five lanes with the dual turn lanes, as identified in the *Solutions Analysis and Proposed Funding Program* memorandum. The project Policy Advisory Group is scheduled to make a decision on the route of the east-west connector in mid-December 2012.

Summary

The projects included in the Higher Priority Solutions Package are intended to provide the most cost-effective solutions for the City's identified gaps and deficiencies. This approach is consistent with the Regional Transportation Plan. Table 5 provides a summary of costs based on project type.[10] The Higher Priority projects are expected to cost a total of approximately $117.8 million, which is consistent with the expected funding availability.

[9] *Basalt Creek Transportation Refinement Plan: Technical Report*, April 2012 Draft.

[10] Project costs do not account for additional transit-related needs, such as the SMART Options Program enhancements, bus replacements, or transit facilities and capital (e.g., buses and drivers) to serve new growth areas.

Table 5: Total Transportation Improvement Costs by Project Type

Project Type	2011 Cost Estimate
Roadway Extensions	$46,475,000
Roadway Widening	$20,200,000
Urban Upgrades	$30,650,000
Spot Improvements	$4,860,000
Standalone Bicycle and Pedestrian Improvements	$15,565,000
Total Higher Priority Project Cost	**$117,750,000**

To understand the relative funding of the Higher Priority projects by travel mode (with the exception of transit), a breakdown of project costs is shown in the Figure 2 pie chart. Transit costs were not included because they are primarily ongoing costs instead of one-time infrastructure improvements. It is also expected a significant portion of transit infrastructure improvements would be included with associated motor vehicle improvements or private development projects.

As shown in the pie chart, the majority of project costs would be associated with motor vehicle improvements; however, a considerable proportion would be contributed to bicycle and pedestrian projects (i.e., both standalone projects as well as bicycle and pedestrian facilities included with motor vehicle projects).

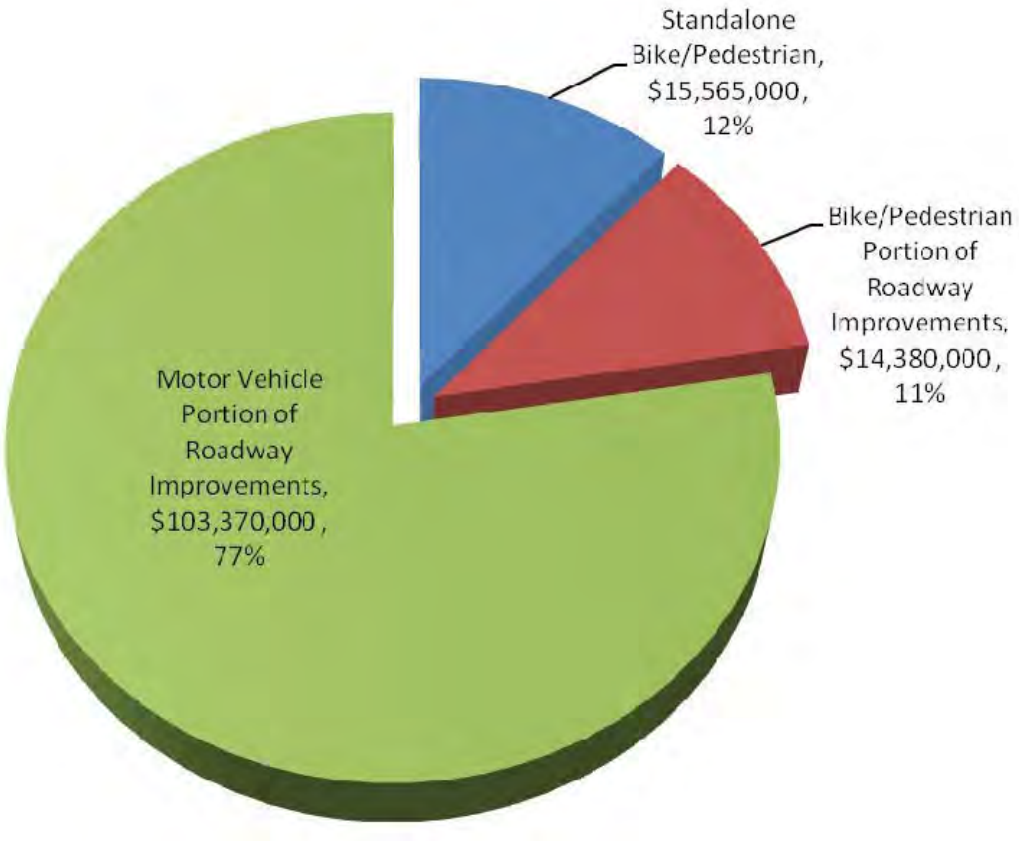
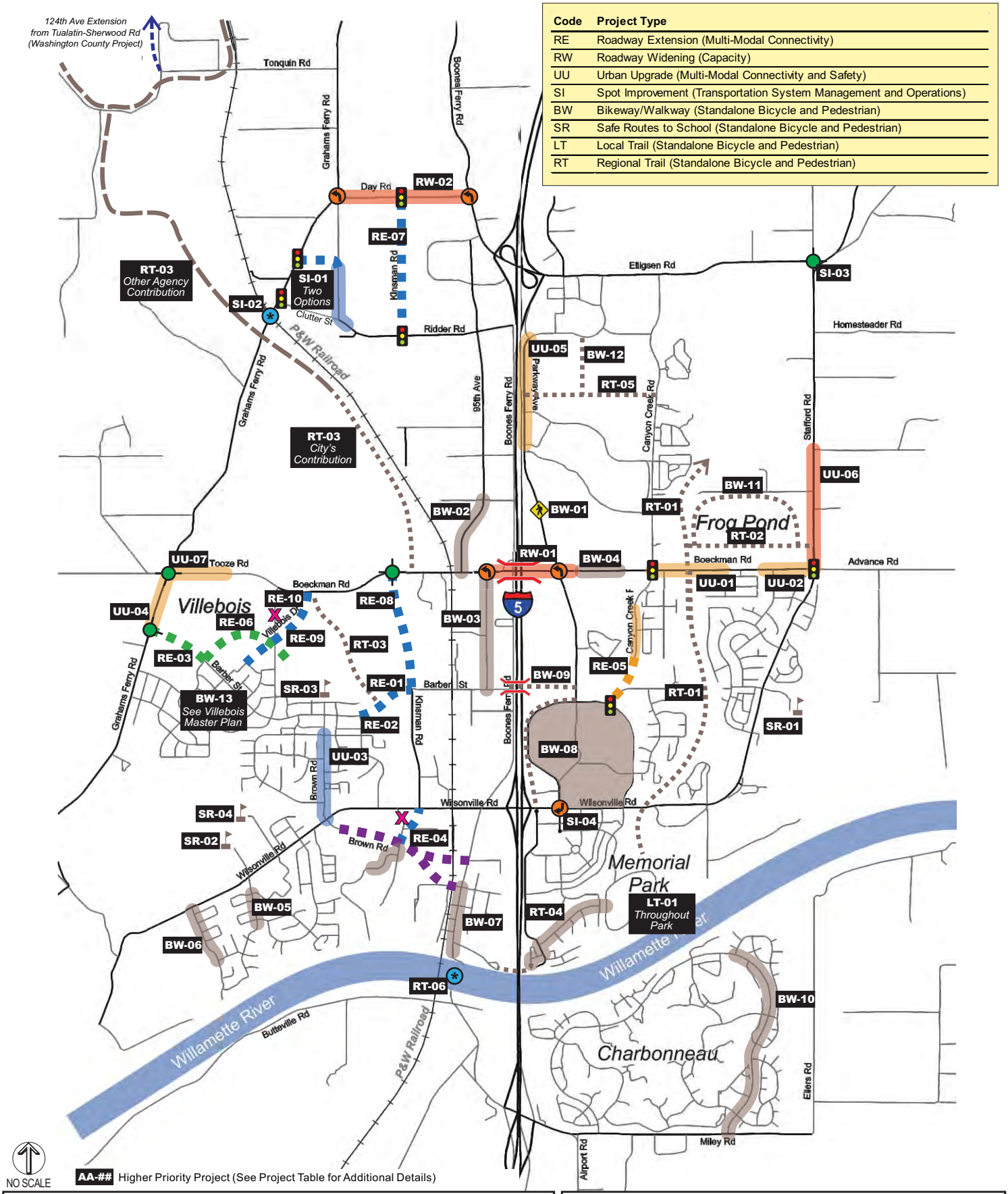


Figure 2: Proportion of Higher Priority Project Costs by Travel Mode



Code	Project Type
RE	Roadway Extension (Multi-Modal Connectivity)
RW	Roadway Widening (Capacity)
UU	Urban Upgrade (Multi-Modal Connectivity and Safety)
SI	Spot Improvement (Transportation System Management and Operations)
BW	Bikeway/Walkway (Standalone Bicycle and Pedestrian)
SR	Safe Routes to School (Standalone Bicycle and Pedestrian)
LT	Local Trail (Standalone Bicycle and Pedestrian)
RT	Regional Trail (Standalone Bicycle and Pedestrian)

LEGEND

Shared-Use Trail (City) — Shared-Use Trail (County)

Road Closure — Bridge Work — Pedestrian/Bicycle — Safe Routes to School

Roadway Widening/Upgrade
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

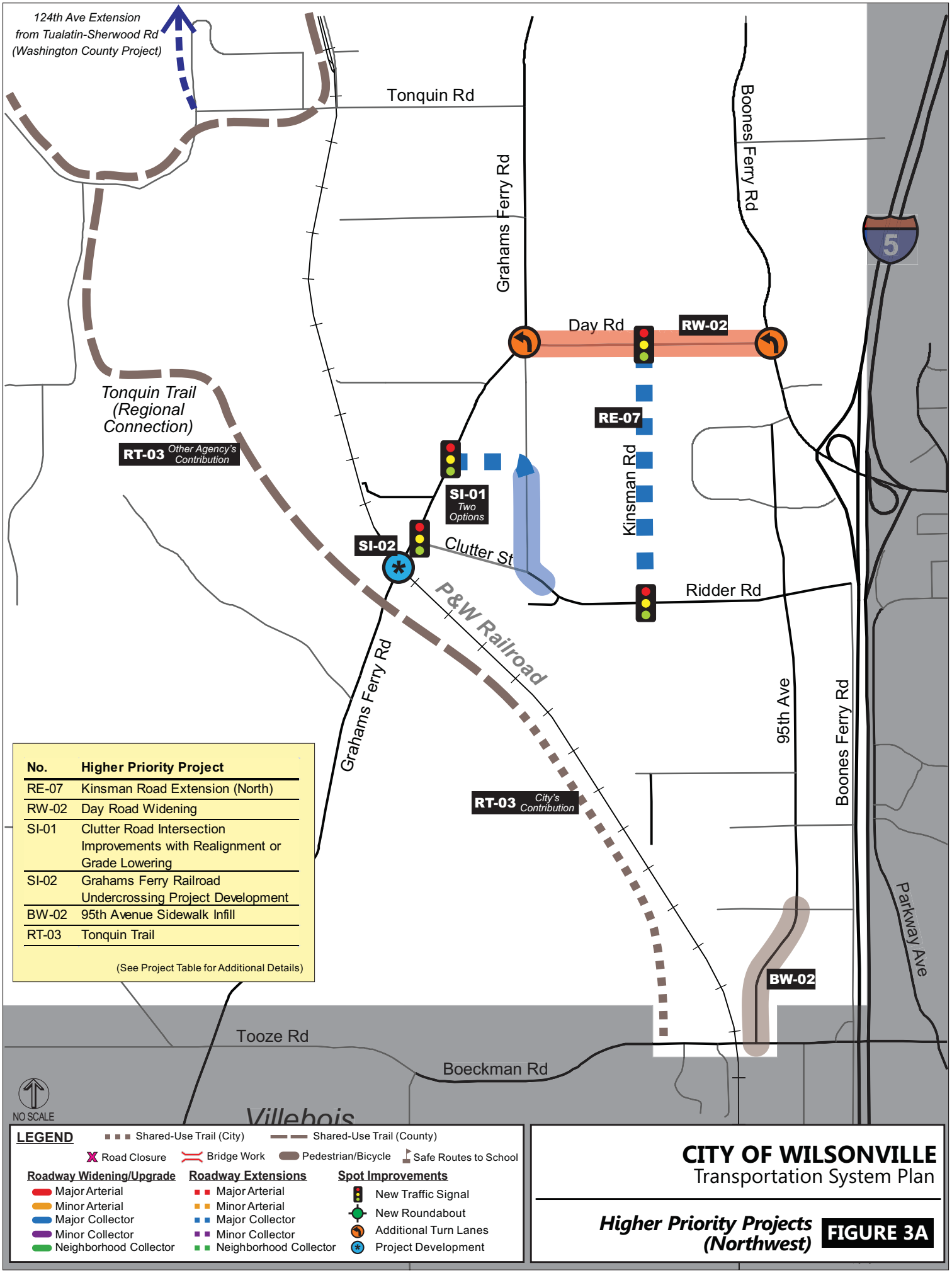
Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Spot Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes
- Project Development

CITY OF WILSONVILLE
Transportation System Plan

Higher Priority Projects (Entire City)

FIGURE 3



No.	Higher Priority Project
RE-07	Kinsman Road Extension (North)
RW-02	Day Road Widening
SI-01	Clutter Road Intersection Improvements with Realignment or Grade Lowering
SI-02	Grahams Ferry Railroad Undercrossing Project Development
BW-02	95th Avenue Sidewalk Infill
RT-03	Tonquin Trail

(See Project Table for Additional Details)

LEGEND

Shared-Use Trail (City) — Shared-Use Trail (County)

Road Closure — Bridge Work — Pedestrian/Bicycle — Safe Routes to School

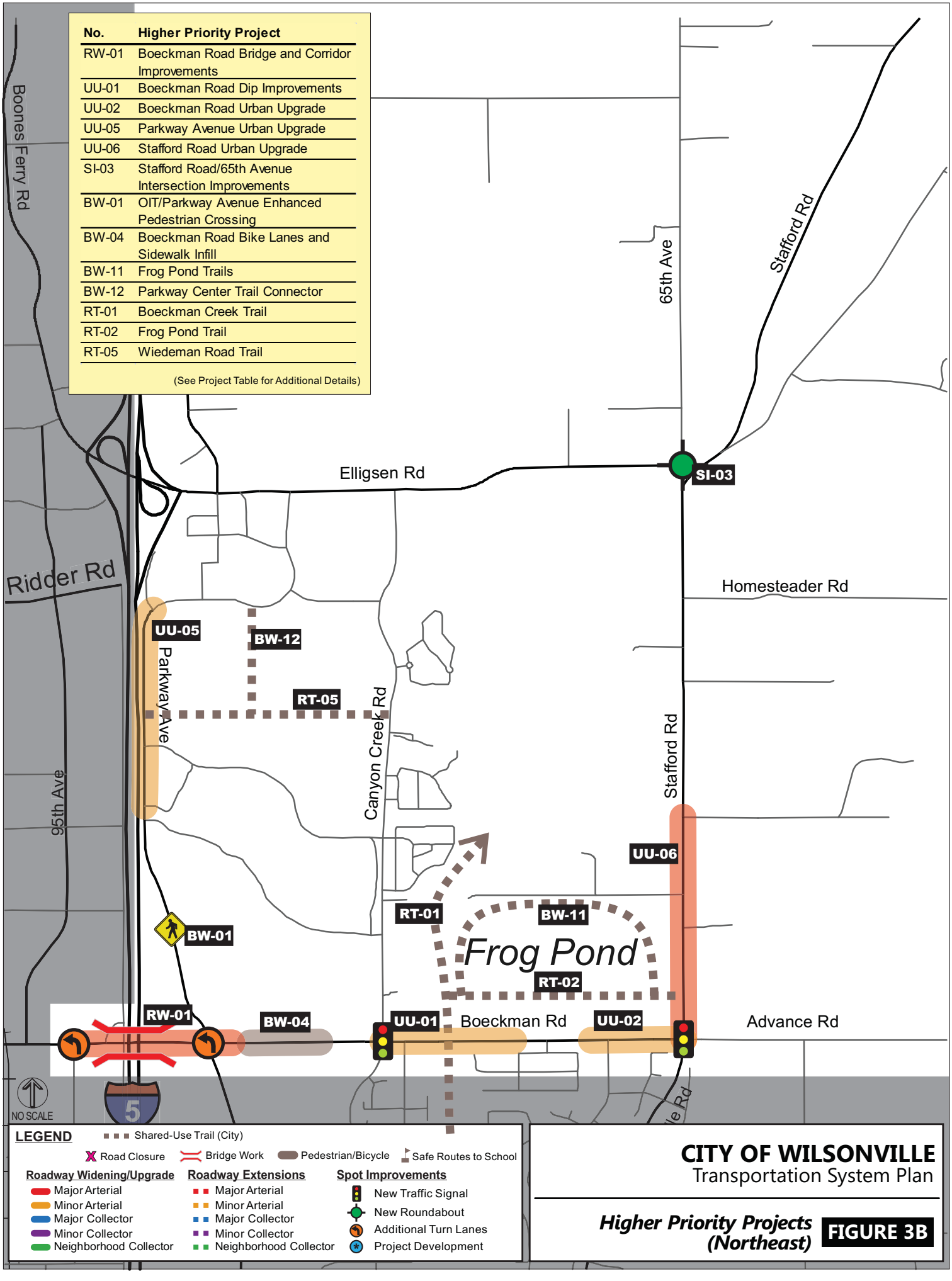
Roadway Widening/Upgrade
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

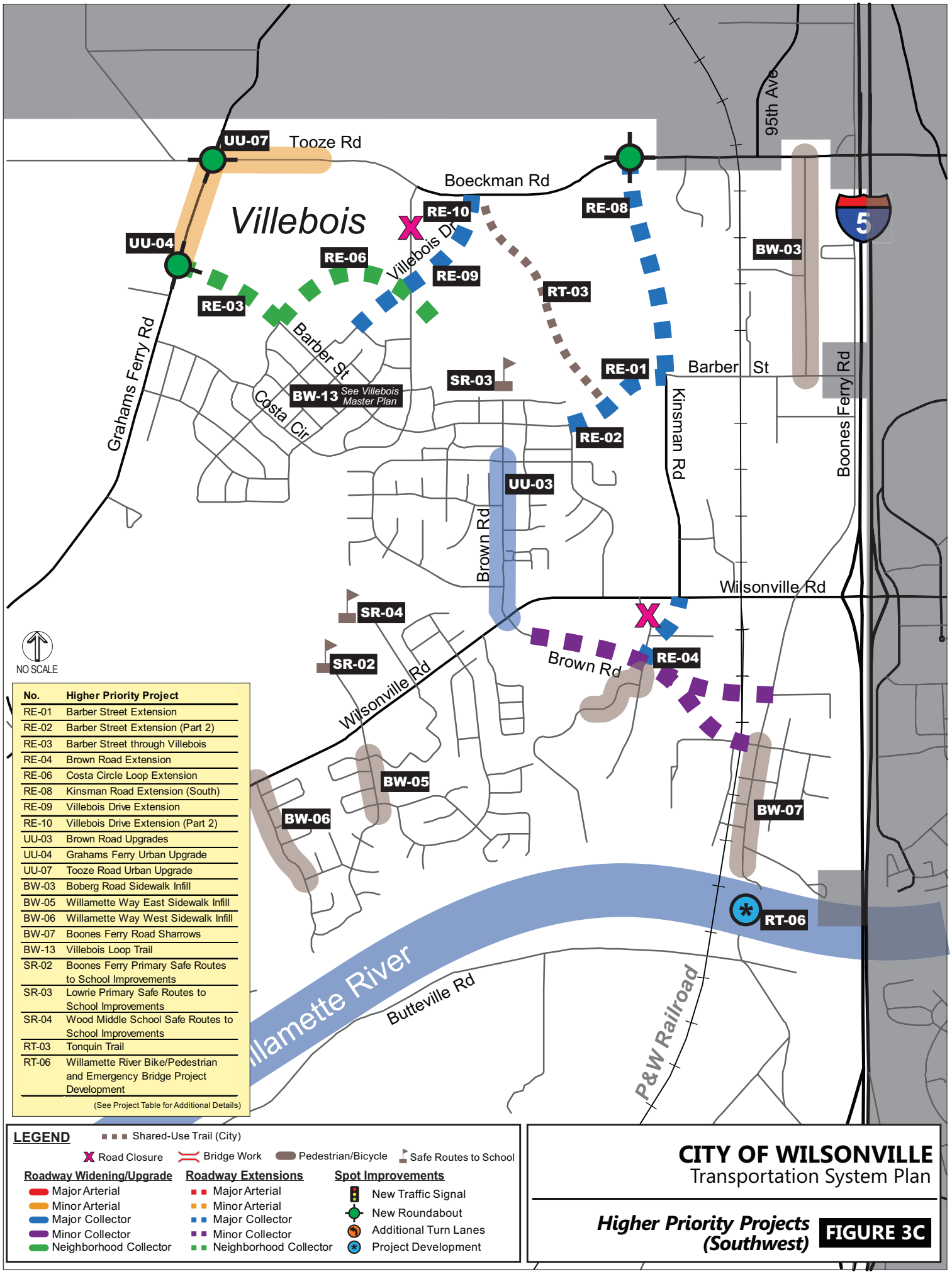
Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Spot Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes
- Project Development

CITY OF WILSONVILLE
Transportation System Plan

Higher Priority Projects (Northwest) **FIGURE 3A**


No. Higher Priority Project
RW-01 Boeckman Road Bridge and Corridor Improvements
UU-01 Boeckman Road Dip Improvements
UU-02 Boeckman Road Urban Upgrade
UU-05 Parkway Avenue Urban Upgrade
UU-06 Stafford Road Urban Upgrade
SI-03 Stafford Road/65th Avenue Intersection Improvements
BW-01 OIT/Parkway Avenue Enhanced Pedestrian Crossing
BW-04 Boeckman Road Bike Lanes and Sidewalk Infill
BW-11 Frog Pond Trails
BW-12 Parkway Center Trail Connector
RT-01 Boeckman Creek Trail
RT-02 Frog Pond Trail
RT-05 Wiedeman Road Trail
(See Project Table for Additional Details)
Boones Ferry Rd
Ridder Rd
95th Ave
Parkway Ave
Canyon Creek Rd
65th Ave
Stafford Rd
Elligsen Rd
Homesteader Rd
Boeckman Rd
Advance Rd
Frog Pond
UU-05
BW-12
RT-05
SI-03
UU-06
RT-01
BW-11
BW-01
RT-02
RW-01
BW-04
UU-01
UU-02
NO SCALE
5
LEGEND
Shared-Use Trail (City)
Road Closure
Bridge Work
Pedestrian/Bicycle
Safe Routes to School
Roadway Widening/Upgrade
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Neighborhood Collector
Roadway Extensions
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Neighborhood Collector
Spot Improvements
New Traffic Signal
New Roundabout
Additional Turn Lanes
Project Development
CITY OF WILSONVILLE
Transportation System Plan
Higher Priority Projects (Northeast)
FIGURE 3B



No.	Higher Priority Project
RE-01	Barber Street Extension
RE-02	Barber Street Extension (Part 2)
RE-03	Barber Street through Villebois
RE-04	Brown Road Extension
RE-06	Costa Circle Loop Extension
RE-08	Kinsman Road Extension (South)
RE-09	Villebois Drive Extension
RE-10	Villebois Drive Extension (Part 2)
UU-03	Brown Road Upgrades
UU-04	Grahams Ferry Urban Upgrade
UU-07	Tooze Road Urban Upgrade
BW-03	Boberg Road Sidewalk Infill
BW-05	Willamette Way East Sidewalk Infill
BW-06	Willamette Way West Sidewalk Infill
BW-07	Boones Ferry Road Sharrows
BW-13	Villebois Loop Trail
SR-02	Boones Ferry Primary Safe Routes to School Improvements
SR-03	Lowrie Primary Safe Routes to School Improvements
SR-04	Wood Middle School Safe Routes to School Improvements
RT-03	Tonquin Trail
RT-06	Willamette River Bike/Pedestrian and Emergency Bridge Project Development

(See Project Table for Additional Details)

LEGEND

Shared-Use Trail (City)

Road Closure | Bridge Work | Pedestrian/Bicycle | Safe Routes to School

Roadway Widening/Upgrade
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

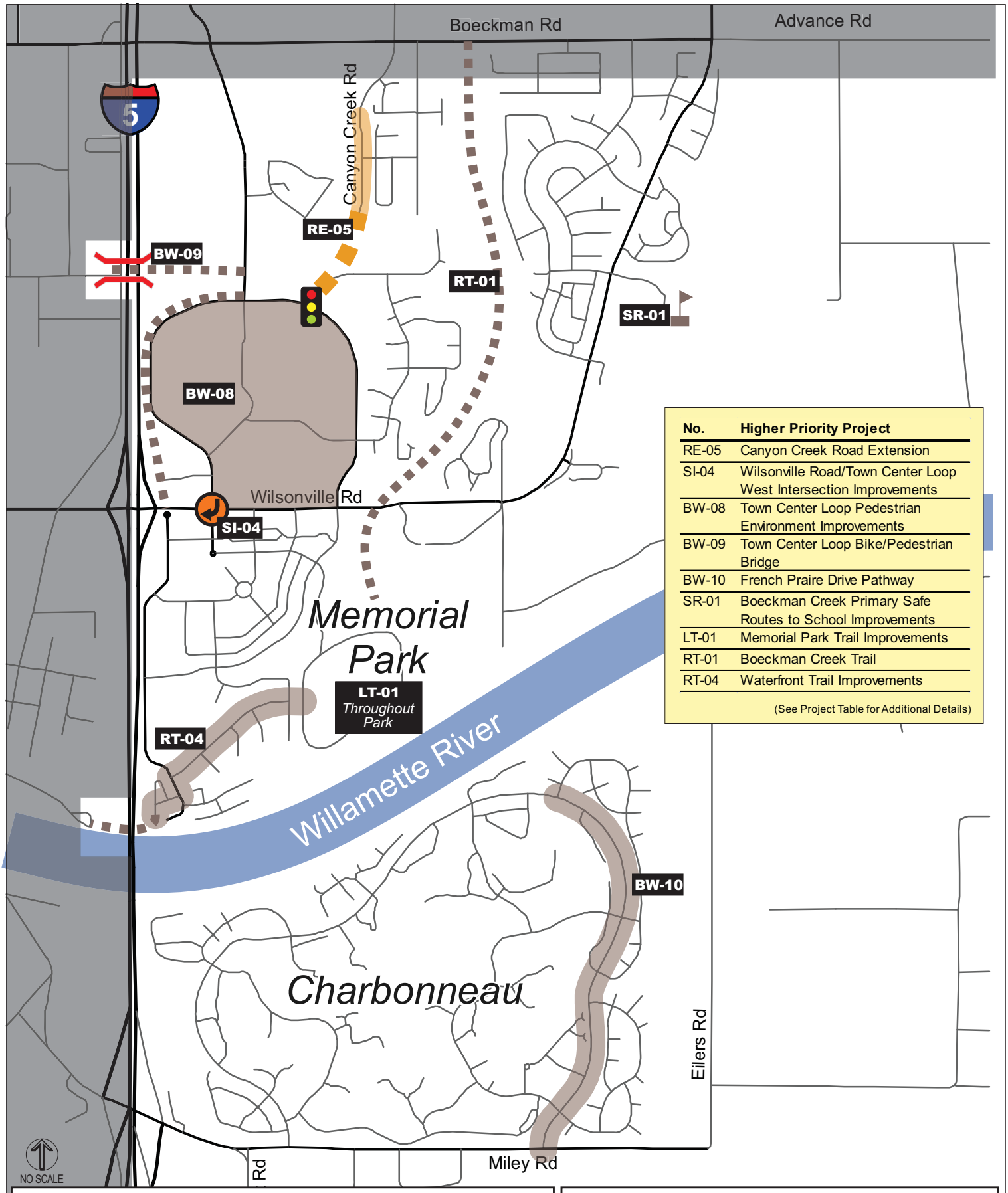
Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Spot Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes
- Project Development

CITY OF WILSONVILLE
Transportation System Plan

Higher Priority Projects (Southwest)

FIGURE 3C



No.	Higher Priority Project
RE-05	Canyon Creek Road Extension
SI-04	Wilsonville Road/Town Center Loop West Intersection Improvements
BW-08	Town Center Loop Pedestrian Environment Improvements
BW-09	Town Center Loop Bike/Pedestrian Bridge
BW-10	French Praire Drive Pathway
SR-01	Boeckman Creek Primary Safe Routes to School Improvements
LT-01	Memorial Park Trail Improvements
RT-01	Boeckman Creek Trail
RT-04	Waterfront Trail Improvements

(See Project Table for Additional Details)

LEGEND

Shared-Use Trail (City)

Road Closure | Bridge Work | Pedestrian/Bicycle | Safe Routes to School

Roadway Widening/Upgrade
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Spot Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes
- Project Development

CITY OF WILSONVILLE
Transportation System Plan

Higher Priority Projects (Southeast)

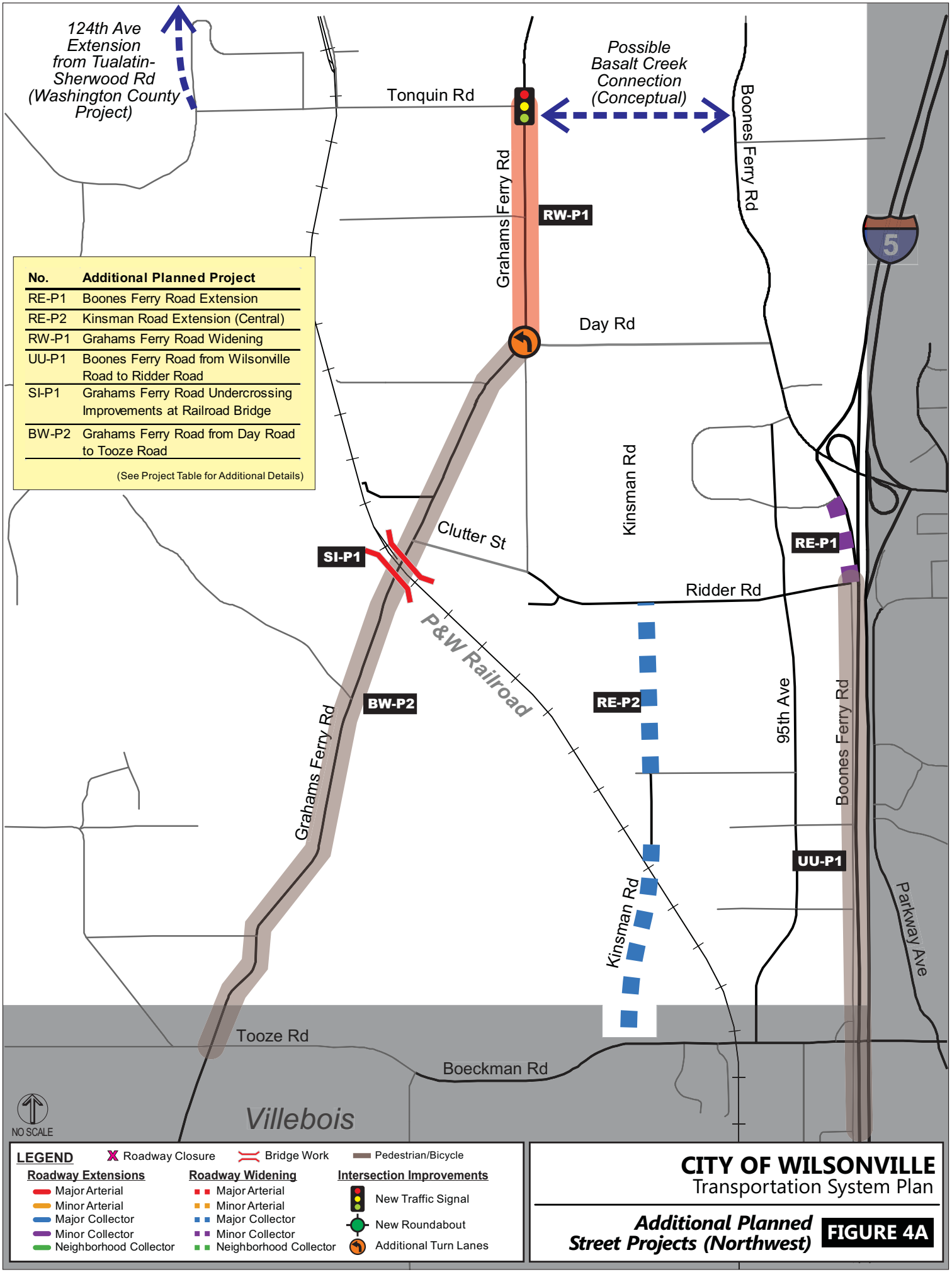
FIGURE 3D

Planned Solutions Package

The Planned System Solutions Package includes all projects that would contribute to the City's desired transportation system through the 2035 TSP horizon year, assuming the full build-out of the City's current Urban Growth Boundary. Because the Planned Solutions Package is considered comprehensive without funding limitations, all identified projects are included regardless of prioritization. Therefore, it includes all projects identified in the *Solutions Analysis and Proposed Funding Program* memorandum.

While all Higher Priority projects are included in the Planned Solutions Package, there are some additional projects that are planned but are not included in the Higher Priority project list. Figure 4A/B/C/D (which includes four separate pages, one for each the four quadrants of the City using I-5 and Boeckman Road as dividing lines) shows the additional transportation improvement projects being proposed for the Planned Solutions Package. When added to the Higher Priority projects, these additional projects would satisfy all identified gaps and deficiencies (including the applicable operating standards at study intersections) through the year 2035.

Table 6 lists the additional Planned projects that were not included in the Higher Priority project list. The projects listed in the table would cost over $70 million. Even though the City should primarily focus on the projects included in the Higher Priority Solutions Package, it should look for opportunities to pursue these remaining projects as funding opportunities become available.



No.	Additional Planned Project
RE-P1	Boones Ferry Road Extension
RE-P2	Kinsman Road Extension (Central)
RW-P1	Grahams Ferry Road Widening
UU-P1	Boones Ferry Road from Wilsonville Road to Ridder Road
SI-P1	Grahams Ferry Road Undercrossing Improvements at Railroad Bridge
BW-P2	Grahams Ferry Road from Day Road to Tooze Road

(See Project Table for Additional Details)

LEGEND

Roadway Closure | Bridge Work | Pedestrian/Bicycle

Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

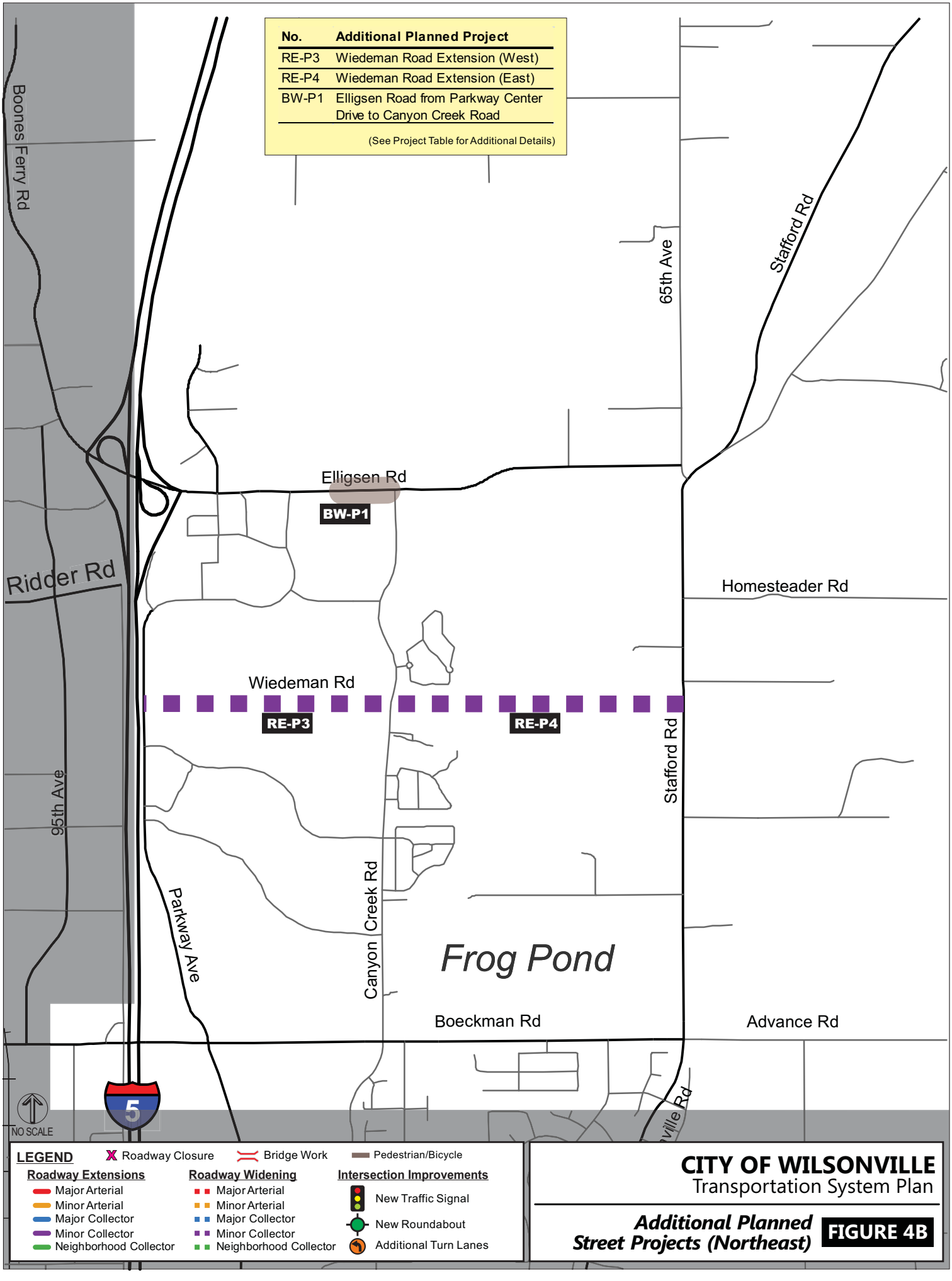
Roadway Widening
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

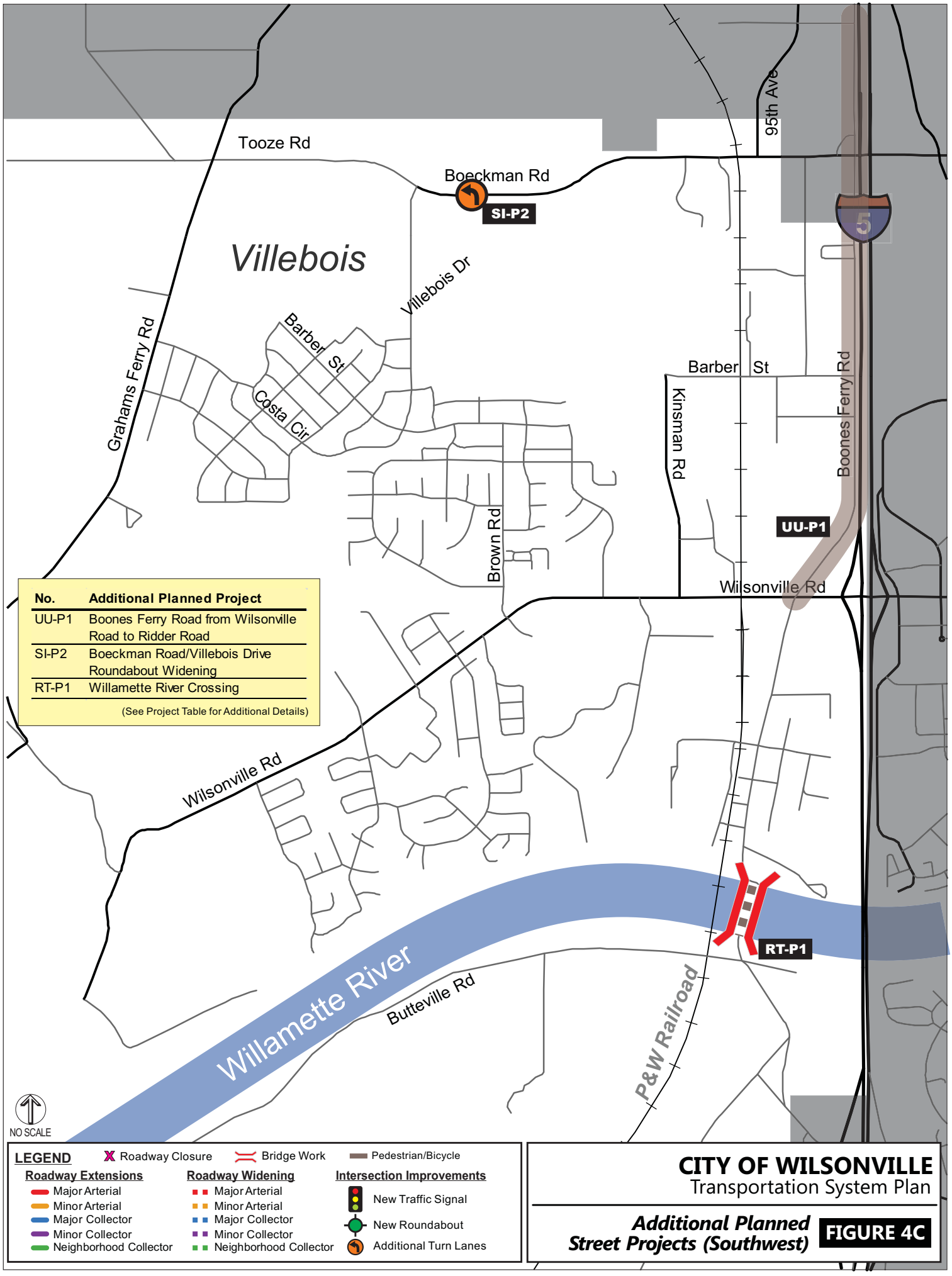
Intersection Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes

CITY OF WILSONVILLE
Transportation System Plan

Additional Planned Street Projects (Northwest)

FIGURE 4A


No. Additional Planned Project
RE-P3 Wiedeman Road Extension (West)
RE-P4 Wiedeman Road Extension (East)
BW-P1 Elligsen Road from Parkway Center Drive to Canyon Creek Road
(See Project Table for Additional Details)
Boones Ferry Rd
Ridder Rd
95th Ave
65th Ave
Stafford Rd
Elligsen Rd
BW-P1
Homesteader Rd
Wiedeman Rd
RE-P3
RE-P4
Stafford Rd
Parkway Ave
Canyon Creek Rd
Frog Pond
Boeckman Rd
Advance Rd
5
NO SCALE
LEGEND
Roadway Closure
Bridge Work
Pedestrian/Bicycle
Roadway Extensions
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Neighborhood Collector
Roadway Widening
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Neighborhood Collector
Intersection Improvements
New Traffic Signal
New Roundabout
Additional Turn Lanes
CITY OF WILSONVILLE
Transportation System Plan
Additional Planned Street Projects (Northeast)
FIGURE 4B



No.	Additional Planned Project
UU-P1	Boones Ferry Road from Wilsonville Road to Ridder Road
SI-P2	Boeckman Road/Villebois Drive Roundabout Widening
RT-P1	Willamette River Crossing

(See Project Table for Additional Details)

LEGEND

Roadway Closure | Bridge Work | Pedestrian/Bicycle

Roadway Extensions
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

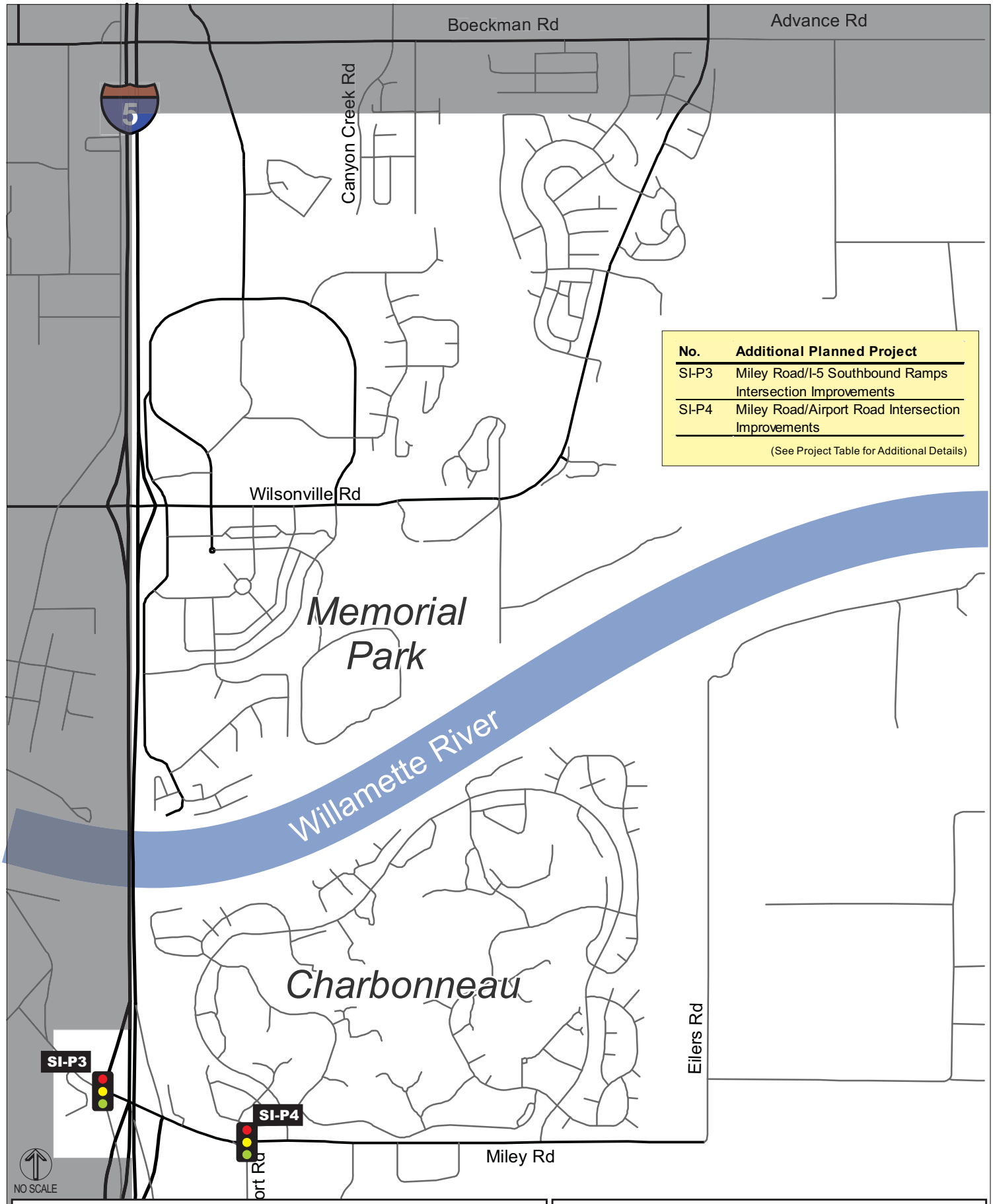
Roadway Widening
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Neighborhood Collector

Intersection Improvements
- New Traffic Signal
- New Roundabout
- Additional Turn Lanes

CITY OF WILSONVILLE
Transportation System Plan

Additional Planned Street Projects (Southwest)

FIGURE 4C



CITY OF WILSONVILLE
Transportation System Plan

Additional Planned Street Projects (Southeast) **FIGURE 4D**

Table 6: Additional Planned Projects Not Included in Higher Priority Package

Project	Description	Why Not Part of Higher Priority Project List	Cost
Roadway Extensions			
Boones Ferry Road from Ridder Road to Commerce Circle	Construct 2-lane roadway with bike lanes and sidewalks to facilitate access and circulation in the area surrounding Ridder Road and 95th Avenue	Identified as potentially helpful freight connection, but not a critical need at this time	$2,100,000
Kinsman Road from Boeckman Road to Ridder Road	Construct 2/3-lane roadway with bike lanes and sidewalks	High cost due to railroad crossing (or grade-separated overcrossing) and construction across Metro lands; alternative route (95th Avenue) is available	$12,000,000
Wiedeman Road from Parkway Avenue to Canyon Creek Road	Construct 2/3-lane roadway with bike lanes and sidewalks	Limited impact on system capacity; money better spent upgrading Boeckman Road and Elligsen Road	$4,300,000
Wiedeman Road from Canyon Creek Road to Stafford Road	Construct 2/3-lane roadway with bike lanes and sidewalks; would require construction over Boeckman Creek	Costly (especially over wetlands) and has limited impact on system capacity; money better spent upgrading Boeckman Road and Elligsen Road	$8,800,000
Roadway Widening			
Grahams Ferry Road from Tonquin Road to Day Road	Widen to four lanes with bike lanes and sidewalks; acquire the full five-lane right-of-way width to accommodate future left-turn lanes; also provide additional left-turn lanes at Tonquin Road and Day Road intersections	This project is located within Washington County and is only needed under certain scenarios of the pending Basalt Creek Refinement Plan	$7,000,000
Urban Upgrade			
Boones Ferry Road from Wilsonville Road to Ridder Road	Upgrade with bike lanes on both sides and sidewalks on west side only	High cost with limited connectivity benefit alternative parallel routes exist	$11,800,000
Spot Improvements			
Grahams Ferry Road Undercrossing Improvements at Railroad Bridge	Reconstruct existing railroad under-crossing to City of Wilsonville Minor Arterial standards; **Higher Priority project list includes project development portion of this project (costs are separate)**	This project is located within Washington County jurisdiction, and it is an important safety-related project with particular benefits for freight travel; however, it comes with high cost and freight traffic has alternate travel routes	$4,500,000
Boeckman Road/Villebois Drive Roundabout Widening	Expand roundabout by adding a westbound slip lane to accommodate two westbound travel lanes on Boeckman Road	Potential improvement need expected to be triggered by future regional traffic traveling east-west through Wilsonville	$500,000

Table 6 continued on next page.

(Continued) Table 6: Additional Planned Projects Not Included in Higher Priority Package

Project	Description	Why Not Part of Higher Priority Project List	Cost
Spot Improvements (Continued)			
Miley Road/I-5 Southbound Ramps Intersection Improvements	Install traffic signal and southbound left-turn lane	Outside City's jurisdiction (ODOT facility) and no future Wilsonville growth expected; improvement needs would be triggered primarily by regional traffic	$750,000
Miley Road/Airport Road Intersection Improvements	Install traffic signal and northbound left-turn lane	Outside City's jurisdiction (Clackamas County facility) and no future Wilsonville growth expected; improvement needs would be triggered primarily by regional traffic	$750,000
Standalone Bicycle and Pedestrian Improvements[a]			
Elligsen Road from Parkway Center Drive to Canyon Creek Road	Construct sidewalk on south side of the roadway connect existing sidewalk segments	Significant slopes would likely require retaining walls (higher costs) and large oak trees would be impacted	$250,000
Grahams Ferry Road from Day Road to Tooze Road	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes, and sidewalks	Grahams Ferry Road is primarily a rural road and Tonquin Trail is a preferred option for providing north-south connection through this part of Wilsonville	$2,035,000
Willamette River Crossing	Construct bridge for bike, pedestrian, and emergency access over the Willamette River to provide a safe and comfortable alternative to the I-5 freeway deck; **Higher Priority project list includes project development portion of this project (costs are separate)**	High cost and beneficial to first perform project development work	$14,020,000
Medium and Low Priority Bicycle and Pedestrian Projects (Includes Trails)[a]	Numerous projects identified in the City's 2006 Bicycle and Pedestrian Plan and provided in Appendix Table C	Lower priority; does not need to be City's focus but should be constructed as funds becomes available	$12,875,000
Total Cost of Additional Planned Projects			**$81,680,000**

[a] Rather than individually list all of the medium and low priority bicycle and pedestrian improvement projects identified in the City's 2006 Bicycle and Pedestrian Plan, these projects are grouped together for the purposes of this table. Refer to Appendix Table C for a full list of the individual projects.

Appendix

Financially-Constrained Project Tables

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects

Financially-Constrained Project Tables

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Roadway Extensions								
RE-01	Barber Street Extension	Barber Street Extension from Kinsman Road to Coffee Lake Drive (2-Lane)	Design, acquire right-of-way, and construct the extension of Barber Street at the southeast corner of the Villebois development	Parallel Route (Connectivity)	Transit Connection	2003 TSP (Portion of Project C-25); being designed and awaiting funding	Currently needed to connect Villebois with commercial districts, SMART Central, and WES station	$8,065,000
		Bike Lanes and Sidewalks along Barber Street Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian	Transit Connection	2006 Bicycle and Pedestrian Master Plan (Portion of Project C27)	Construct with roadway extension	$250,000
RE-02	Barber Street Extension (Part 2)	Barber Street Extension from Coffee Lake Drive to Montebello Drive (2-Lane)	Design, acquire right-of-way, and construct the extension of Barber Street at the southeast corner of the Villebois development	Parallel Route (Connectivity)	Villebois	2003 TSP (Portion of Project C-25); being designed and awaiting funding	Currently needed to connect Villebois with commercial districts, SMART Central, and WES station	$300,000
		Bike Lanes and Sidewalks along Barber Street Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Portion of Project C27)	Construct with roadway extension	$100,000
RE-03	Barber Street through Villebois	Barber Street Extension from Monte Carlo Avenue to Grahams Ferry Road	Two-lane roadway on west side of Villebois	Parallel Route (Connectivity)	Villebois	Villebois Master Plan	To be constructed as part of Villebois Development	$300,000
		Bike Lanes and Sidewalks along Barber Street Extension	Construct bike lanes and sidewalks as part of roadway extensions and other Villebois development	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Project Portion of C27)	Construct with roadway extension	$220,000
RE-04	Brown Road Extension	Brown Road Extension from Wilsonville Road to Boones Ferry Road (2-Lane)	Two-lane roadway (alignment has yet to be determined, but would connect to Boones Ferry Road at either 5th Street or Bailey Street)	Parallel Route (Connectivity)		2003 TSP (Project C-17; Project W-13 as well if 5th Street alignment is selected)	To be constructed to support development of lands south of Wilsonville Road; provides second connection for emergency services to Old Town	$14,500,000
		Bike Lanes and Sidewalks along Brown Road Extension	Construct bike lanes and sidewalks as part of roadway extension (a portion of roadway extension should include a shared-use trail, which would be part of the Tonquin Trail)	Bike/Pedestrian	Tonquin Trail	2006 Bicycle and Pedestrian Master Plan (Project C19a or C20a depending on selected alignment)	Construct with roadway extension	$325,000
		Shared-Use Path from Trail Terminus (near bridge on Arrowhead Creek Lane) to Boones Ferry Road	Construct off-street path along the north edge of Arrowhead Creek Lane and then to the east along the south edge of the Brown Road Extension	Bike/Pedestrian	Tonquin Trail	2006 Bicycle and Pedestrian Master Plan (Project C21)		$375,000
		Kinsman Road Extension from terminus to new Brown Road Extension (2-Lane)	Two-lane roadway from terminus south of Wilsonville Road to new Brown Road Extension	Parallel Route (Connectivity)		2003 TSP (Project C-14); portion through Wilsonville Road Business Park has been constructed by developer		Included in Brown Rd Ext
		Bike Lanes and Sidewalks along Kinsman Road Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C21)		Included in Brown Rd Ext
		New Brown Road/Kinsman Road Intersection	Construct intersection as part of roadway extensions	System Management and Operations (TSMO)		2003 TSP (Project S-39)		Included in Brown Rd Ext
RE-05	Canyon Creek Road Extension	Canyon Creek Road Extension and Widening (3-Lane)	Three-lane roadway, including widening of section that is currently two lanes and extending road to Town Center Loop, with relignment of Vlahos Drive so it tees into the new Canyon Creek Road Extension	Parallel Route (Connectivity)		2003 TSP (Project C-6); Northern 700-foot section has been constructed as three-lane section; two-lane section extends another 1/4 mile to the south; still needs additional 700-foot section	Needed upon development of Mentor Graphics Property and to relieve congestion from Parkway Avenue and Wilsonville Road	$2,540,000
		Bike Lanes and Sidewalks along Canyon Creek Road Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C8)	Construct with roadway extension	$460,000
		Town Center Loop Traffic Signal and ADA Upgrades	Install signal and update ADA and civil improvements at Town Center Loop/Vlahos Drive, which will become Town Center Loop/Canyon Creek Road	System Management and Operations (TSMO)		2003 TSP (Project S-4)	Needed to support Canyon Creek Extension	$500,000
RE-06	Costa Circle Loop Extension	Costa Circle Extension from Barber Street to Villebois Drive to Mont Blanc Street	Two-lane circular roadway in Villebois	Parallel Route (Connectivity)	Villebois	Villebois Master Plan	To be constructed as part of Villebois Development	$2,600,000
		Bike Lanes and Sidewalks along Costa Circle Loop Extension	Provide signed bike route and construct sidewalks as part of roadway extension and Villebois development	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Project C29)	Construct with roadway extension	$400,000

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Roadway Extensions (Continued)								
RE-07	Kinsman Road Extension (North)	Kinsman Road Extension from Ridder Road to Day Road (2-Lane)	Two-lane roadway	Parallel Route (Connectivity)	Coffee Creek Plan	2003 TSP - Short (1-5 yrs); Coffee Creek Master Plan (Project C-24)	Needed upon development of the Coffee Lake Creek Master Plan Area	$5,885,000
		Kinsman Road Extension/Day Road Intersection Improvements	Install signal at new intersection with NB left-turn lane	Parallel Route (Connectivity)	Coffee Creek Plan	2003 TSP; some updated identified in Coffee Creek Master Plan (Project S-36)	Construct with roadway extension	Included in Kinsman Rd Ext
		Kinsman Road Extension/Ridder Road Intersection Improvements	Install signal at new intersection with left-turn lanes on all approaches	Parallel Route (Connectivity)	Coffee Creek Plan	2003 TSP; some updated identified in Coffee Creek Master Plan (Project S-18)		Included in Kinsman Rd Ext
		Bike Lanes and Sidewalks along Kinsman Road Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian	Coffee Creek Plan	2006 Bicycle and Pedestrian Master Plan (Portion of Project C26)		$615,000
RE-08	Kinsman Road Extension (South)	Kinsman Road Extension from Barber Street to Boeckman Road (2-Lane)	Two-lane roadway	Parallel Route (Connectivity)		2003 TSP - Short (1-5 yrs) (Project Portion of C-2); Being designed and awaiting funding	Needed now for north/south Freight route	$7,840,000
		Boeckman Road/Kinsman Road Roundabout	Install roundabout (mix of dual/single)	System Management and Operations (TSMO)	Freight	2003 TSP (identified as traffic signal) (Project S-25)	Construct with roadway extension	Included in Kinsman Rd Ext
		Bike Lanes and Sidewalks along Kinsman Road Extension	Construct bike lanes and sidewalks as part of roadway extension	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Portion of Project C26); currently under design		$560,000
RE-09	Villebois Drive Extension	Extension of Villebois Drive from Costa Circle to Coffee Lake Drive (2-Lane)	Two-lane roadway through Villebois	Parallel Route (Connectivity)	Villebois	Villebois Master Plan	To be constructed as part of Villebois Development	$250,000
		Bike Lanes and Sidewalks along Villebois Drive Extension	Construct bike lanes and sidewalks as part of road extension and Villebois development	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Portion of Project C30)	Construct with roadway extension	$140,000
RE-10	Villebois Drive Extension (Part 2)	Extension of Villebois Drive from Coffee Lake Drive to Boeckman Road (2-Lane)	Two-lane roadway through Villebois	Parallel Route (Connectivity)	Villebois	Villebois Master Plan	To be constructed as part of Villebois Development	$200,000
		Bike Lanes and Sidewalks along Villebois Drive Extension	Construct bike lanes and sidewalks as part of road extension and Villebois development	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Portion of Project C30)	Construct with roadway extension	$50,000
Roadway Widening								
RW-01	Boeckman Road Bridge and Corridor Improvements	Boeckman Road Widening from Boberg Road to 500 feet east of Parkway Avenue and Reconstruction of Bridge over I-5 (4/5-Lane)	Road is currently 2/3 lanes with bike lanes and would need additional travel lane in either direction, along with a wider bridge	Widen Roadways		2003 TSP (Portion of Project W-4); RTP Project 10132	Needed now to provide east/west connection for all modes to WES/Smart Transit Hub	$8,450,000
		Bike Lanes and Sidewalks along Widened Boeckman Road	Include bike lanes and sidewalks on widened roadway and reconstructed I-5 bridge	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C6); RTP Project 10132	Construct with roadway widening	$4,000,000
		Boeckman Road/Boberg Road Intersection Improvements	Revise traffic control to TWSC; add NB right-turn lane	System Management and Operations (TSMO)		RTP Project 10132	Update traffic control to TWSC intersection once Kinsman Extension is built	$250,000
		Boeckman Road/Parkway Avenue Intersection Improvements	Reconstruct intersection due to wider Boeckman Road cross-section; add EB and SB right-turn lanes and change EB and SB through-right lanes to through lanes only; and improve signal phasing	Widen Roadways		2003 TSP (some lane geometry changes) (Project S-28)	Construct with roadway widening	$900,000
RW-02	Day Road Widening	Day Road Widening from Boones Ferry Road to Grahams Ferry Road (4/5-Lane)	Wider roadway would be needed to serve higher traffic volumes from 124th Avenue extension and Basalt Creek development if this is the east-west route selected	Widen Roadways	Coffee Creek Plan	Basalt Creek Master Plan (identified as a preliminary alternative)	Needed upon redevelopment of the Coffee Lake Creek Master Plan Area and/or Basalt Creek	$5,600,000
		Boones Ferry Road/Day Road Intersection Improvements	Expand intersection to accommodate 4/5-lane Day Road	Widen Roadways	Coffee Creek Plan	Basalt Creek Master Plan (identified as a preliminary alternative)	Construct with roadway widening	$750,000
		Grahams Ferry Road/Day Road Intersection Improvements	Expand intersection to accommodate 4/5-lane Day Road	Widen Roadways	Coffee Creek Plan	Basalt Creek Master Plan (identified as a preliminary alternative)		$250,000

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Urban Upgrades								
UU-01	Boeckman Road Dip Improvements	Boeckman Road Urban Upgrade at Vertical Curve (i.e., Dip) East of Canyon Creek Road (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks; options should also be considered to make connections to the regional trail system and to remove the culvert and install a bridge	System Management and Operations (TSMO)	Safety	2003 TSP (Portion of Project W-4f)	Currently needed to improve substandard geometric deficiency	$5,500,000
		Boeckman Road/Canyon Creek Road Traffic Signal and ADA Upgrades	Install signal and update ADA on north corners and minor civil improvements	System Management and Operations (TSMO)	Safety	2003 TSP (Project S-13)	Needed when future development triggers the need traffic signal; may be needed when Canyon Creek is extended to Town Center Loop East	$350,000
UU-02	Boeckman Road Urban Upgrade	Boeckman Road Urban Upgrade from Stafford Road to west of Willow Creek Drive (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks	Widen Roadways	Frog Pond Plan	Short (1-5 yrs) (Project Portion of W-4f); adjacent portion to the west has been widened to three lanes	Needed upon development of the Frog Pond Master Plan Area	$1,325,000
		Bike Lanes and Sidewalks with Boeckman Road Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian	Frog Pond Plan	2006 Bicycle and Pedestrian Master Plan (Portion of Project C9)	Construct with urban upgrade	$275,000
		Boeckman Road-Advance Road/Stafford Road-Wilsonville Road Intersection Improvements	Install either a signal with left-turns on all approaches or a roundabout	System Management and Operations (TSMO)	Frog Pond Plan	2003 TSP (Project S-41)	Needed upon development of the Frog Pond Master Plan Area	$500,000
UU-03	Brown Road Upgrades	Brown Road Urban Upgrade from Wilsonville Road to Evergreen Drive (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks	Widen Roadways		2003 TSP (Project W-12)	Currently needed	$3,100,000
		Bike Lanes and Sidewalks with Brown Road Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian		2003 TSP (Project W-12)	Construct with urban upgrade	$400,000
UU-04	Grahams Ferry Urban Upgrade	Grahams Ferry Road Urban Upgrade from Tooze Road to Barber Street Extension (2-Lane)	Upgrade to meet applicable cross-section standards, which include 2 lanes with bike lanes and sidewalks	Widen Roadways	Villebois		Needed in conjunction with Villebois development	$1,350,000
		Bike Lanes and Sidewalks with Grahams Ferry Road Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian	Villebois		Construct with urban upgrade	$650,000
		Grahams Ferry Road/Barber Street Roundabout	Install roundabout	System Management and Operations (TSMO)	Villebois			$400,000
UU-05	Parkway Avenue Urban Upgrade	Parkway Avenue Urban Upgrade from Parkway Center Drive to Xerox Drive (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks	Widen Roadways		2003 TSP - Long (11-20 yrs) (Project W-15)	Needed upon development of Elligsen Property	$3,400,000
		Bike Lanes and Sidewalks with Parkway Avenue Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C40)	Needed now due to gap in system; may need to be constructed separetely from Parkway Avenue urban upgrade	$1,600,000
UU-06	Stafford Road Urban Upgrade	Stafford Road Urban Upgrade from Boeckman Road to Kahle Road (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks	Widen Roadways	Frog Pond Plan	RTP Project 10030	Needed upon development of the Frog Pond Master Plan Area	$2,600,000
		Bike Lanes and Sidewalks with Stafford Road Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian	Frog Pond Plan		Construct with urban upgrade	$1,300,000
UU-07	Tooze Road Urban Upgrade	Tooze Road Urban Upgrade from Boeckman Road to Grahams Ferry Road (3-Lane)	Upgrade to meet applicable cross-section standards, which include 3 lanes with bike lanes and sidewalks	Widen Roadways	Villebois	Short (1-5 yrs) (Project Portion of W-20)	Needed now to support Villebois development	$4,600,000
		Bike Lanes and Sidewalks with Tooze Road Urban Upgrade	Construct bike lanes and sidewalks consistent with applicable roadway cross-section standard	Bike/Pedestrian	Villebois		Construct with urban upgrade	$2,300,000
		Grahams Ferry Road/Tooze Road Roundabout	Install roundabout (single-lane with some right-turn slip ramps)	System Management and Operations (TSMO)	Villebois	2003 TSP (Project S-9)		$1,000,000

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Spot Improvements								
SI-01	Clutter Road Intersection Improvements with Realignment or Grade Lowering	Grahams Ferry Road/Clutter Road Intersection Realignment (Option A)	Realign Clutter Road approximately 500 feet to the north depending on timing and location on redevelopment in the area	System Management and Operations (TSMO)	Coffee Creek Plan	Coffee Creek Master Plan	Needed upon redevelopment of the Coffee Lake Creek Master Plan Area	$1,000,000
		Grahams Ferry Road/Clutter Road Intersection Grade Lowering (Option B)	Lower grade of Grahams Ferry Road/Clutter Road intersection by approximately 5 feet and reconstruct intersection approaches	System Management and Operations (TSMO)	Coffee Creek Plan	Coffee Creek Master Plan		Comparable to Option A
		Bike Lanes and Sidewalks along Clutter Road and/or Lowered Roadways (Both Options)	Construct bike lanes and sidewalks along all realigned or reconstructed roadways	Bike/Pedestrian	Coffee Creek Plan	2006 Bicycle and Pedestrian Master Plan (Project C34)	Construct with roadway realignment	$360,000
		Grahams Ferry Road/Clutter Road Intersection Improvements (Both Options)	Install traffic signal along with SB and WB left-turn lanes	System Management and Operations (TSMO)	Coffee Creek Plan	Coffee Creek Master Plan (Project T-5, T-6, T-7)		$500,000
SI-02	Grahams Ferry Railroad Undercrossing Project Development	Project Development for Grahams Ferry Railroad Undercrossing Safety Improvements	Preliminary work to determine needs, feasibility, etc.	System Management and Operations (TSMO)	Coffee Creek Plan	Coffee Creek Master Plan (Project)	Needed upon redevelopment of the Coffee Lake Creek Master Plan Area	$500,000
SI-03	Stafford Road/65th Avenue Intersection Improvements	Stafford Road/65th Avenue Intersection Improvements	Improve turn radii, sight distance and grade differential by combining intersections as either a roundabout or traffic signal	System Management and Operations (TSMO)		RTP Project 10134	Needed now to support existing deficiency; Clackamas County will be lead agency	$2,000,000
SI-04	Wilsonville Road/Town Center Loop West Intersection Improvements	Additional Southbound Right-Turn Lane	Add a second SB right turn lane (dual lanes)	System Management and Operations (TSMO)	Town Center	2003 TSP, Wilsonville Rd IAMP (Project S-29 (revised))	Needed upon redevelopment of adjacent property or triggered by Town Center Development	$500,000
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)								
BW-01	OIT/Parkway Avenue Enhanced Pedestrian Crossing	Enhanced Pedestrian Crossing of Parkway Avenue Near Transit Stops	Install new pedestrian crossing that include rectangualar rapid flashing beacons (RRFBs), center pedestrian median island, signage, etc.	Pedestrian		SW Parkway Avenue Pedestrian Crossing Study (July 2008)	Needed now to support OIT and Pioneer Pacific College	$65,000
BW-02	95th Avenue Sidewalk Infill	Sidewalk Infill on 95th Avenue from Boeckman Road to Hillman Court	Fill in gaps in the sidewalk network on the east side of the roadway	Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C33)	Needed now to provide walking route between transit stops and employment	$85,000
BW-03	Boberg Road Sidewalk Infill	Sidewalk Infill on Boberg Road from Boeckman Road to Barber Street	Fill in gaps in the sidewalk network on the east side of the roadway	Pedestrian	Transit Connection	2006 Bicycle and Pedestrian Master Plan (Project C24)	Needed now because Boberg Road is a transit route and is in close proximity to transit station	$375,000
BW-04	Boeckman Road Bike Lanes and Sidewalk Infill	Bike Lanes and Sidewalks along Boeckman Road from Parkway Avenue to Canyon Creek Road	Bike lanes are needed along both sides and sidewalks are needed along the south side of Boeckman Road	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C7); sidewalks exist on north side of road and there is a private trail on the south side	Needed now to provide east/west connectivity	$515,000
BW-05	Willamette Way East Sidewalk Infill	Sidewalk Infill on Willamette Way East from Chantilly to south of Churchill	Fill in gaps in the sidewalk network on the west side of the roadway	Bike/Pedestrian	Tonquin Trail, Safe Routes to School	2006 Bicycle and Pedestrian Master Plan (Portion of Project C22)	Needed now based on Boones Ferry Primary School outreach	$50,000
BW-06	Willamette Way West Sidewalk Infill	Sidewalk Infill on Willamette Way West from Wilsonville Road to Paulina Drive	Construct a new sidewalk on west side of the roadway	Bike/Pedestrian	Safe Routes to School	2006 Bicycle and Pedestrian Master Plan (Shown on map but not listed as project)	Needed now for route to Boones Ferry Primary School	$50,000
BW-07	Boones Ferry Road Sharrows	Sharrows on Boones Ferry Road from 5th Street to Boones Ferry Park	Stripe sharrows (shared travel lanes) to connect Tonquin Trail to Waterfront Trail	Bike	Tonquin Trail	Revised project; bike lanes were identified in 2006 Bicycle and Pedestrian Master Plan (Project C17); some bike lanes exist on one side of the road	Needed when Brown Road Extension and Tonquin Trail are constructed	$5,000

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways) (Continued)								
BW-08	Town Center Loop Pedestrian Environment Improvements	Pedestrian Improvements throughout Town Center Loop Area	Create more direct connections between destinations within Town Center area, improve accessibility to civic uses, retrofit sidewalks with curb ramps, highlight crosswalks with colored pavement, or construct other similar treatments	Pedestrian	Town Center	2006 Bicycle and Pedestrian Master Plan (Project C1)	Needed now to support existing businesses; may be addressed incrementally based on business support and additional development	$100,000
		Shared-Use Path along Town Center Loop West from Wilsonville Road to Parkway Avenue	Expand width of current sidewalk to 10 feet to create a shared-use path for pedestrians and bicyclists	Bike/Pedestrian	Town Center	2006 Bicycle and Pedestrian Master Plan (Project C2)	Needed now	$360,000
BW-09	Town Center Loop Bike/Pedestrian Bridge	Bicycle/Pedestrian Bridge over I-5 near Town Center Loop	Construct bike/pedestrian bridge over I-5 to improve connectivity of Town Center area with businesses and neighborhoods on west side of I-5	Bike/Pedestrian	Town Center	2006 Bicycle and Pedestrian Master Plan (Project C4)	Needed now to support both WES station and Town Center Loop businesses and residents	$4,000,000
BW-10	French Praire Drive Pathway	Shared-Use Path along French Praire Drive from Country View Lane to Miley Road	Construct five-foot wide shared-use path for remaining length of French Prairie Drive	Bike/Pedestrian	Charbonneau	2006 Bicycle and Pedestrian Master Plan (Project C13)	Needed now	$1,140,000
BW-11	Frog Pond Trails	Frog Pond Loop Trail and Park	Construct trail as part of Frog Pond development; with connections to three proposed parks and the proposed regional Boeckman Creek Trail	Bike/Pedestrian	Frog Pond Plan	2006 Bicycle and Pedestrian Master Plan (Project L14)	Needed upon development of the Frog Pond Master Plan Area	$290,000
BW-12	Parkway Center Trail Connector	Shared-Use Path from Wiedeman Road Trail to Parkway Center Drive	Construct shared-use path as development occurs; connects to proposed regional trail (Wiedeman Road Trail) on the south	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project C41)	Needed upon redevelopment of Elligsen Property	$120,000
BW-13	Villebois Loop Trail	Shared-Use Path from Villebois Greenway to Tonquin Trail	Construct City trail as part of Villebois development; include connections to Villebois Greenway, the Tonquin Trail, and the Village Center	Bike/Pedestrian	Villebois	2006 Bicycle and Pedestrian Master Plan (Project L12)	To be constructed as part of Villebois Development	$180,000
BW-14	Wayfinding Signage	Tonquin Trail Wayfinding Signage	Provide signage directing bicycle and pedestrian users to Tonquin Trail	Bike/Pedestrian			Beneficial now with increasing need as sections of Tonquin Trail are completed	$40,000
		Points of Interest Signage	Provide signage directing users to points of interest throughout the City	System Management and Operations (TSMO)			Beneficial now with increasing need as other bicycle and pedestrian infrastructure is completed	$25,000
Standalone Pedestrian and Bicycle Improvements (Safe Routes to School)								
SR-01	Boeckman Creek Primary Safe Routes to School Improvements	Shared-Use Path between Boeckman Creek Primary School and Wilsonville Road	Construct new 10 to 12-foot bike path on the south side of the existing sidewalk that meanders south of the tree line. This path would connect to the existing marked crosswalk near the school parking lot.	Bike/Pedestrian	Safe Routes to School	New Project; identified as part of Safe Routes to School outreach	Currently needed based on Boeckman Creek Primary School outreach	$50,000
SR-02	Boones Ferry Primary Safe Routes to School Improvements	Shared-Use Path between Schools	Boones Ferry Primary SR2S Program	Bike/Pedestrian	Safe Routes to School	New Project; identified as part of Safe Routes to School outreach	Currently needed based on Boones Ferry Primary School outreach	$50,000
		Shared-Use Path for Bicycle Access to School	Boones Ferry Primary SR2S Program	Bike/Pedestrian	Safe Routes to School	New Project; identified as part of Safe Routes to School outreach		$300,000
		Bicycle Parking Shelter near School	Boones Ferry Primary SR2S Program	Bike	Safe Routes to School	New Project; identified as part of Safe Routes to School outreach		$15,000
SR-03	Lowrie Primary Safe Routes to School Improvements	Shared-Use Path from Lowrie Primary School to Barber Street	Construct trail as part of Villebois development; include connections to new school, Tonquin Trail, and Barber Street	Bike/Pedestrian	Villebois, Safe Routes to School	2006 Bicycle and Pedestrian Master Plan (Project L13); Partially completed; sections are being constructed at time of fronting Villebois development	To be constructed as part of Villebois Development	$225,000
SR-04	Wood Middle School Safe Routes to School Improvements	Bicycle Parking Shelter near School	Construct a cover over bike parking for weather protection	Bike	Safe Routes to School		Currently needed based on Wood Middle School outreach	$15,000
		Bicycle Access Route from Willsonville Road to School	Construct a 10 to 12-foot bike path between the school bicycle parking and Wilsonville Road	Bike/Pedestrian	Safe Routes to School			$300,000
		Park at Merryfield Trail Improvements from Camelot Street to Wood Middle School	Widen and stripe City trail	Bike/Pedestrian	Safe Routes to School	2006 Bicycle and Pedestrian Master Plan (Project L10)		$50,000

Table A: Wilsonville TSP -- Higher Priority Projects (General Project Information)

Project No.	Project	Project Component	Description	RTFP Solution Category	Tags	Source/Status	When and Why Needed	2011 Cost Estimate
Standalone Pedestrian and Bicycle Improvements (Local Trails)								
LT-01	Memorial Park Trail Improvements	River Trail (Memorial Park Center Loop Trail)	Construct natural trail connecting to boat dock, several river overlooks with benches, the Center Loop Trail, and the Homestead Trail	Bike/Pedestrian	Memorial Park	2006 Bicycle and Pedestrian Master Plan (Project L5)	Currently needed to improve Memorial Park	$130,000
		Kolbe Homestead Trail (River Trail to Memorial Park Center Loop Trail)	Construct interpretative route/natural trail offering information and self-guided tour of historic Kolbe homestead	Bike/Pedestrian	Memorial Park	2006 Bicycle and Pedestrian Master Plan (Project L6)		$65,000
		Klein Homestead Trail (accessed from Kolbe Homestead Trail)	Construct interpretative route/natural trail offering information and self-guided tour of historic Klein homestead	Bike/Pedestrian	Memorial Park	2006 Bicycle and Pedestrian Master Plan (Project L7)		$65,000
Standalone Pedestrian and Bicycle Improvements (Regional Trails)								
RT-01	Boeckman Creek Trail	Shared-Use Path from Canyon Creek Park to Memorial Park	Construct north-south trail through east Wilsonville following Boeckman Creek, with connections to Canyon Creek Park, Boeckman Road, existing community pathway crossing Boeckman Creek, Wilsonville Road, and Memorial Park (would require a comprehensive public process prior to implementation; may need a boardwalk for various sections)	Bike/Pedestrian	Regional Trail	2006 Bicycle and Pedestrian Master Plan (Project R3)	Beneficial now with increasing need as other trails throughout the City are completed	$1,950,000
RT-02	Frog Pond Trail	Shared-Use Path from Boeckman Creek Dip to Stafford Road	Construct shared-use path through Frog Pond area as part of development; link neighborhoods, schools, and parks (would provide an off-street alternative to Boeckman Road)	Bike/Pedestrian	Frog Pond Plan	2006 Bicycle and Pedestrian Master Plan (Project C10)	Needed upon development of the Frog Pond Master Plan Area	$290,000
RT-03	Tonquin Trail	Shared-Use Path through West Wilsonville (Except Sections through Coffee Lake Creek Natural Area and along Roadway Extensions)	Construct north-south trail through west Wilsonville, with connections to the Rivergreen Trail, Wilsonville Road, throughout Villebois, Boeckman Road, Cahalin Road, and the BPA power line easement (sections of trail have already been completed)	Bike/Pedestrian	Tonquin Trail	2006 Bicycle and Pedestrian Master Plan (Portion of Project R1); Portions of trail have already been completed	Portions to be built with development, adjacent roadway improvements, or by regional/neighboring jurisdictions	$1,850,000
		Shared-Use Path through Coffee Lake Creek Nature Area	Construct north-south trail through Coffee Lake Creek Natural Area (within City Limits); connect to trail terminus near Boeckman Road/Kinsman Road intersection	Bike/Pedestrian	Tonquin Trail	2006 Bicycle and Pedestrian Master Plan (Portion of Project R1)	Needed when section of trail north of the City Limits is completed (to connect rest of City network with trails to the north)	$750,000
RT-04	Waterfront Trail Improvements	Shared-Use Path under I-5 near Willamette River	Improve the condition of the trail as it passes underneath the I-5 Boone Bridge by removing the Jersey barriers, installing bollards, widening the trail to 10 feet, adding appropriate pedestrian features such as benches and lighting, and altering the grade of the path underneath the underpass to make it more easily accessible	Bike/Pedestrian	Regional Trail	2006 Bicycle and Pedestrian Master Plan (Portion of Project R4a)	Currently needed	$100,000
RT-05	Wiedeman Road Trail	Shared-Use Path from Canyon Creek Road to Parkway Avenue (Phase 1)	Construct east-west trail in north Wilsonville near the Xerox campus with City responsible for portion through developed land and future developer responsible for portion on future development site	Bike/Pedestrian		2006 Bicycle and Pedestrian Master Plan (Project R6a)	Currently beneficial	$340,000
RT-06	Willamette River Bike/Pedestrian and Emergency Bridge Project Development	Feasiblity study and project development	Perform feasibility study and project development for bike/pedestrian/emergency bridge over the Willamette River to provide non-motorized users a safe and comfortable alternative to the I-5 freeway deck	Bike/Pedestrian	Regional Trail	2006 Bicycle and Pedestrian Master Plan (Project R5)	Needed now to determine feasibility	$1,380,000
RT-07	Villebois Eastern Open Space Trail	Shared-Use Path along Eastern Edge of Villebois Open Space	Construct shared-use path between Barber Street and Villebois Drive as part of Villebois development	Bike/Pedestrian	Tonquin Trail, Villebois	2006 Bicycle and Pedestrian Master Plan (Project C28)	To be constructed as part of Villebois Development	$240,000
Transit								
SM-01	SMART Buses	Replacement Buses	Replace old buses	Transit		2008 Transit Master Plan and RTP Project 11109	Currently needed	$14,000,000
		Real-Time Bus Tracking System	Outfit each bus with a tracking system and provide real-time display boards at the SMART Central station and other key routes	Transit		2008 Transit Master Plan	Currently needed; consider outfiting new buses	$0

Table B: Wilsonville TSP -- Higher Priority Projects (Project Cost Estimates)

			Expected Funding Sources and Contributions (2011 Costs)								
Project No.	**Project**	**Project Component**	*Park SDCs*	*Street SDCs*	*Developer's Contribution*	*East Side URD*	*West Side URD*	*Local/Regional Partner*	*Estimated Grant*	*Federal Funding*	***TOTAL***
Roadway Extensions											
RE-01	Barber Street Extension	Barber Street Extension from Kinsman Road to Coffee Lake Drive (2-Lane)		$210,000			$4,070,000			$3,785,000	**$8,065,000**
		Bike Lanes and Sidewalks along Barber Street Extension					$250,000				**$250,000**
RE-02	Barber Street Extension (Part 2)	Barber Street Extension from Coffee Lake Drive to Montebello Drive (2-Lane)			$300,000						**$300,000**
		Bike Lanes and Sidewalks along Barber Street Extension		$50,000	$50,000						**$100,000**
RE-03	Barber Street through Villebois	Barber Street Extension from Monte Carlo Avenue to Grahams Ferry Road			$300,000						**$300,000**
		Bike Lanes and Sidewalks along Barber Street Extension		$80,000	$140,000						**$220,000**
RE-04	Brown Road Extension	Brown Road Extension from Wilsonville Road to Boones Ferry Road (2-Lane)		$3,625,000	$3,625,000		$7,250,000				**$14,500,000**
		Bike Lanes and Sidewalks along Brown Road Extension		$81,000	$81,000		$163,000				**$325,000**
		Shared-Use Path from Trail Terminus (near bridge on Arrowhead Creek Lane) to Boones Ferry Road		$375,000							**$375,000**
		Kinsman Road Extension from terminus to new Brown Road Extension (2-Lane)									**Included in Brown Rd Ext**
		Bike Lanes and Sidewalks along Kinsman Road Extension									**Included in Brown Rd Ext**
		New Brown Road/Kinsman Road Intersection									**Included in Brown Rd Ext**
RE-05	Canyon Creek Road Extension	Canyon Creek Road Extension and Widening (3-Lane)				$2,540,000					**$2,540,000**
		Bike Lanes and Sidewalks along Canyon Creek Road Extension				$460,000					**$460,000**
		Town Center Loop Traffic Signal and ADA Upgrades				$500,000					**$500,000**
RE-06	Costa Circle Loop Extension	Costa Circle Extension from Barber Street to Villebois Drive to Mont Blanc Street			$2,600,000						**$2,600,000**
		Bike Lanes and Sidewalks along Costa Circle Loop Extension		$50,000	$350,000						**$400,000**
RE-07	Kinsman Road Extension (North)	Kinsman Road Extension from Ridder Road to Day Road (2-Lane)			$5,002,000					$883,000	**$5,885,000**
		Kinsman Road Extension/Day Road Intersection Improvements									**Included in Kinsman Rd Ext**
		Kinsman Road Extension/Ridder Road Intersection Improvements									**Included in Kinsman Rd Ext**
		Bike Lanes and Sidewalks along Kinsman Road Extension			$615,000						**$615,000**
RE-08	Kinsman Road Extension (South)	Kinsman Road Extension from Barber Street to Boeckman Road (2-Lane)		$2,520,000			$3,920,000			$1,400,000	**$7,840,000**
		Boeckman Road/Kinsman Road Roundabout									**Included in Kinsman Rd Ext**
		Bike Lanes and Sidewalks along Kinsman Road Extension		$280,000			$280,000				**$560,000**
RE-09	Villebois Drive Extension	Extension of Villebois Drive from Costa Circle to Coffee Lake Drive (2-Lane)			$250,000						**$250,000**
		Bike Lanes and Sidewalks along Villebois Drive Extension		$70,000	$70,000						**$140,000**
RE-10	Villebois Drive Extension (Part 2)	Extension of Villebois Drive from Coffee Lake Drive to Boeckman Road (2-Lane)		$200,000							**$200,000**
		Bike Lanes and Sidewalks along Villebois Drive Extension		$50,000							**$50,000**

Table B: Wilsonville TSP -- Higher Priority Projects (Project Cost Estimates)

Project No.	Project	Project Component	Expected Funding Sources and Contributions (2011 Costs)								
			Park SDCs	*Street SDCs*	*Developer's Contribution*	*East Side URD*	*West Side URD*	*Local/Regional Partner*	*Estimated Grant*	*Federal Funding*	***TOTAL***
Roadway Widening											
RW-01	Boeckman Road Bridge and Corridor Improvements	Boeckman Road Widening from Boberg Road to 500 feet east of Parkway Avenue and Reconstruction of Bridge over I-5 (4/5-Lane)		$7,182,000						$1,268,000	**$8,450,000**
		Bike Lanes and Sidewalks along Widened Boeckman Road		$4,000,000							**$4,000,000**
		Boeckman Road/Boberg Road Intersection Improvements		$250,000							**$250,000**
		Boeckman Road/Parkway Avenue Intersection Improvements		$765,000						$135,000	**$900,000**
RW-02	Day Road Widening	Day Road Widening from Boones Ferry Road to Grahams Ferry Road (4/5-Lane)		$2,520,000	$2,240,000					$840,000	**$5,600,000**
		Boones Ferry Road/Day Road Intersection Improvements		$750,000							**$750,000**
		Grahams Ferry Road/Day Road Intersection Improvements		$250,000							**$250,000**
Urban Upgrades											
UU-01	Boeckman Road Dip Improvements	Boeckman Road Urban Upgrade at Vertical Curve (i.e., Dip) East of Canyon Creek Road (3-Lane)		$4,675,000						$825,000	**$5,500,000**
		Boeckman Road/Canyon Creek Road Traffic Signal and ADA Upgrades		$350,000							**$350,000**
UU-02	Boeckman Road Urban Upgrade	Boeckman Road Urban Upgrade from Stafford Road to west of Willow Creek Drive (3-Lane)		$463,000	$663,000					$199,000	**$1,325,000**
		Bike Lanes and Sidewalks with Boeckman Road Urban Upgrade		$137,000	$138,000						**$275,000**
		Boeckman Road-Advance Road/Stafford Road-Wilsonville Road Intersection Improvements		$500,000							**$500,000**
UU-03	Brown Road Upgrades	Brown Road Urban Upgrade from Wilsonville Road to Evergreen Drive (3-Lane)					$3,100,000				**$3,100,000**
		Bike Lanes and Sidewalks with Brown Road Urban Upgrade					$400,000				**$400,000**
UU-04	Grahams Ferry Urban Upgrade	Grahams Ferry Road Urban Upgrade from Tooze Road to Barber Street Extension (2-Lane)			$1,350,000						**$1,350,000**
		Bike Lanes and Sidewalks with Grahams Ferry Road Urban Upgrade			$650,000						**$650,000**
		Grahams Ferry Road/Barber Street Roundabout		$200,000	$200,000						**$400,000**
UU-05	Parkway Avenue Urban Upgrade	Parkway Avenue Urban Upgrade from Parkway Center Drive to Xerox Drive (3-Lane)		$2,550,000	$850,000						**$3,400,000**
		Bike Lanes and Sidewalks with Parkway Avenue Urban Upgrade		$1,200,000	$400,000						**$1,600,000**
UU-06	Stafford Road Urban Upgrade	Stafford Road Urban Upgrade from Boeckman Road to Kahle Road (3-Lane)		$1,300,000	$1,300,000						**$2,600,000**
		Bike Lanes and Sidewalks with Stafford Road Urban Upgrade		$650,000	$650,000						**$1,300,000**
UU-07	Tooze Road Urban Upgrade	Tooze Road Urban Upgrade from Boeckman Road to Grahams Ferry Road (3-Lane)					$3,800,000			$800,000	**$4,600,000**
		Bike Lanes and Sidewalks with Tooze Road Urban Upgrade					$2,300,000				**$2,300,000**
		Grahams Ferry Road/Tooze Road Roundabout					$1,000,000				**$1,000,000**

Table B: Wilsonville TSP -- Higher Priority Projects (Project Cost Estimates)

Project No.	Project	Project Component	Expected Funding Sources and Contributions (2011 Costs)								
			Park SDCs	*Street SDCs*	*Developer's Contribution*	*East Side URD*	*West Side URD*	*Local/Regional Partner*	*Estimated Grant*	*Federal Funding*	***TOTAL***
Spot Improvements											
SI-01	Clutter Road Intersection Improvements with Realignment or Grade Lowering	Grahams Ferry Road/Clutter Road Intersection Realignment (Option A)		$1,000,000							**$1,000,000**
		Grahams Ferry Road/Clutter Road Intersection Grade Lowering (Option B)									**Comparable to Option A**
		Bike Lanes and Sidewalks along Clutter Road and/or Lowered Roadways (Both Options)		$360,000							**$360,000**
		Grahams Ferry Road/Clutter Road Intersection Improvements (Both Options)		$500,000							**$500,000**
SI-02	Grahams Ferry Railroad Undercrossing Project Development	Project Development for Grahams Ferry Railroad Undercrossing Safety Improvements		$500,000							**$500,000**
SI-03	Stafford Road/65th Avenue Intersection Improvements	Stafford Road/65th Avenue Intersection Improvements		$775,000				$1,000,000		$225,000	**$2,000,000**
SI-04	Wilsonville Road/Town Center Loop West Intersection Improvements	Additional Southbound Right-Turn Lane		$450,000	$50,000						**$500,000**
Standalone Pedestrian and Bicycle Improvements (Bikeways and Walkways)											
BW-01	OIT/Parkway Avenue Enhanced Pedestrian Crossing	Enhanced Pedestrian Crossing of Parkway Avenue Near Transit Stops		$65,000							**$65,000**
BW-02	95th Avenue Sidewalk Infill	Sidewalk Infill on 95th Avenue from Boeckman Road to Hillman Court		$85,000							**$85,000**
BW-03	Boberg Road Sidewalk Infill	Sidewalk Infill on Boberg Road from Boeckman Road to Barber Street		$375,000							**$375,000**
BW-04	Boeckman Road Bike Lanes and Sidewalk Infill	Bike Lanes and Sidewalks along Boeckman Road from Parkway Avenue to Canyon Creek Road		$515,000							**$515,000**
BW-05	Willamette Way East Sidewalk Infill	Sidewalk Infill on Willamette Way East from Chantilly to south of Churchill		$50,000							**$50,000**
BW-06	Willamette Way West Sidewalk Infill	Sidewalk Infill on Willamette Way West from Wilsonville Road to Paulina Drive		$50,000							**$50,000**
BW-07	Boones Ferry Road Sharrows	Sharrows on Boones Ferry Road from 5th Street to Boones Ferry Park		$5,000							**$5,000**
BW-08	Town Center Loop Pedestrian Environment Improvements	Pedestrian Improvements throughout Town Center Loop Area		$100,000							**$100,000**
		Shared-Use Path along Town Center Loop West from Wilsonville Road to Parkway Avenue		$360,000							**$360,000**
BW-09	Town Center Loop Bike/Pedestrian Bridge	Bicycle/Pedestrian Bridge over I-5 near Town Center Loop		$1,000,000					$3,000,000		**$4,000,000**
BW-10	French Praire Drive Pathway	Shared-Use Path along French Praire Drive from Country View Lane to Miley Road		$1,140,000							**$1,140,000**
BW-11	Frog Pond Trails	Frog Pond Loop Trail and Park			$290,000						**$290,000**
BW-12	Parkway Center Trail Connector	Shared-Use Path from Wiedeman Road Trail to Parkway Center Drive			$120,000						**$120,000**
BW-13	Villebois Loop Trail	Shared-Use Path from Villebois Greenway to Tonquin Trail			$180,000						**$180,000**
BW-14	Wayfinding Signage	Tonquin Trail Wayfinding Signage							$40,000		**$40,000**
		Points of Interest Signage							$25,000		**$25,000**

Table B: Wilsonville TSP -- Higher Priority Projects (Project Cost Estimates)

Project No.	Project	Project Component	Expected Funding Sources and Contributions (2011 Costs)								
			Park SDCs	*Street SDCs*	*Developer's Contribution*	*East Side URD*	*West Side URD*	*Local/Regional Partner*	*Estimated Grant*	*Federal Funding*	***TOTAL***
Standalone Pedestrian and Bicycle Improvements (Safe Routes to School)											
SR-01	Boeckman Creek Primary Safe Routes to School Improvements	Shared-Use Path between Boeckman Creek Primary School and Wilsonville Road		$16,000				$17,000	$17,000		**$50,000**
SR-02	Boones Ferry Primary Safe Routes to School Improvements	Shared-Use Path between Schools		$16,000				$17,000	$17,000		**$50,000**
		Shared-Use Path for Bicycle Access to School		$100,000				$100,000	$100,000		**$300,000**
		Bicycle Parking Shelter near School		$5,000				$5,000	$5,000		**$15,000**
SR-03	Lowrie Primary Safe Routes to School Improvements	Shared-Use Path from Lowrie Primary School to Barber Street			$225,000						**$225,000**
SR-04	Wood Middle School Safe Routes to School Improvements	Bicycle Parking Shelter near School		$5,000				$5,000	$5,000		**$15,000**
		Bicycle Access Route from Willsonville Road to School		$100,000				$100,000	$100,000		**$300,000**
		Park at Merryfield Trail Improvements from Camelot Street to Wood Middle School		$50,000							**$50,000**
Standalone Pedestrian and Bicycle Improvements (Local Trails)											
LT-01	Memorial Park Trail Improvements	River Trail (Memorial Park Center Loop Trail)	$130,000								**$130,000**
		Kolbe Homestead Trail (River Trail to Memorial Park Center Loop Trail)	$65,000								**$65,000**
		Klein Homestead Trail (accessed from Kolbe Homestead Trail)	$65,000								**$65,000**
Standalone Pedestrian and Bicycle Improvements (Regional Trails)											
RT-01	Boeckman Creek Trail	Shared-Use Path from Canyon Creek Park to Memorial Park		$488,000				$487,000		$975,000	**$1,950,000**
RT-02	Frog Pond Trail	Shared-Use Path from Boeckman Creek Dip to Stafford Road			$290,000						**$290,000**
RT-03	Tonquin Trail	Shared-Use Path through West Wilsonville (Except Sections through Coffee Lake Creek Natural Area and along Roadway Extensions)			$560,000			$1,290,000			**$1,850,000**
		Shared-Use Path through Coffee Lake Creek Nature Area		$750,000							**$750,000**
RT-04	Waterfront Trail Improvements	Shared-Use Path under I-5 near Willamette River		$100,000							**$100,000**
RT-05	Wiedeman Road Trail	Shared-Use Path from Canyon Creek Road to Parkway Avenue (Phase 1)		$170,000	$170,000						**$340,000**
RT-06	Willamette River Bike/Pedestrian and Emergency Bridge Project Development	Feasiblity study and project development	$130,000							$1,250,000	**$1,380,000**
RT-07	Villebois Eastern Open Space Trail	Shared-Use Path along Eastern Edge of Villebois Open Space			$240,000						**$240,000**
SMART Transit											
SM-01	SMART Buses	Replacement Buses							$11,200,000		**$14,000,000**
		Real-Time Bus Tracking System									
		Estimated Funding Totals	**$390,000**	**$44,463,000**	**$23,949,000**	**$3,500,000**	**$26,533,000**	**$3,021,000**	**$14,509,000**	**$12,585,000**	**$131,750,000**

Note: $2.8 million of Bus costs would be paid for from Transit Fund, which is not shown in this table.

2006 Wilsonville Bicycle and Pedestrian Master Plan Projects

Table C: Planned Bicycle and Pedestrian Projects (Not Included as Higher Priority Projects)

Project Location	Project Type	Priority	2011 Cost Estimate[a]
Community Walkways/Bikeways			
Willamette Way West (south of Wilsonville Road)[b]	Sidewalk Gaps	Medium	$30,000[b]
C11- School Trail (Boeckman Creek Elementary School to planned school site)	Shared Use Path	Medium	$705,000
C12- Memorial Park Central Loop Trail (within Memorial Park)	Shared-Use Path	Medium	$335,000
C15- I-5 Crossing south of Wilsonville Road interchange (Memorial Drive to 5th Street)	Bike/Pedestrian Bridge	Low	$6,375,000
C16- 5th Street (Boones Ferry Road to new I-5 Bridge)	Bike Lanes and Sidewalks	Low	$55,000
C18- Railroad Track at Wilsonville Road	Pedestrian Refuge Island/Crosswalk	Low	$25,000
C23a- Boones Ferry Road (Wilsonville Road to Barber Street)	Bike Lanes and Sidewalks	Low	$495,000
C35- Cahalin Road (Kinsman Road extension to Tonquin trail)	Bike Lanes and Sidewalks	Low	$710,000[c]
C36- BPA Power Line Trail (Day Road to Tonquin Trail)	Shared-Use Path	Medium	$505,000
C37- Area 42 Trail (Kinsman Road to Day Road)	Shared-Use Path	Medium	$220,000
C38- Commerce Circle Loop	Sidewalk Gaps	Low	$100,000
C39- Elligsen Road (Argyle Square shopping center to Eastern City Limits)	Bike Lanes and Sidewalks	Low	$165,000[c]
C42- Canyon Creek Trail (Canyon Creek Park to Boeckman Creek Trail)	Shared-Use Path	Low	$205,000
C43- Wilsonville Road/Rose Lane intersection	Pedestrian Refuge Island/Crosswalk	Low	$50,000
Total Cost of Community Walkways/Bikeways			**$9,975,000**
Local Trails			
L5- River Trail (Memorial Park Center Loop Trail)	Natural Trail	Medium	$130,000
L6- Kolbe Homestead Trail (River Trail to Memorial Park Center Loop Trail)	Natural Trail	Medium	$65,000
L7- Klein Homestead Trail (accessed from Kolbe Homestead Trail)	Natural Trail	Medium	$65,000
L8- Park Access Trail (accessed from Montgomery Way)	Low Volume Roadway	Low	$15,000
Total Cost of Local Trails			**$275,000**

Table C continued on next page.

(Continued) Table C: Planned Bicycle and Pedestrian Projects (Not Included as Higher Priority Projects)

Project Location	Project Type	Priority	2011 Cost Estimate
Regional Trails			
R2- Stafford Spur Trail (Canyon Creek Park to Stafford Road)	Shared-Use Path	Low	$1,645,000
R6c- Wiedeman Road Trail—Phase 3 (Canyon Creek Road to Stafford Spur Trail)	Shared-Use Path	Low	$720,000
L15- Rivergreen Trail (Tonquin Trail/SW Willamette Way to Waterfront Trail)	Natural Trail	Low	$260,000
		Total Cost of Regional Trails	**$2,625,000**
		TOTAL COST OF ALL BICYCLE AND PEDESTRIAN PROJECTS NOT INCLUDED IN FINANCIALLY-CONSTRAINED PACKAGE	**$12,875,000**

* Project costs updated based on increased construction cost index since 2006 Bicycle and Pedestrian Master Plan.

[b] A proposed community walkway and bikeway on Willamette Way West was identified on Map 1 of the 2006 Bicycle and Pedestrian Master Plan. However, additional details for the project were not provided in the plan. Therefore, it does not have a project number.

[c] Project would likely be funded and constructed as part of another project (i.e., a roadway extension, roadway widening, safety, or Safe Routes to School project) or are assumed to be completed as frontage improvements of an adjacent development.

Map 1. Wilsonville Bicycle and Pedestrian Concept Map

Appendix I

DRAFT DEVELOPMENT CODE AMENDMENTS
(ANGELO PLANNING GROUP, 2013)

Appendix I: Draft Development Code Amendments (Last Updated April 19, 2013)

This document provides draft implementing ordinances in support of adopting the draft Wilsonville Transportation System Plan. The following includes proposed amendments to the City of Wilsonville Development Code to update City requirements for consistency with the Regional Transportation Functional Plan (RTFP) and State Transportation Planning Rule (TPR). Findings of compliance with these requirements are presented in table-format and are included in Appendix J of the draft TSP.

The proposed amendments are outlined in Table 1, with references to corresponding RTFP and TPR requirements. Following the table, draft code language is presented in adoption-ready format; the draft amendments are numbered consistent with the structure of the Development Code and proposed new language is underlined and recommended deletions are ~~struck through~~. In some cases adopting proposed new text will require re-numbering or re-lettering of subsequent Development Code subsections.

Note: In addition to the proposed amended sections specified in this memorandum, the entire Development Code should be reviewed to ensure correct identification of all references pertaining to new or revised text related to the implementation of the updated Transportation System Plan.

Table 1: Summary of Proposed Development Code Amendments and Corresponding Regional Transportation Functional Plan (RTFP) and Transportation Planning Rule (TPR) References

	Proposed Development Code Amendments	RTFP and/or TPR Requirements
	CHAPTER 4 SECTIONS 4.000 – 4.035 **ADMINISTRATION**	
1.	**Section 4.001 Definitions.** Definitions of access control strip modified. Definitions under bikeway modified to remove bike/pedestrian path and add cycle track. New definitions for major transit stop, major transit street, multiuse pathway, and through zone added.	**Title 1, Street System Design Sec 3.08.110B** **Title 4, Parking Management Sec 3.08.410**
2.	**Section 4.012. Public Hearing Notices.** New text in subsection (.02) Mailed Notice for Quasi-Judicial Hearings includes noticing governmental agencies potentially impacted by a local decision.	**OAR 660-12-0045(1)(c)**
	CHAPTER 4 SECTIONS 4.100 – 4.141 **ZONING**	
3.	**(Revised) Section 4.005 Exclusions from Development Permit Requirement.** Modified text identifies transportation facilities within the public right-of-way as exempt from development permit requirements.	**OAR 660-12-0045(1)(b)**
4.	**Section 4.125(.09) Street and Access Improvement Standards** Update Village Zone standards to coordinate with new street classifications and spacing standards in TSP.	**TSP consistency**
	CHAPTER 4 SECTIONS 4.154 – 4.199 **GENERAL DEVELOPMENT REGULATIONS**	
5.	**Section 4.154. On-site Pedestrian Access and Circulation.** New section (.01) On-site Pedestrian Access and Circulation; text modified from State's *Model Development Code for Small Cities*.	**Title 1, Pedestrian System Design Sec 3.08.130C (on-site pedestrian systems)**
6.	**Section 4.155. General Regulations - Parking, Loading and Bicycle Parking.** Modified Section (.03), Parking Requirements, to include parking location and street features for lots over 3 acres and to exempt structured parking and on-street parking from parking maximums. Proposed renumbering of existing text. New subsections under (.03) include electrical vehicle charging stations and motorcycle parking. New Section (.04), Bicycle Parking, to address quantity, location, and design of short term and long term bicycle parking. New Section (0.5)B Exceptions and Adjustments to allow approval of loading areas adjacent to or within a street right-of-	**Title 4, Parking Management Sec 3.08.410** **OAR 660-12-0045(4)**

	Proposed Development Code Amendments	RTFP and/or TPR Requirements
	way if specific conditions exist. New Section (.06) Carpool and Vanpool Parking Requirements to include provisions for preferential location of carpool and vanpool parking New Section (.07) Parking Area Redevelopment to allow for the redevelopment of existing parking areas in order to accommodate or provide transit-related amenities or electric vehicle charging stations.	
7.	**Section 4.177. Street Improvement Standards.** New introduction language; New Section (.01) clarifies applicability and compliance requirements. New Section (.02) Street Design Standards includes existing language and a new reference to the street standards in the TSP. Existing requirements for sidewalks have been moved. Added text to existing Subsection D includes a (new) requirement to post notification of a street extension. New Sections (.03), (.04), and (.05) feature text modified from existing Section 4.178 Sidewalk and Pathway Standards. New Section (.06) Transit Improvements includes requirements consistent with Transit Master Plan implementation measures. Section (.08) Access Drives and Travel Lanes is relocated from Section 4.177.01.E. New Sections (.08), (.09), and (.10) address access and driveway development standards and intersection spacing standards, as well as exception and adjustment procedures.	**Title 1, Street System Design Sec 3.08.110B** **Title 1,Street System Design Sec 3.08.110G** **Title 1, Transit System Design Sec 3.08.120B(2)** **OAR 660-012-0045**
8.	**Section 4.178. Sidewalk and Pathway Standards.** Recommended deletion of Section; text proposed as part of (new) Section 4.177.03, .04, and .05.	
9.	**Section 4.197. Zone Changes and Amendments To This Code – Procedures.** Added text requires findings of compliance with applicable Statewide Land Use Planning Goals and related administrative rules.	**OAR 660-12-0060**
	CHAPTER 4 SECTIONS 4.200 – 4.290 **LAND DIVISIONS**	
10.	**Section 4.236. General Requirements - Streets.** Added text in (.07) reflects a (new) requirement to post notification of a street extension.	**Title 1, Street System Design Sec 3.08.110B**

Section 4.001 Definitions.

4. Access Control Strip: A reserve area established adjacent to and paralleling a half street improvement or across the end of a street that is to be extended in the future to ~~insure~~ ensure proper participation by adjoining properties in completion of the required street improvements. See Street, Half.

[New number/renumbering needed.] ~~32~~. Bikeway: Bikeway is a general term used to describe any type of travel way that is designated for use by bicycles~~.~~ in conformance with City standards. Bikeways may or may not be within a public right-of-way and include the following: ~~Bikeways may include bike lanes, bike paths, shared roadways, shoulder bikeways and other bikeways.~~
A. Bike Lane: A bike lane facility is a type of bikeway where a section of the roadway is designated for exclusive bicycle use.
~~B. Bike /Pedestrian Path: A bike/pedestrian path facility is a type of bikeway that is entirely separate from the roadway and is designed and constructed to allow for safe use by both pedestrians and bicyclists.~~
B~~C~~. Recreational Trail: A recreation trail is a type of pedestrian, bicycle, or equestrian facility that is entirely separate from roadways and has unimproved, gravel, or bark dust surface.
C~~D~~. Shared Roadway: A shared roadway facility is a type of bikeway where motorists and cyclists occupy the same roadway area.
D~~E~~. Shoulder Bikeway: A shoulder bikeway facility is a type of bikeway where cyclists occupy the paved roadway shoulder. Shoulder bikeways are common in rural areas.
E. Cycle Track: A cycle track is a bike lane with a physical barrier between the bike and motor vehicle travel lanes, such as a curb or parking lanes. Cycle tracks must "rejoin" the motor vehicle travel lanes at signalized intersections. Cycle tracks may require a two stage left turn for bicyclists.
F. See also Multipurpose pathway or path.

[New number/renumbering needed.] Driveway Approach: A driveway connection to a public street or highway where it meets a public right-of-way.

[New number/renumbering needed.] Major transit stop: Transit stops that are located where two or more existing or planned routes intersect or where there are existing or planned transfer locations between transit systems, Park & Ride lots, and shopping centers and other major destinations.

[New number/renumbering needed.] Major transit street: A primary corridor for transit, receiving half-hour or better service during peak traffic hours. Typically, these streets are also arterials or major collectors.

[New number/renumbering needed.] Multiuse pathway or path: A path that is separate from the roadway either in the roadway right-of-way or in an independent right-of-way. It is designed and constructed to allow for safe walking, biking, and other human-powered travel modes.

[New number/renumbering needed.] Through zone: The width of unobstructed space on a sidewalk or pedestrian pathway.

Section 4.005. Exclusions from Development Permit Requirement.

(.05) Except as otherwise required by Sections 4.184 and 4.500 to 4.510, the establishment, construction or termination of an authorized public facility that serves development, including such facilities as a private ~~or public~~ street, transportation facilities within the public right-of-way, sewer, water line, electrical power or gas distribution line, or telephone or television cable system, provided said construction complies with applicable Public Works Standards. This exemption is not intended to apply to buildings used by utility providers.

Section 4.012. Public Hearing Notices.

(.01) Published Notice. […]

(.02) Mailed Notice for Quasi-Judicial Hearings.

A. For development projects involving Class II Administrative Reviews, or quasijudicial public hearings, the Planning Director shall ensure the following: ~~have~~
   1. ~~p~~Public hearing notices shall be mailed to the owners of real property located within 250 feet of the site of the proposed development. The Planning Director shall use the property ownership lists of the County Assessor in determining the recipients of the notices.
   2. Notice shall be sent to any governmental agency that is entitled to notice under an intergovernmental agreement entered into with the City and any other affected roadway authority. The failure of another agency to respond with written comments on a pending application shall not invalidate an action or permit approval made by the City under this Code.

B. Notices shall be mailed not less than twenty (20) days nor more than forty (40) days prior to the initial public hearing date. Except, however, in cases where the development proposal will require public hearings before both the City Council and Development Review Board, in which case the notices shall be mailed at least ten (10) days before the initial public hearing.

C. In any case where State law requires different timing or form of notice than that specified in this Code, the standard requiring a broader coverage or duration of notice shall be followed.

D. The City will make a good faith effort to contact property owners whose names do not appear on County ownership records and to contact others who have asked to be contacted for different types of applications.

(.03) Mailed Notice for Legislative Hearings. Where applicable, the Planning Director shall have notices of legislative hearings mailed to individual property owners as specified in State law.

Section 4.118. Standards applying to all Planned Development Zones:

(.03) Notwithstanding the provisions of Section 4.140 to the contrary, the Development Review Board, in order to implement the purposes and objectives of Section 4.140, and based on findings of fact supported by the record may:

A. Waive the following typical development standards:

1. minimum lot area;
2. lot width and frontage;
3. height and yard requirements;
4. lot coverage;
5. lot depth;
6. street widths;
7. sidewalk requirements;
8. height of buildings other than signs;
9. parking space configuration and drive aisle design;
10. minimum number of parking or loading spaces;
11. shade tree islands in parking lots, provided that alternative shading is provided;
12. fence height;
13. architectural design standards;
14. transit facilities;
15. on-site pedestrian access and circulation standards; and
~~15.~~ 16. solar access standards, as provided in Section 4.137.

Section 4.125(.09) Street and Access Improvement Standards

(.09) Street and Access Improvement Standards

A. Except as noted below, the provisions of Section 4.177 shall apply within the Village zone:

[…]

2. Intersections of streets:

c. Offsets: Opposing intersections shall be designed so that no offset dangerous to the traveling public is created. Intersections shall be separated by at least:

i. 1000 ft. for major arterials
ii. 600 ft. for minor arterials
iii. 100 ft. for ~~major~~ collectors
iv. 50 ft. for ~~minor collector~~ local streets

Section 4.154. ~~Bicycle, Pedestrian and Transit Facilities.~~ On-site Pedestrian Access and Circulation.

~~*NOTE: Completion of Section 4.154 has been postponed pending the completion of the Transportation Systems Plan.*~~

(.01) On-site Pedestrian Access and Circulation

A. The purpose of this section is to implement the pedestrian access and connectivity policies of the Transportation System Plan. It is intended to provide for safe, reasonably direct, and convenient pedestrian access and circulation.

B. Standards. Development shall conform to all of the following standards:

1. Continuous Pathway System. A pedestrian pathway system shall extend throughout the development site and connect to adjacent sidewalks, and to all future phases of the development, as applicable.
2. Safe, Direct, and Convenient. Pathways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas/playgrounds, and public rights-of-way based on all of the following criteria:
   a. Pedestrian pathways are designed primarily for pedestrian safety and convenience, meaning they are free from hazards and provide a reasonably smooth and consistent surface.
   b. The pathway is reasonably direct. A pathway is reasonably direct when it follows a route between destinations that does not involve a significant amount of unnecessary out-of-direction travel.
   c. The pathway connects to all primary building entrances and is consistent with the Americans with Disabilities Act (ADA) requirements.
   d. All parking lots larger than three acres in size shall provide an internal bicycle and pedestrian pathway pursuant to Section 4.155.03.B.3.d.
3. Vehicle/Pathway Separation.
   Except as required for crosswalks, per subsection 4, below, where a pathway abuts a driveway or street it shall be vertically or horizontally separated from the vehicular lane. For example, a pathway may be vertically raised six inches above the abutting travel lane, or horizontally separated by a row of bollards.
4. Crosswalks. Where a pathway crosses a parking area or driveway, it shall be clearly marked with contrasting paint or paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrast).
5. Pathway Width and Surface. Primary pathways shall be constructed of concrete, asphalt, brick/masonry pavers, or other durable surface, and not less than five (5) feet wide. Secondary pathways and pedestrian trails may have an alternative surface except as otherwise required by the ADA.
6. All pathways shall be clearly marked with appropriate standard signs.

Section 4.155. General Regulations - Parking, Loading and Bicycle Parking.

(.01) Purpose:
[…]
(.02) General Provisions:

A. The provision and maintenance of off-street parking spaces is a continuing obligation of the property owner. The standards set forth herein shall be considered by the Development Review Board as minimum criteria.
   1. The Board shall have the authority to grant variances or planned development waivers to these standards in keeping with the purposes and objectives set forth in the Comprehensive Plan and this Code.
   2. Waivers to the parking, loading, or bicycle parking standards shall only be issued upon a findings that the resulting development will have no significant adverse impact on the surrounding neighborhood, and the community, and that the development considered as a whole meets the purposes of this section.

[…]

(.03) Minimum and Maximum Off-Street Parking Requirements:

A. Parking and loading or delivery areas shall be designed with access and maneuvering area adequate to serve the functional needs of the site and shall:
   1. Separate loading and delivery areas and circulation from customer and/or employee parking and pedestrian areas. Circulation patterns shall be clearly marked.
   2. To the greatest extent possible, separate vehicle and pedestrian traffic.
B. Parking and loading or delivery areas shall be landscaped to minimize the visual dominance of the parking or loading area, as follows:

[…]

3. Due to their large amount of impervious surface, new development with parking areas of more than two hundred (200) spaces that are located in any zone, and that may be viewed from the public right of way, shall be landscaped to the following additional standards:
   a. One (1) tree~~s~~ shall be planted per six (6) parking spaces or fraction thereof. At least twenty-five percent (25%) of the required trees must be planted in the interior of the parking area.
   b. Required trees may be planted within the parking area or the perimeter, provided that a minimum of forty percent (40%) of the canopy dripline of mature perimeter trees can be expected to shade or overlap the parking area. Shading shall be determined based on shadows cast on the summer solstice.
   c. All parking lots in excess of two hundred (200) parking spaces shall provide an internal pedestrian walkway for every six (6) parking aisles. Minimum walkway clearance shall be at least <u>five</u> (~~5~~6) feet in width. Walkways shall be designed to provide pedestrian access to parking areas in order to minimize pedestrian travel among vehicles. Walkways shall be designed to channel pedestrians to the front entrance of the building.
   <u>d. Parking lots more than three acres in size shall provide street-like features along principal drive isles, including curbs, sidewalks, street trees or planting strips, and bicycle routes.</u>
   ~~d.~~ <u>e.</u> All parking lots viewed from the public right of way shall have a minimum twelve (12) foot landscaped buffer[…]

~~e.~~ f. Where topography and slope condition permit, the landscape buffer shall integrate parking lot storm water treatment […]

~~f.~~ g. In addition to the application requirements of section 4.035(.04)(6)(d), […]

C. ~~4.~~ Off Street Parking shall b~~B~~e designed for safe and convenient access that meets ADA and ODOT standards. ~~All parking areas which contain ten (10) or more parking spaces, shall for every fifty (50) standard spaces., provide one ADA-accessible parking space that is constructed to building code standards, Wilsonville Code 9.000.~~

D. ~~5.~~ Where possible, parking areas shall be designed to connect with parking areas on adjacent sites so as to eliminate the necessity for any mode of travel to ~~of~~ utilizing the public street for multiple accesses or cross movements. In addition, on-site parking shall be designed for efficient on-site circulation and parking.

E. ~~6.~~ In all multi-family dwelling developments, there shall be sufficient areas established to provide for parking and storage of motorcycles, mopeds and bicycles. Such areas shall be clearly defined and reserved for the exclusive use of these vehicles.

F. ~~7.~~ On-street parking spaces, directly adjoining the frontage of and on the same side of the street as the subject property, may be counted towards meeting the minimum off street parking standards.

G. ~~8.~~ Table~~s~~ 5~~, below,~~ shall be used to determine the minimum and maximum parking standards for various land uses. The minimum number of required parking spaces shown on Table~~s~~ 5 shall be determined by rounding to the nearest whole parking space. For example, a use containing 500 square feet, in an area where the standard is one space for each 400 square feet of floor area, is required to provide one off-street parking space. If the same use contained more than 600 square feet, a second parking space would be required. [Amended by Ordinance No. 538, 2/21/02.] Structured parking and on-street parking are exempted from the parking maximums in Table 5.

H. Electrical Vehicle Charging Stations:

1. Parking spaces designed to accommodate and provide one or more electric vehicle charging stations on site may be counted towards meeting the minimum off-street parking standards.

2. Redevelopment of existing parking spaces to accommodate electric vehicle charging stations on site does not require approval through Class II Administrative Review or a Planned Development Review application.

I. Motorcycle parking:

1. Motorcycle parking may substitute for up to 5 spaces or 5 percent of required automobile parking, whichever is less. For every 4 motorcycle parking spaces provided, the automobile parking requirement is reduced by one space.
2. Each motorcycle space must be at least 4 feet wide and 8 feet deep. Existing parking may be converted to take advantage of this provision.

(.04) Bicycle Parking:

A. Required Bicycle Parking - General Provisions

1. The required minimum number of bicycle parking spaces for each use category is shown in Table 5, Parking Standards, below.
2. A minimum of 50% of the bicycle parking spaces shall be provided as long-term bicycle parking in any of the following situations:
   a. When 10% or more of automobile vehicle parking is covered.
   b. If more than four (4) bicycle parking spaces are required.
   c. Multifamily residential development with nine or more units.

3. Bicycle parking spaces are not required for accessory buildings. If a primary use is listed in Table 5, bicycle parking is not required for the accessory use.
4. When there are two or more primary uses on a site, the required bicycle parking for the site is the sum of the required bicycle parking for the individual primary uses.

B. Short-term Bicycle Parking

1. Short-term bicycle parking encourages shoppers, customers, and other visitors to use bicycles by providing a convenient and readily accessible place to park bicycles.
2. Required short-term bicycle parking shall meet the following standards:
   a. Provide lockers or racks that meet the standards of this section.
   b. Locate within 30 feet of the main entrance to the building or inside a building, in a location that is easily accessible for bicycles.
   c. If 10 or more spaces are required, then at least 50 percent of these shall be covered.
   d. Each space must be at least 2 feet by 6 feet in area and be accessible without moving another bicycle and must provide enough space between the rack and a building or other obstructions to use the rack properly.
   e. There must be an aisle at least 5 feet wide behind all required bicycle parking to allow room for bicycle maneuvering. Where the bicycle parking is adjacent to a sidewalk, the maneuvering area may extend into the right-of-way

C. Long-term Bicycle Parking

1. Long-term bicycle parking provides employees, students, residents, commuters, and others who generally stay at a site for several hours a weather-protected place to park bicycles.
2. Required long-term bicycle parking shall meet the following standards:
   a. Provide racks, storage rooms, or lockers in areas that are secure or monitored (e.g., visible to employees or monitored by security guards).
   b. Locate the space within 100 feet of the entrance that will be used by the intended users.
   c. At least 50 percent of the spaces shall be covered.
3. Bicycle Lockers, Racks and Cover (Weather Protection):
   a. Where required bicycle parking is provided in lockers, the lockers shall be securely anchored.
   b. Covered bicycle parking, as required by this section, shall be provided inside buildings, under roof overhangs or awnings, in bicycle lockers, or within or under other structures. Where required covered bicycle parking is not within a building or locker, the cover must be permanent and designed to protect the bicycle from rainfall and provide seven (7) foot minimum overhead clearance.

Note: In considering proposed waivers to the following standards, the City will consider the potential uses of the site and not just the uses that are currently proposed. For waivers to exceed the maximum standards, applicants shall bear the burden of proving that Metro, State, and federal clean air standards will not be violated.

TABLE 5: PARKING STANDARDS

USE	PARKING MINIMUMS	PARKING MAXIMUMS	BICYCLE MINIMUMS
a. Residential			
1. Single and attached units and any apartments (9 or fewer units)	1 per D.U., except accessory dwelling units, which have no minimum.	No Limit	~~0~~ Apartments – Min. of 2

(.045) Minimum Off-Street Loading Requirements:

A. Every building that is erected or structurally altered to increase the floor area, and which will require the receipt or distribution of materials or merchandise by truck or similar vehicle, shall provide off-street loading berths on the basis of minimum requirements as follows:

1. Commercial, industrial, and public utility uses which have a gross floor area of 5,000 square feet or more, shall provide truck loading or unloading berths in accordance with the following tables:

Square feet of Floor Area	Number of Berths Required
Less than 5,000	0
5,000 - 30,000	1
30,000 - 100,000	2
100,000 and over	3

2. Restaurants, office buildings, hotels, motels, hospitals and institutions, schools and colleges, public buildings, recreation or entertainment facilities, and any similar use which has a gross floor area of 30,000 square feet or more, shall provide off-street truck loading or unloading berths in accordance with the following table:

Square feet of Floor Area	Number of Berths Required
Less than 30,000	0
30,000 - 100,000	1
100,000 and over	2

3. A loading berth shall contain space twelve (12) feet wide, thirty-five (35) feet long, and have a height clearance of fourteen (14) feet. Where the vehicles generally used for loading and unloading exceed these dimensions, the required length of these berths shall be increased to accommodate the larger vehicles.
4. If loading space has been provided in connection with an existing use or is added to an existing use, the loading space shall not be eliminated if

elimination would result in less space than is required to adequately handle the needs of the particular use.

5. Off-street parking areas used to fulfill the requirements of this Ordinance shall not be used for loading and unloading operations except during periods of the day when not required to meet parking needs.

B Exceptions and Adjustments.

1. The Planning Director or Development Review Board may approve a loading area adjacent to or within a street right-of-way where it finds that loading and unloading operations:
   a. Are short in duration (*i.e.*, less than one hour);
   b. Are infrequent (less than three operations daily);
   c. Do not obstruct traffic during peak traffic hours;
   d. Do not interfere with emergency response services or bicycle and pedestrian facilities; and
   e. Are acceptable to the applicable roadway authority.

(.06) Carpool and Vanpool Parking Requirements:

A. Carpool and vanpool parking spaces shall be identified for the following uses: new commercial and industrial developments with seventy-five (75) or more parking spaces, new institutional or public assembly uses, and transit park-and-ride facilities with fifty (50) or more parking spaces.

B. Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.

B. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.

C. Required carpool/vanpool spaces shall be clearly marked "Reserved - Carpool/Vanpool Only."

(.07) Parking Area Redevelopment:

The number of parking spaces may be reduced by up to 10% of the minimum required parking spaces for that use when a portion of the existing parking area is modified to accommodate or provide transit-related amenities such as transit stops, pull-outs, shelters, and park and ride stations.

Section 4.177. Street Improvement Standards.

~~*Note: This section is expected to be revised after the completion of the Transportation Systems Plan.*~~

This section contains the City's requirements and standards for pedestrian, bicycle, and transit facility improvements to public streets, or within public easements. The purpose of this section is to ensure that development, including redevelopment, provides transportation facilities that are safe, convenient, and adequate in rough proportion to their impacts.

(.01) ~~Except as specifically approved by the Development Review Board, all street and access improvements shall conform to the Transportation Systems Plan and the Public Works Standards, together with the following standards: [Amended by Ord.~~

~~682, 9/9/10]~~ Development and related public facility improvements shall comply with the standards in this section, the Wilsonville Public Works Standards, and the Transportation System Plan, in rough proportion to the potential impacts of the development. Such improvements shall be provided at the time of development except as waived by the City Engineer for reasons of safety or traffic operations.

(.02) Street Design Standards

A. All street improvements and intersections shall ~~conform to the Public Works Standards and shall~~ provide for the continuation of streets through specific developments to adjoining properties or subdivisions.
   1. Development shall be required to provide existing or future connections to adjacent sites through the use of access easements where applicable. Such easements shall be required in addition to required public street dedications as required in Section 4.236(.04).

B. The City Engineer shall make the final determination regarding right-of-way and street element widths using the ranges provided in Chapter 3 of the Transportation System Plan and the additional street design standards in the Public Works Standards. ~~All streets shall be developed with curbs, utility strips and sidewalks on both sides; or a sidewalk on one side and a bike path on the other side.~~
   ~~1. Within a Planned Development the Development Review Board may approve a sidewalk on only one side. If the sidewalk is permitted on just one side of the street, the owners will be required to sign an agreement to an assessment in the future to construct the other sidewalk if the City Council decides it is necessary.~~

C. Rights-of-way.
   1. Prior to issuance of a Certificate of Occupancy Building permits or as a part of the recordation of a final plat, the City shall require dedication of rights-of-way in accordance with the ~~Street System Master~~ Transportation Systems Plan. All dedications shall be recorded with the County Assessor's Office.
   2. The City shall also require a waiver of remonstrance against formation of a local improvement district, and all non-remonstrances shall be recorded in the County Recorder's Office as well as the City's Lien Docket, prior to issuance of a Certificate of Occupancy Building Permit or as a part of the recordation of a final plat.
   3. In order to allow for potential future widening, a special setback requirement shall be maintained adjacent to all arterial streets. The minimum setback shall be 55 feet from the centerline or 25 feet from the right-of-way designated on the Master Plan, whichever is greater.

D. Dead-end Streets. New dead-end streets or cul-de-sacs shall not exceed 200 feet in length, unless the adjoining land contains barriers such as existing buildings, railroads or freeways, or environmental constraints such as steep slopes, or major streams or rivers, that prevent future street extension and connection. A central landscaped island with rainwater management and infiltration are encouraged in cul-de-sac design. No more than 25 dwelling units shall take access to a new dead-end or cul-de-sac street unless it is determined that the traffic impacts on adjacent streets will not exceed those from a development of 25 or fewer units. All other dimensional standards of dead-end streets shall be governed by the Public Works Standards.

Notification that the street is planned for future extension shall be posted on the dead-end street. [Amended by Ord. # 674 11/16/09]

~~E. Access drives and travel lanes.~~

~~1. An access drive to any proposed development shall be designed to provide a clear travel lane free from any obstructions.~~

~~2. Access drive travel lanes shall be constructed with a hard surface capable of carrying a 23-ton load.~~

~~3. Secondary or emergency access lanes may be improved to a minimum 12 feet with an all-weather surface as approved by the Fire District. All fire lanes shall be dedicated easements.~~

~~4. Minimum access requirements shall be adjusted commensurate with the intended function of the site based on vehicle types and traffic generation.~~

~~5. Where access drives connect to the public right-of-way, construction within the right-of-way shall be in conformance to the Public Works Standards.~~

F. Corner or clear vision area.

1. A clear vision area which meets the Public Works Standards shall be maintained on each corner of property at the intersection of any two streets, a street and a railroad or a street and a driveway. However, the following items shall be exempt from meeting this requirement:
   a. Light and utility poles with a diameter less than 12 inches.
   b. Trees less than 6" d.b.h., approved as a part of the Stage II Site Design, or administrative review.
   c. Except as allowed by b., above, an existing tree, trimmed to the trunk, 10 feet above the curb.
   d. Official warning or street sign.
   e. Natural contours where the natural elevations are such that there can be no cross-visibility at the intersection and necessary excavation would result in an unreasonable hardship on the property owner or deteriorate the quality of the site.

G. Vertical clearance - a minimum clearance of 12 feet above the pavement surface shall be maintained over all streets and access drives.

H. Interim improvement standard. It is anticipated that all existing streets, except those in new subdivisions, will require complete reconstruction to support urban level traffic volumes. However, in most cases, existing and short-term projected traffic volumes do not warrant improvements to full Master Plan standards. Therefore, unless otherwise specified by the Development Review Board ~~Planning Commission~~, the following interim standards shall apply.

1. Arterials - 24 foot paved, with standard sub-base. Asphalt overlays are generally considered unacceptable, but may be considered as an interim improvement based on the recommendations of the City Engineer, regarding adequate structural quality to support an overlay.
2. Half-streets are generally considered unacceptable. However, where the Development Review Board finds it essential to allow for reasonable development, a half-street may be approved. Whenever a half-street improvement is approved, it shall conform to the requirements in the Public Works Standards:

3. When considered appropriate in conjunction with other anticipated or scheduled street improvements, the City Engineer may approve street improvements with a single asphalt lift. However, adequate provision must be made for interim storm drainage, pavement transitions at seams and the scheduling of the second lift through the Capital Improvements Plan.

[Section 4.177(.01) amended by Ord. 610, 5/1/06]

(.03) Sidewalks. Sidewalks shall be provided on the public street frontage of all development. Sidewalks shall generally be constructed within the dedicated public right-of-way, but may be located outside of the right-of-way within a public easement with the approval of the City Engineer.

A. Sidewalk widths shall include a minimum through zone of at least five feet. The through zone may be reduced pursuant to variance procedures in Section 4.196, a waiver pursuant to Section 4.118, or by authority of the City Engineer for reasons of traffic operations, efficiency, or safety.

B. Within a Planned Development the Development Review Board may approve a sidewalk on only one side. If the sidewalk is permitted on just one side of the street, the owners will be required to sign an agreement to an assessment in the future to construct the other sidewalk if the City Council decides it is necessary.

(.04) Bicycle Facilities. Bicycle facilities shall be provided to implement the Transportation System Plan, and may include on-street and off-street bike lanes, shared lanes, bike boulevards, and cycle tracks. The design of on-street bicycle facilities will vary according to the functional classification and the average daily traffic of the facility.

(.05) Multiuse Pathways. Pathways may be in addition to, or in lieu of, a public street. Paths that are in addition to a public street shall generally run parallel to that street, and shall be designed in accordance with the Public Works Standards or as specified by the City Engineer. Paths that are in lieu of a public street shall be considered in areas only where no other public street connection options are feasible, and are subject to the following standards.

A. Paths shall be located to provide a reasonably direct connection between likely pedestrian and bicyclist destinations. Additional standards relating to entry points, maximum length, visibility, and path lighting are provided in the Public Works Standards.

B. To ensure ongoing access to and maintenance of pedestrian/bicycle paths, the City Engineer will require dedication of the path to the public and acceptance of the path by the City as public right-of-way; or creation of a public access easement over the path.

(.06) Transit Improvements

A. Development on sites that are adjacent to or incorporate major transit streets shall provide improvements as described in this section to any bus stop located along the site's frontage, unless waived by the City Engineer for reasons of safety or traffic operations. Transit facilities include bus stops, shelters, and related facilities. Required transit facility improvements may include the dedication of land or the provision of a public easement.

B. Development shall at a minimum provide:

1. Reasonably direct pedestrian connections, as defined by Section 4.154, between building entrances and the transit facility and between buildings on the site and streets adjoining transit stops.

2. Improvements at major transit stops. Improvements may include intersection or mid-block traffic management improvements to allow for pedestrian crossings at major transit stops.

C. Developments generating an average of 49 or more pm peak hour trips shall provide bus stop improvements per the Public Works Standards. Required improvements may include provision of benches, shelters, pedestrian lighting; or provision of an easement or dedication of land for transit facilities.

D. In addition to the requirements of 4.177.06.B.2, development generating more than 199 pm peak hour trips on major transit streets shall provide a bus pullout, curb extension, and intersection or mid-block traffic management improvements to allow for pedestrian crossings at major transit stops.

E. In addition to the requirement s of 4.177.06.B. and C., development generating more than 500 pm peak-hour trips on major transit streets shall provide on-site circulation to accommodate transit service.

(.0~~2~~7) Residential Private Access Drives shall meet the following standards:

A. Residential Private Access Drives shall provide primary vehicular access to no more than four (4) dwelling units, excluding accessory dwelling units.

B. The design and construction of a Residential Private Access Drive shall ensure a useful lifespan and structural maintenance schedule comparable, as determined by the City Engineer or City's Authorized Representative, to a local street constructed in conformance to current public works standards.

1. The design of residential private access drives shall be stamped by a professional engineer registered in the state of Oregon and shall be approved by the City Engineer or City's Authorized Representative to ensure the above requirement is met.

2. Prior to issuing a certificate of occupancy for any residential dwelling unit whose primary vehicular access is from a Residential Private Access Drive the City Engineer or City's Authorized Representative shall certify construction of the Residential Private Access Drive substantially conforms the design approved by the City Engineer or City's Authorized Representative.

C. Residential Private Access Drives shall be named for addressing purposes. All Residential Private Access Drives shall use the suffix "Lane", i.e. SW Oakview Lane.

D. Residential Private Access Drives shall meet or exceed the standards for access drives and travel lanes established in Subsection ~~(.01) G.~~(.08) of this Section.

[Section 4.177(.02) added by Ord. 682, 9/1/10]

(.08). Access Drive and Driveway Approach Development Standards.

A. An access drive to any proposed development shall be designed to provide a clear travel lane free from any obstructions.
B. Access drive travel lanes shall be constructed with a hard surface capable of carrying a 23-ton load.
C. Where emergency vehicle access is required, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider;
D. Secondary or emergency access lanes may be improved to a minimum 12 feet with an all-weather surface as approved by the Fire District. All fire lanes shall be dedicated easements.
E. Minimum access requirements shall be adjusted commensurate with the intended function of the site based on vehicle types and traffic generation.
F. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.
G. The City may limit the number or location of connections to a street, or impose access restrictions where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.
H. The City may require a driveway to extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).
I. Driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.
J. Driveways shall be designed so that vehicle areas, including but not limited to drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.
K. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.
L. As it deems necessary for pedestrian safety, the City, in consultation with the roadway authority, may require traffic-calming features, such as speed tables, textured driveway surfaces, curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site.
M. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.
N. Where a proposed driveway crosses a culvert or drainage ditch, the City may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant applicable Public Works standards.
O. Except as otherwise required by the applicable roadway authority or waived by the City Engineer, temporary driveways providing access to a construction site or

staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

P. Unless constrained by topography, natural resources, rail lines, freeways, existing or planned or approved development, or easements or covenants, driveways proposed as part of a residential or mixed-use development shall meet local street spacing standards and shall be constructed to align with existing or planned streets, if the driveway:
   1. Intersects with a public street that is controlled, or is to be controlled in the planning period, by a traffic signal;
   2. Intersects with an existing or planned arterial or collector street; or
   3. Would be an extension of an existing or planned local street, or of another major driveway.

(.09) Minimum street intersection spacing standards.

A. New streets shall intersect at existing street intersections so that centerlines are not offset. Where existing streets adjacent to a proposed development do not align properly, conditions shall be imposed on the development to provide for proper alignment.

B. Minimum intersection spacing standards are provided in Transportation System Plan Table 3-1.

(.10) Exceptions and Adjustments. The City may approve adjustments to the spacing standards of subsections (.09) and (.10) above through a Class II process, or as a waiver per Section 4.118(0.3)A, where an existing connection to a City street does not meet the standards of the roadway authority, the proposed development moves in the direction of code compliance, and mitigation measures alleviate all traffic operations and safety concerns. Mitigation measures may include consolidated access (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right in/out only), or other mitigation.

~~**Section 4.178. Sidewalk and Pathway Standards.**~~

(.01) ~~Sidewalks. All sidewalks shall be concrete and a minimum of five (5) feet in width, except where the walk is adjacent to commercial storefronts. In such cases, they shall be increased to a minimum of ten (10) feet in width.~~ Sidewalk widths shall include a ~~minimum through zone of at least five feet. The clear zone may be reduced pursuant to variance procedures in Section 4.196.~~

~~(.02) Pathways~~

~~A. Bicycle facilities shall be provided using a bicycle lane as the preferred facility design. Other facility designs described in the Public Works Standards shall only be used if the bike lane standard cannot be constructed due to physical or financial constraints. The order of preference for bicycle facilities is:~~

~~1. Bike lane.~~

~~2. Shoulder bikeway.~~

~~3. Shared roadway.~~

~~B. Pedestrian and Bicycle Facilities located within the public right-of-way or public easement shall be constructed in conformance with the Public Works Standards.~~

~~C. To increase safety, all street crossings shall be marked and should be designed with a change of pavement such as brick or exposed aggregate. Arterial crossings may be signalized at the discretion of the City Engineer.~~

~~D. All pathways shall be clearly posted with standard bikeway signs.~~

~~E. Pedestrian and equestrian trails may have a gravel or sawdust surface if not intended for all weather use.~~

~~(.03) Bicycle and pedestrian paths shall be located to provide a reasonably direct connection between likely destinations. A reasonably direct connection is a route which minimizes out-of-direction travel considering terrain, physical barriers, and safety. The objective of this standard is to achieve the equivalent of a 1/4 mile grid of routes.~~

~~(.04) Pathway Clearance.~~

~~A. Vertical and horizontal clearance for bicycle and pedestrian paths is specified in the Public Works Standards. The clearance above equestrian trails shall be a minimum of ten feet.~~ ~~[Section 4.178 amended by Ord. 610, 5/1/06]~~

Section 4.197. Zone Changes and Amendments To This Code – Procedures.

(.01) The following procedure shall be followed in applying for an amendment to the text of this Chapter:

A. The Planning Commission shall conduct a public hearing on the proposed amendment at its earliest practicable meeting after it is proposed and shall, within forty (40) days after concluding the hearing, provide a report and recommendation to the City Council regarding the proposed amendment. The findings and recommendations of the Commission shall be adopted by resolution and shall be signed by the Chair of the Commission.

B. In recommending approval of a proposed text amendment, the Planning Commission shall, at a minimum, adopt findings relative to the following:

1. That the application was submitted in compliance with the procedures set forth in Section 4.008; and
2. The amendment substantially complies with all applicable goals, policies and objectives set forth in the Comprehensive Plan; and
3. The amendment does not materially conflict with, nor endanger, other provisions of the text of the Code; and
4. If applicable, the amendment is in compliance with Statewide Land Use Planning Goals and related administrative rules; and

~~4.~~ 5. If applicable, the amendment is necessary to ~~insure~~ ensure that the City's Land Use and Development Ordinance complies with mandated requirements of State or Federal laws and/or statutes.

(.02) In recommending approval or denial of a proposed zone map amendment, the Planning Commission or Development Review Board shall at a minimum, adopt findings addressing the following criteria:

A. That the application before the Commission or Board was submitted in accordance with the procedures set forth in Section 4.008, Section 4.125 (.18)(B)(2) or, in the case of a Planned Development, Section 4.140; and [Amended by Ord 557, adopted 9/5/03]

B. That the proposed amendment is consistent with the Comprehensive Plan map designation and substantially complies with the applicable goals, policies and objectives, set forth in the Comprehensive Plan text; and

C. In the event that the subject property, or any portion thereof, is designated as "Residential" on the City's Comprehensive Plan Map; specific findings shall be made addressing substantial compliance with Implementation Measures 4.1.4.b, d, e, q, and x of Wilsonville's Comprehensive Plan text; and [Amended by Ordinance No. 538, 2/21/02.]

D. That the existing primary public facilities, i.e., roads and sidewalks, water, sewer and storm sewer are available and are of adequate size to serve the proposed development; or, that adequate facilities can be provided in conjunction with project development. The Planning Commission and Development Review Board shall utilize any and all means to insure that all primary facilities are available and are adequately sized; and

E. That the proposed development does not have a significant adverse effect upon Significant Resource Overlay Zone areas, an identified natural hazard, or an identified geologic hazard. When Significant Resource Overlay Zone areas or natural hazard, and/or geologic hazard are located on or abut the proposed development, the Planning Commission or Development Review Board shall use appropriate measures to mitigate and significantly reduce conflicts between the development and identified hazard or Significant Resource Overlay Zone and

F. That the applicant is committed to a development schedule demonstrating that development of the property is reasonably expected to commence within two (2) years of the initial approval of the zone change; and

G. That the proposed development and use(s) can be developed in compliance with the applicable development standards or appropriate conditions are attached that insure that the project development substantially conforms to the applicable development standards.

H. Adequate public facilities, services, and transportation networks are in place, or are planned to be provided concurrently with the development of the property. The applicant shall demonstrate compliance with the Transportation Planning Rule, specifically by addressing whether the proposed amendment has a significant effect on the transportation system pursuant to OAR 660-012-0060. A Traffic Impact Analysis (TIA) shall be prepared pursuant to the requirements in Section 4.133.05.(01).

Section 4.236. General Requirements - Streets.

(.01) Conformity to the Master Plan or Map: Land divisions shall conform to and be in harmony with the Transportation Master Plan (Transportation Systems Plan), the Bicycle and Pedestrian Master Plan, the Parks and Recreation Master Plan, the Official Plan or Map and especially to the Master Street Plan.

(.02) Relation to Adjoining Street System.

[…]

(.03) All streets shall conform to the standards set forth in Section 4.177 and the block size requirements of the zone.
(.04) Creation of Easements: […]
(.05) Topography: […]
(.06) Reserve Strips: […]
(.07) Future Expansion of Street: When necessary to give access to, or permit a satisfactory future division of, adjoining land, streets shall be extended to the boundary of the land division and the resulting dead-end street may be approved without a turn-around. Reserve strips and street plugs shall be required to preserve the objective of street extension. Notification that the street is planned for future extension shall be posted on the stub street.

Appendix J

FINDINGS OF COMPLIANCE WITH THE RTFP AND TPR (ANGELO PLANNING GROUP, 2013)

Findings of Compliance with the RTFP and TPR

In support of the adoption of the proposed Wilsonville Transportation System Plan (TSP), the following tables present findings of compliance with the Metro Regional Transportation Functional Plan (RTFP) and the Transportation Planning Rule (TPR). As established in the RTFP, demonstrating compliance with the RTFP constitutes compliance with the Regional Transportation Plan (RTP).

In Table 1 the left column relates to the RTFP requirements (and contains content that was prepared by Metro), and the right column documents how the City of Wilsonville meets the requirements through existing requirements, or how proposed amendments to the TSP and/or Planning and Land Development Ordinance (the "Development Code," Chapter 4 of the City Code) will meet the requirement upon adoption.

Table 2 includes findings of compliance for the TPR, OAR 660-012. The findings address the relevant sections of the TPR including Section -0045 (Implementation of the TSP) and Section -0060 (Plan and Land Use Regulation Amendments). In some cases, there are cross-references in sub-sections of the TPR to requirements in the RTFP.

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
Allow complete street designs consistent with regional street design policies **(Title 1, Street System Design Sec 3.08.110A(1))**	Existing code requirements and the updated TSP meet these RTFP requirements in the following ways. Code Sections 4.177 (Street Improvement Standards, as revised to include requirements from 4.178 Sidewalk and Pathway Standards establish general standards for streets, sidewalks, and pathways in addition to other criteria established for streets, blocks, and pathways in land divisions in Code Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements – Other). Otherwise, existing code (Section 4.177.02) defers to the Transportation System Plan (TSP) and Public Works Standards for specific roadway cross section design and dimensions. Proposed TSP street cross-sections integrate elements of complete street, green street, and transit-supportive designs (TSP Chapter 3).
Allow green street designs consistent with federal regulations for stream protection **(Title 1, Street System Design Sec 3.08.110A(2))**	
Allow transit-supportive street designs that facilitate existing and planned transit service pursuant 3.08.120B **(Title 1, Street System Design Sec 3.08.110A(3))**	
Allow implementation of: • narrow streets (<28 ft curb to curb); • wide sidewalks (at least five feet of through zone); • landscaped pedestrian buffer strips or paved furnishing zones of at least five feet, that include street trees; • Traffic calming to discourage traffic infiltration and excessive speeds; • short and direct right-of-way routes and shared-use paths to connect residences with commercial services, parks, schools, hospitals, institutions, transit corridors, regional trails and other neighborhood activity centers; • opportunities to extend streets in an incremental fashion, including posted notification on streets to be extended. **(Title 1, Street System Design Sec 3.08.110B)**	Existing code, proposed code amendments (TSP Appendix I), and the updated TSP (Exhibit 1) meet these RTFP requirements as follows: Section 4.177, Street Improvement Standards, require that all street and access improvements conform to the Transportation System Plan and the Public Works Standards. *Note that the Public Works Standards defers to the TSP for street classification, and access and design standards (Section 201.1.03).* The draft TSP Street Standards (Chapter 3) include a narrow local street standard, landscape buffers, and sidewalks consistent with Title 1. Proposed code modifications would clarify that sidewalks are required at a minimum to have a five feet wide unobstructed "through zone." (Proposed new Section 4.177.03.) Existing code language in Section 4.177 requires all street improvements and intersections to conform to the Public Works Standards and to provide for "the continuation of streets through specific developments to adjoining properties or subdivisions," unless there are substantial constraints posed by existing development or topographic or environmental conditions. Proposed code modifications would require a posted notification to indicate that a street will be extended in the future. (Additions to Section 4.177.02.D and. Section 4.236. General Requirements - Streets.) Sections 4.177.03, .04. and .04 contain both new text that has been relocated and proposed text that address needed

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
	pedestrian and bicycle facilities within the public right-of-way, consistent with the RTFP requirements. Proposed new Section 4.154. On-site Pedestrian Access and Circulation includes new pedestrian access and circulation language to ensure connectivity through development sites and to community attractors. Currently, existing code requires site design review for all new development in the city except single-family and two-family homes in residential zones and row houses and apartments in the Village zone. Site design review plans are required to show access to the site as well as vehicle and pedestrian circulation within the site (Section 4.421). Existing standards for streets, blocks, and pathways for land divisions in Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements – Other) further support circulation and connectivity in the city. Note that these requirements will serve to implement the TSP's Safe Routes to School plan (TSP Chapter 6).
Require new residential or mixed-use development (of five or more acres) that proposes or is required to construct or extend street(s) to provide a site plan (consistent with the conceptual new streets map required by Title 1, Sec 3.08.110D) that: • provides full street connections with spacing of no more than 530 feet between connections except where prevented by barriers • Provides a crossing every 800 to 1,200 feet if streets must cross water features protected pursuant to Title 3 UGMFP (unless habitat quality or the length of the crossing prevents a full street connection) • provides bike and pedestrian accessways in lieu of streets with spacing of no more than 330 feet except where prevented by barriers • limits use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections • includes no closed-end street longer than 220 feet or having no more than 25 dwelling units **(Title 1, Street System Design Sec 3.08.110E)**	Existing code requirements meet these RTFP requirements as follows: Before property over 2 acres in size can be developed it must be zoned in one of the Planned Development categories (PDR, PDC, PDI, etc.). Standards for residential zones, the Village Zone, the Holding Zone, the Public Facility Zone, and planned development in the city include: *1. Maximum block perimeter: 1,800 feet.* *2. Maximum spacing between streets or private drives for local access: 530 feet, unless waived by the Development Review Board upon finding that barriers such as railroads, freeways, existing buildings, topographic variations, or designated Significant Resource Overlay Zone areas will prevent street extensions meeting this standard.* *3. Maximum block length without pedestrian and bicycle crossing: 330 feet, unless waived by the Development Review Board upon finding that barriers such as railroads, freeways, existing buildings, topographic variations, or designated Significant Resource Overlay Zone areas will prevent pedestrian and bicycle facility extensions meeting this standard.* The City's subdivision standards require that all streets shall conform to the standards in Section 4.177 and the block size requirements of the zone (Section Section 4.236). Existing code Section 4.177.01.D (proposed to be renumbered

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
	to .02.D) limits dead-end streets and cul-de-sacs to 200 feet in length and restricts them to no more than 25 units, unless, respectively, there are significant constraints posed by existing development, major transportation facilities, or environmental conditions that prevent future street extension and connection, and it is determined that the traffic impacts on adjacent streets will not exceed those from a development of 25 or fewer units.
Establish city/county standards for local street connectivity, consistent with Title 1, Sec 3.08.110E, that applies to new residential or mixed-use development (of less than five acres) that proposes or is required to construct or extend street(s). **(Title 1, Street System Design Sec 3.08.110F)**	Existing code requirements meet these RTFP requirements as follows: Section 4.177, Street Improvement Standards, require that all street and access improvements conform to the Transportation System Plan; the draft TSP includes local street connectivity standards (TSP Chapter 3). Existing street improvement standards for general development address block size, maximum spacing, and dead-ends, and existing street improvement standards for land divisions (Section 4.236) require street plans and, in some cases, reserve strips and street plugs to preserve opportunities for good connections with potential future adjacent development.
<u>Applicable to both Development Code and TSP</u> To the extent feasible, restrict driveway and street access in the vicinity of interchange ramp terminals, consistent with Oregon Highway Plan Access Management Standards, and accommodate local circulation on the local system. Public street connections, consistent with regional street design and spacing standards, shall be encouraged and shall supersede this access restriction. Multimodal street design features including pedestrian crossings and on-street parking shall be allowed where appropriate. **(Title 1,Street System Design Sec 3.08.110G)**	Existing code and the updated TSP (Exhibit 1) meet these RTFP requirements as follows: In addition to the standards and requirements of Section 4.237 for land divisions and street improvement standards in Section 4.177, parcels wholly or partially within the Wilsonville Road Interchange Area Management Plan (IAMP) Overlay Zone are governed by the Access Management Plan in the Wilsonville Road Interchange Area Management Plan (Section 4.133.04. Access Management). The recent Wilsonville Road IAMP and current construction project has already improved the Wilsonville Road interchange. ODOT spacing standards apply to development in the Ellingsen Road interchange. Draft TSP street cross-sections include pedestrian facilities for all streets. As shown in Figures 3-8, 3-9 and 3-10, there is also the option of allowing on-street parking for Collector and Local streets. Proposed street spacing standards are included in the draft TSP (TSP Chapter 3). Additions to Section 4.177 include text to address vehicular connectivity and access requirements, including references to TSP Table 3-2 Access Spacing Standards (TSP Chapter 3).

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
Include Site design standards for new retail, office, multi-family and institutional buildings located near or at major transit stops shown in Figure 2.15 in the RTP: • Provide reasonably direct pedestrian connections between transit stops and building entrances and between building entrances and streets adjoining transit stops; • Provide safe, direct and logical pedestrian crossings at all transit stops where practicable. At major transit stops, require the following: • Locate buildings within 20 feet of the transit stop, a transit street or an intersection street, or a pedestrian plaza at the stop or a street intersections; • Transit passenger landing pads accessible to disabled persons to transit agency standards; • An easement or dedication for a passenger shelter and an underground utility connection to a major transit stop if requested by the public transit provider; • Lighting to transit agency standards at the major transit stop; • Intersection and mid-block traffic management improvements as needed and practicable to enable marked crossings at major transit stops. **(Title 1, Transit System Design Sec 3.08.120B(2))**	Proposed amendments Development Code requirements meet these RTFP requirements as follows: In Section 4.177the proposed Transit Improvements subsection incorporates development requirements related to transit facilities; proposed code language is consistent with Implementation Measure 3.6 from Transit Master Plan and bases required transit amenities on the number of PM peak hour trips expected to be generated by the proposed development. In addition, a new definition for "major transit street" is proposed that is consistent with the definition in the Transit Master Plan. Pursuant to amended code language, improvements at mid-block may include intersection or mid-block traffic management improvements to allow for pedestrian crossings at major transit stops.
(Could be in Comprehensive plan or TSP as well) As an alternative to implementing site design standards at major transit stops (section 3.08.120B(2), a city or county may establish pedestrian districts with the following elements: • A connected street and pedestrian network for the district; • An inventory of existing facilities, gaps and deficiencies in the network of pedestrian routes; • Interconnection of pedestrian, transit and bicycle systems; • Parking management strategies; • Access management strategies; • Sidewalk and accessway location and width; • Landscaped or paved pedestrian buffer strip location and width;	The City is proposing to adopt transit supportive code language consistent with RTFP Title 1, Transit System Design Sec 3.08.120B.2 and will not be establishing a pedestrian district as part of the TSP update.

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
• Street tree location and spacing; • Pedestrian street crossing and intersection design; • Street lighting and furniture for pedestrians; • A mix of types and densities of land uses that will support a high level of pedestrian activity. **(Title 1, Pedestrian System Design Sec 3.08.130B)**	
Require new development to provide on-site streets and accessways that offer reasonably direct routes for pedestrian travel. **(Title 1, Pedestrian System Design Sec 3.08.130C)**	A proposed new code section under Section 4.154, On-site Pedestrian Access and Circulation, addresses this requirement. Propose language is adapted from the State's *Model Development Code for Small Cities.*
Establish parking ratios, consistent with the following: • No minimum ratios higher than those shown on Table 3.08-3. • Mo maximum ratios higher than those shown on Table 3.08-3 and illustrated in the Parking Maximum Map. If 20-minute peak hour transit service has become available to an area within a one-quarter mile walking distance from bus transit one-half mile walking distance from a high capacity transit station, that area shall be removed from Zone A. Cities and counties should designate Zone A parking ratios in areas with good pedestrian access to commercial or employment areas (within one-third mile walk) from adjacent residential areas. Establish a process for variances from minimum and maximum parking ratios that include criteria for a variance. Require that free surface parking be consistent with the regional parking maximums for Zones A and B in Table 3.08-3. Following an adopted exemption process and criteria, cities and counties may exempt parking structures; fleet parking; vehicle parking for sale, lease, or rent; employee car pool parking; dedicated valet parking; user-paid parking; market rate parking; and other high-efficiency parking management alternatives from maximum parking standards. Reductions associated with redevelopment may be done in phases. Where mixed-use	The City's existing parking ratios (Section 4.155.03) comply with the minimum and maximum Zone B (for the rest of the region outside of highly transit and pedestrian accessible areas) standards established in the RTFP. Parking standards in the Village Zone (Table V-2) comply with parking ratios established in Zone A in the RTFP. The Development Review Board has authority to grant waivers to the parking, loading, or bicycle parking standards where the resulting development "will have no significant adverse impact on the surrounding neighborhood, and the community, and that the development considered as a whole meets the purposes of this section and is "in keeping with the purposes and objectives set forth in the Comprehensive Plan and this Code (Section 4.155.02)." Code Sections 4.155.02.D and 4.155.02.E require that parking be determined by summing the requirements for each use on a site or in a building. Only if the peak hours of the uses do not overlap and agreements are legally recorded can parking be jointly used and the required number of parking spaces be jointly determined. There is more flexibility for blending parking requirements in the Village Zone (Section 4.125.07). Existing code does allow for on-street parking to be credited toward parking space requirements (Section 4.155.03.B.7). Landscaping and internal circulation for large parking areas (over 200 parking spaces) is addressed in Section 4.155.03.B.3.; proposed language requires "street-like features" along principal drive isles in parking lots more than three acres in size. Proposed Section 4.177.09 (Approach and Driveway Development Standards, includes requiring driveways to align

Table 1: RTFP Compliance of Wilsonville Development Code

Regional Transportation Functional Plan Requirement	Development Code Compliance
development is proposed, cities and counties shall provide for blended parking rates. Cities and counties may count adjacent on-street parking spaces, nearby public parking and shared parking toward required parking minimum standards. Use categories or standards other than those in Table 3.08-3 upon demonstration that the effect will be substantially the same as the application of the ratios in the table. Provide for the designation of residential parking districts in local comprehensive plans or implementing ordinances. Require that parking lots more than three acres in size provide street-like features along major driveways, including curbs, sidewalks and street trees or planting strips. Major driveways in new residential and mixed-use areas shall meet the connectivity standards for full street connections in section 3.08.110, and should line up with surrounding streets except where prevented by topography, rail lines, freeways, pre-existing development or leases, easements or covenants that existed prior to May 1, 1995, or the requirements of Titles 3 and 13 of the UGMFP. Require on-street freight loading and unloading areas at appropriate locations in centers. Establish short-term and long-term bicycle parking minimums for: • New multi-family residential developments of four units or more; • New retail, office and institutional developments; • Transit centers, high capacity transit stations, inter-city bus and rail passenger terminals; and • Bicycle facilities at transit stops and park-and-ride lots. **(Title 4, Parking Management Sec 3.08.410)**	with existing or planned streets on adjacent sites under prescribed conditions. Section 4.155 combines requirements for bicycle parking with requirements for motor vehicle parking. The section establishes the number of bicycle parking spaces required according to type of use (Table 5 Parking Standards). Pursuant to Table 5, a percentage of bicycle parking at park-and-ride facilities and transit stations must be enclosed. Village Zone requirements include standards for short term and long term bicycle parking (Section 4.125.07.D.3). A new proposed Section 4.155.07 addresses short term and long term bicycle parking citywide. These changes in effect expand the detailed bicycle parking standards established in the Village Zone to other zones in the city.

Regional Transportation Functional Plan Requirement	Local Comprehensive Plan/other Adopted Plan Reference
(Could be located in Development code or Comprehensive Plan) As an alternative to implementing site design standards at major transit stops (section 3.08.120B(2), a city or county may establish pedestrian districts with the following elements: • A connected street and pedestrian network for the district; • An inventory of existing facilities, gaps and deficiencies in the network of pedestrian routes; • Interconnection of pedestrian, transit and bicycle systems; • Parking management strategies; • Access management strategies; • Sidewalk and accessway location and width; • Landscaped or paved pedestrian buffer strip location and width; • Street tree location and spacing; • Pedestrian street crossing and intersection design; • Street lighting and furniture for pedestrians; • A mix of types and densities of land uses that will support a high level of pedestrian activity. **(Title 1, Pedestrian System Design Sec 3.08.130B)**	The City is proposing to adopt transit supportive code language consistent with RTFP Title 1, Transit System Design Sec 3.08.120B.2 and will not be establishing a pedestrian district as part of the TSP update.
When proposing an amendment to the comprehensive plan or to a zoning designation, consider the strategies in subsection 3.08.220A as part of the analysis required by OAR 660-012-0060. If a city or county adopts the actions set forth in 3.08.230E (parking ratios, designs for street, transit, bicycle, pedestrian, freight systems, TSMO projects and strategies, and land use actions) and section 3.07.630.B of Title 6 of the UGMFP, it shall be eligible for an automatic reduction of 30 percent below the vehicular trip generation rates recommended by the Institute of Transportation Engineers when analyzing the traffic impacts, pursuant to OAR 660-012-0060, of a plan amendment in a Center, Main Street, Corridor or Station Community. **(Title 5, Amendments of City and County Comprehensive and Transportation System Plans Sec 3.08.510A,B)**	The strategies and actions in RTFP Sections 3.08.220A and 3.08.230E were integrated into the updated TSP. Existing code refers to and requires traffic impact studies or analyses; proposed language in Section 4.197, Zone Changes and Amendments To This Code – Procedures, requires findings of compliance with applicable Statewide Land Use Planning Goals and related administrative rules.

Regional Transportation Functional Plan Requirement	Local Comprehensive Plan/other Adopted Plan Reference
(Could be located in TSP or other adopted policy document) Adopt parking policies, management plans and regulations for Centers and Station Communities. Plans may be adopted in TSPs or other adopted policy documents and may focus on sub-areas of Centers. Plans shall include an inventory of parking supply and usage, an evaluation of bicycle parking needs with consideration of *TriMet Bicycle Parking Guidelines*. Policies shall be adopted in the TSP. Policies, plans and regulations must consider and may include the following range of strategies: • By-right exemptions from minimum parking requirements; • Parking districts; • Shared parking; • Structured parking; • Bicycle parking; • Timed parking; • Differentiation between employee parking and parking for customers, visitors and patients; • Real-time parking information; • Priced parking; • Parking enforcement. **(Title 4, Parking Management Sec 3.08.410I)**	The updated TSP addresses transportation needs and includes policies and requirements for the Town Center. Parking Management Plans are addressed in Chapter 6 of the TSP.

Table 2 includes findings of compliance for the Transportation Planning Rule (TPR), OAR 660-012. The findings address the relevant sections of the TPR including Section -0045 (Implementation of the TSP) and Section -0060 (Plan and Land Use Regulation Amendments). In some cases, there are cross-references to RTFP requirements and associated findings.

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	**Findings of Compliance**
(1) Each local government shall amend its land use regulations to implement the TSP.	
(b) To the extent, if any, that a transportation facility, service, or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment.	Section 4.005, Exclusions from Development Permit Requirement identifies the types of public facilities and improvements allowed outright without a development permit. Revised text identifies transportation facilities within the public right-of-way as exempt from development permit requirements.
(c) Where a transportation facility, service or improvement is determined to have a significant impact on land use or requires interpretation or the exercise of factual, policy or legal judgment regarding the application of a comprehensive plan or land use regulation, the local government shall provide a review and approval process that is consistent with 660-012-0050 (Transportation Project Development). Local governments shall amend regulations to provide for consolidated review of land use decisions required to permit a transportation project.	Proposed amendments to Section 4.012. Public Hearing Notices will ensure that governmental agencies potentially impacted by a local decision will have the opportunity to participate in the review of the proposed amendment. In addition, the following Development Code requirements help ensure a multi-jurisdictional review process as follows: • Section 4.035.01.B calls for determination of affected agencies when reviewing site development permit applications. • Section 4.210.01.C requires that the Development Review Board consider the reports of other agencies in reviewing land division applications.
(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities for their identified functions.	The development code meets this requirement. General street requirements under Section 4.236.01 include the provision that land divisions must conform and "be in harmony" with the TSP.
(a) Access control measures.	The updated TSP and supporting existing code language meet this requirement. Block lengths and spacing standards are addressed by the new street design criteria in the TSP (TSP Chapter 3). New development in the city (single-family and two family homes in residential zones and row houses and apartments in the Village zone excepted) is subject to design review pursuant to Section 4.020. Design review plans are required to show access to

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	the site as well as vehicle and pedestrian circulation within the site (Section 4.421). Circulation and connectivity are further supported by land division standards for streets, blocks, and pathways in Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements – Other).
(b) Standards to protect the future operations of roadways and transit corridors	The updated TSP and supporting existing code language meet this requirement. Mobility standards for roadways in the city are established in the OHP for state roadways, in the RTP and RTFP for regional roadways, and in the City TSP for local roadways (TSP Chapter 2, Policy 5). Requirements for conditional use permits (Section 4.184(.01)(A)(3)), zone changes (Section 4.197(.02)(D)), and comprehensive plan changes (Section 4.198(.01)(C)) specify that adequate public facilities must be available, or consistency with State goals and regulations (including transportation) must be demonstrated for the proposed actions. Land division application procedures (Section 4.210(.01)(B)(26)) require that a traffic study be submitted as part of the tentative plat application. All land use and development applications are required to include a traffic study demonstrating that Level of Service standards can be met, unless the traffic study requirement is waived by the Community Development Director (Section 4.008.02.E). Final Stage Two Approval for Planned Development requires that proposed Planned Development provide a study showing that Level of Service D performance standards can be met at affected intersections (Section 4.140.09.J.2). Detailed traffic impact analysis requirements are established for the Wilsonville Road Interchange Area Management Plan Overlay Zone (Section 4.133.05.01).
(d) Coordinated review of future land use decisions affecting transportation facilities, corridors or sites	See response and proposed amendments related to -0045(1)(c).
(e) Process to apply conditions to development	City code authorizes decision makers to apply

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
proposals in order to minimize impacts and protect transportation facilities	conditions of approval depending on the estimated impacts of the proposed action. Applying conditions of approval is acknowledged and authorized in provisions for general administration (Section 4.015), conditional use permits (Section 4.184), zone changes (Section 4.197), comprehensive plan amendments (Section 4.198), and land divisions (Section 4.210 (.01)(C)(3)).
(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of: land use applications that require public hearings, subdivision and partition applications, applications which affect private access to roads, applications within airport noise corridor and imaginary surfaces which affect airport operations.	See response and proposed amendments related to -0045(1)(c).
g) Regulations assuring amendments to land use designations, densities, design standards are consistent with the function, capacities, and levels of service of facilities designated in the TSP.	Existing Development Code requirements meet this requirement. Zone change proposals require findings that state that "primary public facilities, i.e., roads and sidewalks, water, sewer and storm sewer are available and are of adequate size to serve the proposed development; or, that adequate facilities can be provided in conjunction with project development." Furthermore, the Planning Commission and Development Review Board "shall utilize any and all means to insure that all primary facilities are available and are adequately sized" (Section 4.197(.02)(D)). Comprehensive plan changes must be supported by findings that the amendment supports applicable Statewide Planning Goals (Section 4.198(.01)(C)) and that the proposed change "will not result in conflicts with any portion of the Comprehensive Plan (Section 4.198(.01)(D)."
(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth in 660-012-0040(3)(a-d):	
(a) Provide bicycle parking in multifamily developments of 4 units or more, new retail, office and institutional developments, transit transfer stations and park-and-ride lots	***Addressed by RTFP, Title 4: Regional Parking Management, 3.08.410.I.*** Section 4.155 combines requirements for bicycle parking with requirements for motor vehicle parking. The section establishes the number of

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	bicycle parking spaces required according to type of use. A percentage of bicycle parking at park-and-ride facilities and transit stations must be enclosed. New proposed Section 4.155.07 addresses short term and long term bicycle parking citywide.
(b) Provide "safe and convenient" (per subsection 660-012-0045.3(d)) pedestrian and bicycle connections from new subdivisions/multifamily development to neighborhood activity centers; bikeways are required along arterials and major collectors; sidewalks are required along arterials, collectors, and most local streets in urban areas except controlled access roadways	***Addressed by RTFP, Title 1: Pedestrian System Design, 3.08.130, and Title 1: Bicycle System Design, 3.08.140*** Pursuant to the draft TSP (Chapter 3,), bikeways are required along arterials and collectors and sidewalks are required along all streets. Roadway cross-sections shown in the 2013 draft TSP include bike lanes for all roads other than local streets and sidewalks for all roads. Proposed subsections under 4.177 Street Improvement Standards includes existing code language that requires that bicycle and pedestrian facilities be located "to provide a reasonably direct connection between likely destinations" and describes a "reasonably direct connection" as a route that minimizes out-of-direction travel (existing Section 4.178 Sidewalk and Pathway Standards). New subsection 4.154.01, On-site Pedestrian Access and Circulation, addresses pedestrian connectivity within developments. Design review plans are required to show access to the site as well as vehicle and pedestrian circulation within the site (Section 4.421(.01)C. Drives, Parking and Circulation, under Criteria and Application of Design Standards: "With respect to vehicular and pedestrian circulation, including walkways, interior drives and parking, special attention shall be given to location and number of access points, general interior circulation, separation of pedestrian and vehicular traffic, and arrangement of parking areas that are safe and convenient and, insofar as practicable, do not detract from the design of proposed buildings and structures and the neighboring properties." Circulation and connectivity are further supported by land division standards for streets, blocks, and pathways in Sections 4.236 (General Requirements – Streets) and 4.237 (General Requirements –

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	Other).
(c) Off-site road improvements required as a condition of development approval must accommodate bicycle and pedestrian travel, including facilities on arterials and major collectors	Where off-site improvements are required, the existing roadway cross-sections will govern (TSP Chapter 3). The draft TSP currently requires pedestrian and bicycle facilities on arterials and collectors.
(e) Provide internal pedestrian circulation within new office parks and commercial developments	***Addressed by RTFP, Title 1: Street System Design, 3.08.110E*** Site Design Review is required for all new development except for single- and two-family dwellings, and non-residential development in the Village zone; site design review plans are required to show access to the site as well as vehicle and pedestrian circulation within the site (Section 4.421). New subsection 4.154.01, On-site Pedestrian Access and Circulation, addresses pedestrian connectivity within developments.
(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible, local governments shall adopt land use and subdivision regulations as provided in (a)-(g) below:	
(a) Transit routes and transit facilities shall be designed to support transit use through provision of bus stops, pullouts and shelters, optimum road geometrics, on-road parking restrictions and similar facilities, as appropriate;	***Addressed by RTFP, Title 1: Transit System Design, 3.08.120*** The proposed Transit Improvement subsection under Section 4.177 Street Improvement Standards incorporates development requirements related to transit facilities, consistent with the recommendations of the Wilsonville Transit Master Plan and this TPR requirement.
(b) New retail, office and institutional buildings at or near major transit stops shall provide for convenient pedestrian access to transit through the measures listed in (A) and (B) below. (A) Walkways shall be provided connecting building entrances and streets adjoining the site; (B) Pedestrian connections to adjoining properties shall be provided except where such a connection is impracticable as provided for in OAR 660-012-0045(3)(b)(E). Pedestrian connections shall connect the on site circulation system to existing or proposed streets, walkways, and driveways that	***Addressed by RTFP, Title 1: Transit System Design, 3.08.120*** New subsection 4.154.01, On-site Pedestrian Access and Circulation, addresses pedestrian connectivity within developments consistent with the TPR requirement. Under Street Improvement Standards, Subsections 4.177.03, .04 and.05, includes existing and proposed text that addresses pedestrian and bicycle connectivity between and within proposed developments. , Subsection

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property;	4.177.06 Transit Improvements, specifies connectivity requirements specific to transit streets and stops.
(C) In addition to (A) and (B) above, on sites at major transit stops provide the following: (i) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection; (ii) A reasonably direct pedestrian connection between the transit stop and building entrances on the site; (iii) A transit passenger landing pad accessible to disabled persons; (iv) An easement or dedication for a passenger shelter if requested by the transit provider; and (v) Lighting at the transit stop.	***Addressed by RTFP Title 1: Pedestrian System Design, 3.08.130B*** Proposed additions to the Street Improvement Standards address transit improvements and access (Section 4.177.06), and include requirements to reasonably direct pedestrian connections between building entrances and transit facilities, as well as between buildings on the site and streets adjoining transit stops. Consistent with the Wilsonville Master Plan, required transit amenities depend on the number of PM peak hour trips the proposed development is expected to generate.
(c) Local governments may implement (4)(b)(A) and (B) above through the designation of pedestrian districts and adoption of appropriate implementing measures regulating development within pedestrian districts. Pedestrian districts must comply with the requirement of (4)(b)(C) above;	The City is not proposing to designate a pedestrian district at this time.
(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools;	Proposed new Subsection 4.155.06 Carpool and Vanpool Parking Requirements satisfies this requirement.
(e) Existing development shall be allowed to redevelop a portion of existing parking areas for transit-oriented uses, including bus stops and pullouts, bus shelters, park and ride stations, transit-oriented developments, and similar facilities, where appropriate;	Proposed new Subsection 4.155 (.07 Parking Area Redevelopment satisfies this requirement.
(f) Road systems for new development shall be provided that can be adequately served by transit, including provision of pedestrian access to existing and identified future transit routes. This shall include, where appropriate, separate accessways to minimize travel distances;	***Addressed by RTFP Title 1: Street System Design, 3.08.110E, and Title 1: Transit System Design, 3.08.120, and Title 1: Pedestrian System Design, 3.08.130*** Proposed new language under Section 4.177 Street Improvement Standards satisfies this requirement.
(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.	The draft TSP includes elements of the Transit Master Plan (2008) and has identified and prioritize transit-related projects as part of the City's transportation system, consistent with future transportation demands based on the City's current land uses. Zoning along transit lines in

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 Implementation of the TSP	Findings of Compliance
	Wilsonville is generally consistent with this TPR provision.
(5) In MPO areas, local governments shall adopt land use and subdivision regulations to reduce reliance on the automobile which:	
(a) Allow transit-oriented developments (TODs) on lands along transit routes;	See OAR 660-012-0045(4)(g) above. While not allowed on all land along transit routes in Wilsonville, there is a significant amount of mixed use zoning along the routes that will allow this type of development – in particular within Villebois/ Village Zone and the Town Center.
(b) Implements a demand management program to meet the measurable standards set in the TSP;	TDM program elements are included in TSP Chapter 6.
(c) Implements a parking plan which: (A) Achieves a 10% reduction in the number of parking spaces per capita in the MPO area over the planning period. This may be accomplished through a combination of restrictions on development of new parking spaces and requirements that existing parking spaces be redeveloped to other uses; (B) Aids in achieving the measurable standards set in the TSP in response to OAR 660-012-0035(4) [reducing reliance on the automobile]; (C) Includes land use and subdivision regulations setting minimum and maximum parking requirements in appropriate locations, such as downtowns, designated regional or community centers, and transit oriented-developments; and (D) Is consistent with demand management programs, transit-oriented development requirements and planned transit service. ***OR*** (d) As an alternative to (c) above, local governments in an MPO may instead revise ordinance requirements for parking as follows: (A) Reduce minimum off-street parking requirements for all non-residential uses from 1990 levels; (B) Allow provision of on-street parking, long-term lease parking, and shared parking to meet minimum off-street parking requirements; (C) Establish off-street parking maximums in appropriate locations, such as downtowns, designated regional or community centers, and transit-oriented developments; (D) Exempt structured parking and on-street parking from parking maximums;	The City will prepare a parking management plan for the Town Center as a future next step after TSP adoption. • Existing Development Code requirements address parking reduction objectives in the following sections: Off-street parking requirements for non-residential uses have been reduced from 1990 levels because Wilsonville adopted RTP parking ratios as part of its last TSP update. • Off-street parking is allowed according to roadway cross-sections and Subsection 4.155 (.02) General Provisions make provisions for shared parking and off-street parking. • Section 4.155 and Table 5 (Parking Standards) establish both minimum and maximum parking space requirements. • Proposed addition to Subsection 4.155(.03) exempts structured parking and on-street parking from parking maximums. • Section 4.155(.03)B sets standards for parking area landscaping; landscaping and internal circulation for large parking areas (over 200 parking spaces) is addressed in Section 4.155.03.B.3. Subsection 4.155.03.B.3

Table 2: Findings of Compliance with the TPR (OAR 660-012-0045 and -0060)

OAR 660-012-0045 **Implementation of the TSP**	**Findings of Compliance**
(E) Require that parking lots over 3 acres in size provide street-like features along major driveways (including curbs, sidewalks, and street trees or planting strips); and (F) Provide for designation of residential parking districts. (e) Require all major industrial, institutional, retail and office developments to provide either a transit stop on site or connection to a transit stop along a transit trunk route when the transit operator requires such an improvement.	
OAR 660-012-0060 Plan and Land Use Regulation Amendments	**Findings**
Amendments to functional plans, acknowledged comprehensive plans, and land use regulations that significantly affect an existing or planned transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility.	All land use and development applications are required to include a traffic study demonstrating that Level of Service standards can be met, unless the traffic study requirement is waived by the Community Development Director (Section 4.008.02.E). Final Stage Two Approval for Planned Development requires that proposed Planned Development provide a study showing that Level of Service D performance standards can be met at applicable intersections (Section 4.140.09.J.2). Zone change proposals require findings that "primary public facilities, i.e., roads and sidewalks, water, sewer and storm sewer are available and are of adequate size to serve the proposed development; or, that adequate facilities can be provided in conjunction with project development." Furthermore, the Planning Commission and Development Review Board "shall utilize any and all means to insure that all primary facilities are available and are adequately sized" (Section 4.197(.02)(D)). Proposed language in Section 4.197, Zone Changes and Amendments To This Code – Procedures, requires findings of compliance with applicable Statewide Land Use Planning Goals and related administrative rules. The City also has specific traffic impact analysis requirements for development within the vicinity of the Wilsonville Road interchange (Section 4.133.05.01).

Appendix K

PUBLIC INVOLVEMENT DOCUMENTATION

Comments from the January 11, 2012 TSP Update Open House

Comments from the Comment Cards

1. Provide feedback on identified transportation improvement projects.

* Boones Ferry river crossing bridge should not be included in TSP unless available for local vehicle access between north & south of river.

* Glad to see planned development of more connector roads serving the west side.

* 1E on Tonquin Trail is not a good alignment:
    a. Crosses Coffee Lake Creek where drop is dramatic
    b. Road will not serve property development on 2 sides so more expensive (less developer benefit)

    c. Alignment devalues industrial zoned property west of crossing by cutting it into 2 big triangles. Better alignment would run from Arrowhead Lane ± east toward Bailey.

  Road: Kinsman to Boeckman extension:
    1. Will be expensive due to wetlands
    2. Poor need (Villebois will have good car connect to WES)
    3. Why not change this route to a bike-ped route?
    4. Truck traffic from Sherwood could go to freeway with a connection to Grahams Ferry.

* Need the connection to Villebois.

* Tonquin Trail - Strong support for French Prairie Bridge to promote bike tourism, celebrating cultural history of Willamette Valley. OK with bridge being open to vehicles as long as there are good bike/ped facilities on it.

* I would very much like to see the French Prairie Bridge built.

* Keep the Bike/Ped bridge IN the TSP.

* Really appreciate the bicycle/pedestrian plans, expecially I-5 bike/emergency bridge. And Trails.

* Right turn from Wilsonville Road through parking lot between Thai restaurant & Wells Fargo to Main Street. Traffic is too fast and doesn't stop. Very dangerous. Speed bumps needed.

* Smart bus should meet the last WES train from Beaverton.

* Very pleased to see the future plans are continuing to keep up with our ever changing city which require careful planning.

2. Identify and prioritize what you believe to be the critical gaps and deficiencies in the City's transportation system.

* Boeckman Road dip needs bike/ped lane

* Safe crossing for bicyclists over the Willamette River.
    1. Using I-5 extremely dangerous

2. Canby Ferry may not be able to operate due to the closing of the Oregon City locks. According to the "Spokesman", the ferry may not be able to be serviced.

Better bus service to the west side of town

* Barber Street extension, bike bridge over Willamette

* Lack of a bicycle/pedestrian crossing of the Willamette River

* The number one priority must be what is already prioritized and City Council approved - the Bicycle-Pedestrian Bridge. I see no project that holds more potential benefit for the City as a whole than getting that bridge in place as soon as possible with appropriate path connections on both ends.

* Will Parkway Drive handle the additional traffic load generated by the new apartment complex now under construction and the completion of the OIT campus?

* Gaps:
  Bike/Ped Bridge across the Willamette
  Bike/Ped connection from Villebois to SMART Hub
  Bike/Ped path improvements on Boeckman Rd. between Canyon & where sidewalks begin.
  Bike/Ped trail connections along river between Rivergreen & Old Town

  Another Gap:
  SMART connection from Villebois to the Wilsonville Road route during regular business hours instead of just at commuter time

  More Gaps:
  More cul-de-sac connections to Rivergreen Park (would have to purchase a house along route. Create path & then resell house probably unless homeowners volunteered to give right-of-way).

* I-5 bike/emergency bridge. Recall January 2008 it took me 3 1/2 hours to drive an employee from Wilsonville Road to Charbonneau. No emergency vehicle access.

* 1. Control speeding on Memorial Drive
  2. Eliminate thru traffic from Wilsonville Road to Main Street (in front of Wells Fargo Bank)
  3. Provide free left turn from Main Street to Parkway.

* Transportation connectivity with TriMet, Charriots. Continue our working relationship with Sherwood, Tualatin, West Linn for connectivity.

3. List new transportation solutions to address critical gaps and deficiencies in the City's transportation system.

* Boones Ferry speed limit should be 40 mph

* Bike, pedestrian and emergency bridge over river/car free.
  SMART use Graham Oaks Park as terminus for all west side routes
  SMART connection with a bus stop at Wilsonville and Montebello Roads to a bus that would directly go to "downtown" businesses when WES is not running

* I, and many of my 500 co-workers at the Aurora Airport, would love to be able to bike to work, but there is not way to bike across the river. Many of us would bike daily if there were a bike-friendly crossing. Bike racks on the SMART 3X are often full, but at once per hour that service is too infrequent to be convenient for many.

* Keep WES going even if it is not paying for itself yet. It is critical to the long-term viability and livability of our community.

* By improving trails - gives alternative access to pedestrians and bicyclists - so important. Also contributes to liveability of our community - so important to Wilsonville citizens. On upcoming community survey this question should be asked: Why did you choose to live in Wilsonville? I'm certain #1/#2 response will be liveability/schools. This response should be on City Council's mind in making TSP decsisions.

* Fix grade change by theater on Parkway Ave. - what's there now is effective for slowing traffic, but it more like a launch than a road.
  Is Washington County serious about dumping Sherwood/Tualatin Road & 99W traffic in on I-5 at Elligsen Road?

* Stop sign enforcement needed on Holly Lane as you turn right from Wilsonville Road. Traffic crossing Holly Lane often does not stop or look.

* Growth of WES to Salem, Albany, Eugene, Sherwood, Newberg, McMinnville.

Comments from the Post-its on the Boards

Where do you live or work?

17 people indicated that they live here:
- 1 - north Canyon Creek area
- 1 - Wilsonville Meadows
- 1 - Courtside Estates
- 2 - Villebois
- 1 - Parkwood Estates
- 2 - Fox Chase
- 1 - Morey's Landing
- 1 - Old Town
- 3 - Village at Main Street
- 2 - Day Dream
- 2 - Charbonneau

10 people indicated that they work here:
- 1 - north of Wilsonville
- 3 - NW Wilsonville
- 2 - City Hall
- 1 - Parkwood Estates
- 3 - Old Town area

Planned Street Projects and Future 2035 Operation Deficiencies Board

Roundabout would be a good fix for Stafford Rd/65th

Existing Transit Coverage Board

Need park & ride for TriMet connection

Jamaica neighborhood at disadvantage in using transit to get to Town Center
- Have to sit and wait at transit center
- Faster to just walk (though dangerous along Wilsonville Road)

Doesn't see bus in Thriftway area but does go to Fred Meyer

Would like route on Wilsonville Road to go all the way to primary school every time

Would like I-5 pedestrian crossing (aligned with Barber St) concept to also include transit consideration
More functional
Additional funding sources

Transit Frequency and Stop Deficiencies Board

Be mindful of connections to adjacent cities
Straight to downtown Portland
Extension of WES line….
Expect to find that it will be a key route in the future with additional passenger rail connections.
Provide efficient connection to Portland (<1 hour)

Bicycles and Pedestrians Board

Left turn from 95th to Boones Ferry is going to be very difficult for bicyclists with the new improvements.
Fix Boeckman Road Roundabout - currently not continuous.
Would like to see ped/bike facilities connecting Villebois to Boeckman
Lots of people (peds/bikes) use 110th which doesn't have facililties for them.
Maybe an interim measure?
Path that is temporary?
Prioritize Barber - Villebois over Kinsman - Boeckman
Yes! Great idea!
Yes
Need to connect Villebois to SMART area via Barber St.
Locate Bike/Ped bridge at west boundary of city on Metro property - connect Tonquin Trail to Willamette Bikeway.
Good idea.
Bridge (ped/bike) could make Wilsonville a huge bicycle tourism area.
Historical resources
Small town feel
Having one more important than location. (avid cyclist would be more so if could get across river.)
Bike/ped bridge across Willamette.
There is a great need for a bridge connection for bike/ped across the river.
Canyon Creek Road needs crosswalks
at Murray (over to Xerox)
at Burns (to Costco)
all residential on east and destination on west
just ordinary one with signs - enhanced would be nice but not critical
traffic moves fast and is not mindful of peds
How will ITS Study through Clackamas County affect bicycling at intersections?
ITS Study in 2013 or so?
Fix in both directions. Highly unsafe! [note located at Boeckman Road Dip]
Need to address crossing Wilsonville Road at Town Center.
Multi-use path on Town Center Loop E just ends - how do you use it and then cross Wilsonville Road?

Freight System Board

Concerned about constructibility of Kinsman Road extension
across wetlands/soil issues
are adjacent lands going to develop?
If not, then don't see solid reason to build it.
Don't want to delay Barber St. connection
Barber St. desperately needed as connection to Villebois
otherwise Wilsonville Road will have more congestion
also helps overall circulation/connectivity
So much concern about *where* to connect Brown Rd that haven't moved forward with this important connection [note placed over proposed Brown Road connection into Old Town]
Marine freight from river - 55 tons/year (note placed in Wilsonville Concrete area)

Existing Freight System Board

Would like the Barber St. connection (potential Villebois resident)
Thought that it would be built at the same time as Primary School.
Kinsman Extension also critical to circulation

Additional comments received via email for the Open House

* I will not be able to make it to the meeting this evening but I wanted to know that I am in favor of the bike/pedestrian bridge across the Willamette to be in the Transportation Master Plan. If you need more information, please e-mail or call me. Kristi Halstead

* Dear City Council,

  I am unable to attend the open house tonight (Jan 11) but has brought to my attention that the bike/pedestrian bridge has or will be take out of the Transportation Master Plan. I want to make it clear that as a resident in Wilsonville I am for the bike/pedestrian bridge.

  I have not heard the reasons for the removal. I can imagine that increase in crime and/or drugs due to an increase of traffic might be one of the reasons. However, anyone one wanting to do any of those illegal activities can easily walk or bike across I-5. And let's be realistic about foot traffic; you will not have hoards of people going across every day.

  However, this bridge can be another way to connect are community, the main town of Wilsonville with Charbonneau. I have often thought it would be nice for my family to ride our bikes to Charbonneau, Aurora, or Canby to have lunch but it is not safe to have my kid ride his bike on I-5. It may also lead to some additional tourism. It would extend the corridor that we are building between Wilsonville, Tualatin, and Sherwood. I hope that you seriously consider keeping the bike/pedestrian bridge on the Transportation Master Plan.

  Sincerely, Kamryn Zotos

* I will not be able to attend tonight's Open House at City Hall. However, 16 year resident of Wilsonville I would like to provide some input into the possible decision not abandon the Bike Bridge across the Willamette.

  I am very much in favor of this project going through. Currently there are no viable and safe ways for a bike traffic to cross the Willamette River. The Boones Ferry bridge is very unsafe due to the high speed of traffic and the huge amount of debris in the side lanes.

  The Canby Ferry is really the only option- however it is really only accessible by the folks living on the far East side and then only when it is open.

  The Bike Bridge will help link the Wilsonville to the other side of the Willamette, open up easier access to cross the river, and add a great deal of value to the community. Since Wilsonville has been given one-million dollars to help with the planning it should stay in Master Transportation Plan at least through the next design phase.

  Lee

* Honorable Council,

I served as Chair of the Advisory Committee for Master Planning that created our Bike/Pedestrian, Parks and Transit Master Plans. Our committee was not just a few chosen individuals. We were about 40 people and we had many open houses, surveys, stakeholder meetings, mailings and other methods of soliciting public. We integrated hundreds of comments into every facet of each plan. As such, these plans truly represent a community consensus on the long-term vision of how Wilsonville residents think the City should enhance its quality of life by the way it looks, functions, and allocates resources. The plans were meant to be relevant and valid for 20 years to save the considerable cost of redoing them more frequently.

Given that a bike/pedestrian way across the Willamette was the single most requested thing by the public in every method the Advisory Committee for Master Planning used to get public input, it seems that it would be more prudent to leave it in the TSP and leave our options open as a community. If we give the money back, the bridge is certain to never happen anywhere in Wilsonville. Where in Wilsonville the bridge ends up or whatever path ultimately leads to it, through Old Town or some alternate route, if it is even to be a possibility, it needs to stay in the TSP.

It is NOT smart planning or prudent fiscal management to take it out. Please leave our options open and keep the Bike/Ped bridge in the Transportation Master Plan.

Best regards, Michelle Labrie-Ripple

* Dear City Council:

It has come to my attention that the bike bridge across the Willamette may not come to pass. I would be heart broken if the bike bridge is taken out of the Transportation Master Plan. It gives more safe options of getting around our community and as environmentally conscious as Wilsonville residents are that would be atrocious to loose that option. Whether it ends up in Old Town or else where, that option must not be lost. Please do not let this be dropped.

Sincerely, Susan Cochrun

* **Email Subject:** *So my kids must bike across a freeway bridge to visit friends across the river...*

I hope a passing semi doesn't sweep them off. What do we have to lose by leaving the bike/pedestrian bridge across the Willamette River in the Transportation Master Plan?

It doesn't cost anything to keep the single most popular safety improvement suggestion received by the Advisory Committee for Master Planning. I am at a loss to understand the wisdom in its deletion. Surely you are aware that our kids and visitors must either cross on the freeway bridge or illegally cross the Red Electric bridge. Will someone have to die before this relatively simple structure will be reconsidered? (Keith Cochrun)

* Some issues of concern that I have are as follows:

1. 110th Ave. which connects Tooze Rd. and Barber St. is extremely dangerous for both pedestrians and drivers. People jog along that road all the time and it is extremely hard as a driver to see them as you come up or down over the ridge.
2. Brown Rd. is a very dangerous road for pedestrians to cross at any point along the way. If I allow my children to walk or bike to school they would generally have to cross where Evergreen Dr. meets up with Brown Rd. Cars rarely ever stop for us when we are waiting at that crosswalk. The roundabouts leading up to Villebois are no different. With all the shrubbery it is hard for drivers to see pedestrians at those crosswalks as well. Seeing as how a new Elementary school will be opening soon it would be nice if there were safer ways for children to cross some of these busier streets. The flashing lights near Wood Middle School seem to work pretty well.

3. I'm not sure if this is within city limits but the four way stop where Wilsonville Rd., Stafford Rd., Advance Rd. and Boeckman Rd. meet up is also very dangerous. Most drivers are aware of the four way stop, but between my mother (who lives off of Stafford Rd.) and myself, we have seen about 4 or 5 cars in the past few months run right through that intersection without realizing there is a stop sign.

Thank you for your time, Elisa Walch

Staff/Planning Commission notes from Open House

Al Levit:

The one significant citizen contact was with Steve Vanwechel. He was very concerned about the potential for the French Prairie Bridge being removed from the TSP. He is very much in favor of it but as head of the Old Town Neighborhood Association was reluctant to bring it up at this time. He has his own concept of where the access should be so as not to have huge numbers of bike riders on Boones Ferry Road. I directed him to speak with George Hudson about the Tonquin Trail.

In general, there was much concern about the bridge as a vital connection for Wilsonville.

Comments collected by Chris Neamtzu:

1. Include questions about the TSP preferences/projects into the community survey. (Ann Easterly) This question was answered with the response that the survey will likely have questions about community livability but will not get into the level of detail to address preference for individual transportation projects.

2. A question was raised about making choices and prioritization of projects. It was suggested that a community survey be developed to allow the community to choose projects and major alignments for roads that they support (Sheri Young). It was stated that this was a good idea that can be investigated.

3. It was pointed out that the previous work performed by the ACMP in the Bicycle and Pedestrian Master Plan and the Transit Master Plan should not be disregarded. These plans were based on significant public involvment and community input. They should remain priorities and not be completely replaced with this process. It was stated that the existing plans are being built upon and that this is not a complete re-do of the existing master plans.

4. Core concepts from the 2003 TSP need to be kept in mind and re-enforced in this planning effort. Core concepts that were developed over many years include neighborhood connectivity that all neighborhoods need to be connected, that there should be a grid of streets opposed to fewer larger, wider streets. (Mayor Knapp)

5. A question was posed about when the community decided that they wanted any growth. (Sheri Young)

6. A citizen who lives along Canyon Creek Road in the Canyon Creek Meadow's project stated that there are no crosswalks along Canyon Creek Road and that there should be some safe striped crossings or mid-block crossings at Burns Way, Murray Street, Elligsen and Boeckman Roads to promote safe pedestrian circulation. He also stated that there were no crosswalks at Boeckman Road across Canyon Creek. State that many residents walk on the trails on the west side of the road on the Xerox campus and go to retail shops at Argyle Square.

Comments from May 22, 2012 TSP Update Open House:

Compiled from Comment Cards:

1. Provide feedback on whether the transportation solutions address the gap and deficiencies that were identified.
   - Some deficiencies for 2035 seem to relate to adding more development outside the city. Can we see what is needed without expanding boundaries?

2. Are there any transportation projects missing (bicycle, pedestrian, truck, motor vehicle)?
   - The bike/emergency bridge does ["*not" seems to be needed here*] allow for a bus option to park & ride for south bank commuters In 20 years that might be a useful public alternative to Boone Bridge given how often it already blocks up.

3. Do you agree with the draft prioritization that has been identified for motor vehicle, bicycle and pedestrian projects? Are there any modifications to the prioritization that you would recommend?
   - No. Too much emphasis on freight and new growth. Not enough on connecting existing neighborhoods and businesses.
   - Generally in agreement
   - Remember that Wilsonville's access to bicycles and pedestrians is one of its distinguishing attractive features, especially when compared to places such as Lake Oswego and West Linn.

4. What are the top five transportation projects that are important to you?
   - From comment card:
     - Brown to Boones Ferry
     - Barber to Villebois
     - BF Commerce to Ridder
     - Parkway to 3 lanes
     - Ped/Bike shoulders on Boeckman across Boeckman
   - From comment card:
     1. Canyon Creek Rd to Town Center Loop
     2. R5-Willamette R. Crossing bike-ped bridge
     3. Barber St. Extension
   - From comment card:
     1. Complete Canyon Creek Rd – Town Ctr Loop connection to avoid predictable congestion as development increases traffic on Parkway.
     2. French Prairie Bridge should be built. It would be a strong bicycle/ped addition to Wilsonville's potential tourism.

Post It Comments on Boards:

Bicycle and Pedestrian Board:

- Concern of pedestrian safety where the sidewalk drops off on Elligsen.
- Consider naming trails for ease of wayfinding

Freight System Board:

- Main general concerns:
    - Need connectivity between Hwy 99W & I-5
    - Freight needs to get to I-5.
    - Reduce trucks through downtown Tualatin by having good connection in N. Wilsonville.
    - Use rail instead of trucks to/from NW Wilsonville.
- Undercrossing Imps. (RR) Grahams Ferry
    - Help Access to area
    - Has been better since signs have been put up
- Concern w/ RAB on Brown Rd because Wilsonville Concrete trucks
- Wants to make sure port is still part of TSP and needs are addressed.
- Water Port

Roadway Extensions Board:

- D. Top Priority – Takes pressure off Parkway Ave.
- E. No Roundabouts on Industrial Roads!

Transit Improvements Board:

- Bus service to the commercial center of Charbonneau.

PLANNING COMMISSION MEETING

WEDNESDAY, JANUARY 9, 2013
6:00 PM

VI. WORK SESSIONS

A. Transportation System Plan Online Open House Outcomes

City of WILSONVILLE in OREGON
Planning Division
29799 SW Town Center Lp. E
Wilsonville, OR 97070
503-682-4960

PLANNING COMMISSION STAFF REPORT

Meeting Date: January 9, 2013	**Subject: Results of the Transportation System Plan Online Open House** **Staff Member: Katie Mangle** **Department: Planning**
Action Required	**Advisory Board/Commission Recommendation**
☐ Motion ☐ Public Hearing Date: ☐ Ordinance 1st Reading Date: ☐ Ordinance 2nd Reading Date: ☐ Resolution ☐ Information or Direction ☒ Information Only ☐ Council Direction ☐ Consent Agenda	☐ Approval ☐ Denial ☐ None Forwarded ☒ Not Applicable **Comments:**

Staff Recommendation: N/A
Recommended Language for Motion: N/A

PROJECT / ISSUE RELATES TO:		
☒Council Goals/Priorities	☐Adopted Master Plan(s)	☐Not Applicable

ISSUE BEFORE THE COMMISSION:
Discuss outcomes and lessons learned from the Transportation System Plan (TSP) online open house, a robust website that the City shared with the public in early December to see and comment on the TSP recommendations.

EXECUTIVE SUMMARY:
Instead of hosting a traditional public meeting to share the draft TSP recommendations, the City developed and hosted its first "online open house". In May 2012, the Planning Commission hosted a traditional public open house on the TSP project. Aside from staff, Commissioners and Councilors, approximately 15 people attended this meeting. The intent of using the online approach to community outreach was to encourage more people to view and engage with the TSP recommendations.

Staff believes the experiment was successful enough that it will be included in the City's public involvement "toolbox" for future projects.

- More people (approximately 300) participated in the project than likely would have attended a meeting at City Hall. See the table below for a summary of participation statistics.
- Several participants praised the innovative outreach effort, and no one voiced objections to the lack of a physical meeting or lack of access to the internet to review the materials.
- City staff produced three short videos to communicate different aspects of the project to the public.
- A lot of information about the projects was shared with the public.
- It was easy for participants to submit comments: 27 people submitted detailed comments on the recommendations; 22 people participated in the project prioritization survey. See Attachment A for comments submitted through the Open House website and Attachment B for results from the survey.

In staff's view, the online open house was a success, but also a learning opportunity. Designing a virtual open house proved to be very different than designing a traditional public meeting, and fairly labor-intensive. As a first effort staff notes the following challenges to keep in mind for the next online open house:

- Staff's goal was to keep the information simple and easy to digest. However, it was challenging to succinctly provide quality information about the recommendations.
- It was challenging to design the website for user-friendly navigation. Next time, we will allow more time in the schedule for testing out the fully loaded website prior to launch.
- Having more truly interactive graphic tools (e.g., allowing users to insert comments into a map), would simplify the overall design and make it easier for people to participate.
- People who did participate spent much less time on the site than would normally have been spent in a meeting room.
- The City advertised the open house through email, via an article in the Wilsonville Spokesman, on the City's home page, and in a front page article of the Boones Ferry Messenger. Most (58%) of the people who accessed the TSP Open House main page did so directly, meaning they either used the email link, scanned the URL code included in

the Messenger, or typed in the URL. Others (32%) entered the Open House via the City's website.

Summary of Open House Website Activity

Activity on Specific web page	Unique visitors to the page	Average time spent on the page
Intro Page	318	1:40
Planned Projects	255	4:37
Getting Around in Wilsonville	120	2:20
Big Ideas	88	:57
Comments Page	79	4:11

Staff is currently reviewing the comments and surveys that participants submitted and will work with DKS to incorporate them into the next draft of the TSP as appropriate. All of the comments and survey responses will be shared with the Planning Commission as part of the public record on the TSP. Staff will respond to each person who submitted a question or comment during the open house.

ATTACHMENTS

A. Comments submitted through the Open House website.
B. Results from the project prioritization survey.

To: Neamtzu, Chris
Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Monday, December 03, 2012 9:02 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 389
Submitter's language : Default language
IP address : 198.245.132.3
Time to take the survey : 2 min. , 3 sec.
Submission recorded on : 12/3/2012 9:02:26 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Anonymous
Phone: Not answered
Email Address: Not answered
Mailing Address: Not answered
City: Wilsonville
Zip Code: Not answered

Comments: (please specifiy the area/topic that you are commenting about)
The extension of canyon creek rd to connect to town center loop is vitally important for residents who live along canyon creek to connect to other areas in town. Currently, travelers along canyon creek either have to go around to wilsonville rd or down to parkway to access the town center area. This does not support ease of travel and adds to the congestion and traffic on both of these roads. I'm glad to see that the canyon creek project is on the high priority project list and it should remain there.

To: Neamtzu, Chris
Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Monday, December 03, 2012 3:19 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 392
Submitter's language : Default language
IP address : 24.20.49.4
Time to take the survey : 3 min. , 47 sec.
Submission recorded on : 12/3/2012 3:19:24 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Carol White

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
I like the approach you have taken to priorities, goal setting, etc. I know that everyone has their own pet projects that they would like to see have a higher priority and I would encourage you to think about the two projects that effect Charbonneau - the completion of our pathway system and the bike-ped-emergency bridge over the Willamette. We comprise about 15% of the citizens in this community, contribute a larger than average share of taxes and really ask very little from the city. If there is an opportunity to move either project up on the list, we would be ever so grateful.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Monday, December 03, 2012 5:27 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 393
Submitter's language : Default language
IP address : 24.21.176.185
Time to take the survey : 6 min. , 16 sec.
Submission recorded on : 12/3/2012 5:26:32 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Phillip Rosebrook

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Looking through the trans plan - looks like great improvements. We live at the end of Canyon Creek and hope that you hold out as long as possible for the Canyon Creek extension. This does remove traffic from other routes but this only moves traffic to a dead end. There are many children in our neighborhood and we do not want additional cars traveling near or and perhaps wrong turns into the neighborhood. It does make it easier to travel into town for us but also more likely to get in a car rather than walk or ride a bike. The path right now makes walking easy and quick. Finish the connections to Villabois and other connection issues that are leading to traffic snarls and messes coming from the West side.

To: webmaster@ci.wilsonville.or.us
Subject: RE: TSP Update Comments: May 22, 2012 Open House

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Monday, December 03, 2012 10:50 AM
To: Talk2PC
Subject: TSP Update Comments: May 22, 2012 Open House

Submission information

Submitter DB ID : 391
Submitter's language : Default language
IP address : 50.53.204.167
Time to take the survey : 20 min. , 40 sec.
Submission recorded on : 12/3/2012 10:49:46 AM

Survey answers

Unsigned comments, including comments submitted via this web page, will be compiled in the record for review and consideration, and submitted for the public record without being attributed to you.
Name: Ray

Please provide an email address or mailing address if you wish to receive project mailings.

City	Wilsonville
State	OR
Zip Code	97070

1. Provide feedback on whether the transportation solutions address the gaps and deficiencies that were identified
Not answered

2. Are there any transportation projects missing (bicycle, pedestrian, truck, motor vehicle)?
North Canyon Creek Road needs crosswalks! Dozens of people walk this street every day for recreation and fitness, to go to work at Xerox, Mentor Graphics, Argyle Square, the Burns/Canyon Creek/Parkway light industrial area or offices north of Elligson, to shop at Argyle Square. or to access public transportation.
Traffic on this road is controlled only by speed limits and is unpredictable and many times dangerous. Mothers with children on foot or in strollers and senior citizens are confined to one side of the road or forced to risk dodging speeding traffic in order to cross from on side to the other. I am 83 years old. I have fallen, trying to hurry across this busy road. I

was lucky enough not to have any cars coming at me, but I can't count on that. PLEASE install some crosswalks between Boeckman and Elligson. There are none there now. It's the longest stretch of thoroughfare in the city with out them.

3. Do you agree with the draft priorization that has been identified for motor vehicle, bicycle and pedestrian projects? Are there any modifications to the prioritization that you would recommend?
No! See above.

4. What are the top five transportation projects that are important to you?
Crosswalks on Canyon Creek North.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Tuesday, December 04, 2012 2:41 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 394
Submitter's language : Default language
IP address : 205.173.217.10
Time to take the survey : 5 min. , 4 sec.
Submission recorded on : 12/4/2012 2:40:35 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Steven Van Wechel

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Thanks for this opportunity. I apologize that I was not really aware previously that this plan was also involving the bike/pedestrian stuff as well. I thought it was primarily roads and streets and such, and I have not devoted the time to it like I should have.

My main concern is regarding the bicycle stuff. You will find 185 pages of proposals I have written up concerning the Bicycle Pedestrian Bridge. You can find them on the web site of "FrenchPrairiebridge.org". The documents are entitled "Thoughts on Wilsonville's Bicycle & Pedestrian Bridge", and "Appendix". Maps, etc. are included.

I strongly feel that the bridge will have a MAJOR impact on Wilsonville - economically as well as in needed details in this TSP. The official planning for the bridge won't begin for a couple months yet, but potentials and concerns NEED to be addressed right now in this plan. Unfortunately, I don't see them being addressed yet!

I'm doing this at work where I have access to e-mail, so I'm not going to be able to hit everything. Below are some brief comments.

1) The WES Train Station needs to be connected very well to the Bridge. It appears from the maps that no effort whatsoever is being made to accomplish this - which would be a cut in the throat for the economic potentials the Bridge could be offering the City of Wilsonville!!!! National research is abundant about how such connections with bicycle paths bring money into an area. As the Bridge planning gets started (which includes some aspects of even THIS plan), every effort needs to be put into it to maximize the economic potentials the Bridge will provide. The current TSP plans herein totally ignore this whole aspect!!!!! City Council, the Wilsonville Planning Department, METRO, Clackamas County Chair, Travel Portland and Travel Oregon, and others have received copies of THOUGHTS ON WILSONVILLE'S BICYCLE-PEDESTRIAN BRIDGE and its APPENDIX. These two documents outline in detail the need for a full scale "Bicycle Boulevard" to stretch between WES and the Bridge. Primary characteristics are listed as a formal, "separated" bicycle path to encourage metropolitan, mass transit access to the Bridge. The written plans severely encourages AGAINST this path merely being a 1/100th of an inch high strip of paint. That would be a poor excuse for this needed path; it would be a horrible way to encourage Bridge use via mass transit (which will eventually include weekend & holiday trips - see "Thoughts..." and the "Appendix" for detailed comments about this). This would therefore also have a severe negative impact on the economic impact that the Bridge can present to Wilsonville. Therefore, it is extremely important that these considerations be taken into account NOW even at this stage of planning before our neck gets cut and $$$$ are limited of which could flow into our City.

2) It appears that the thought is to bring a bike path down from Brown Road/Wilsonville Road intersection down the Brown Road Extension to Old Town. I guess that the unspoken assumption then is that bicycle traffic would turn right and head straight for the new Bridge. I would sincerely hope that this input is not too late - but that would be the ABSOLUTE WORST CONCEPT TO FOLLOW!!!!!!!!!!!!!!!! It is the simplist and least expensive, and the easiest for non-thinking minds to think up. This is especially so if there is an alternative route available. Following what appears to be the current line of thinking (letting the bicycle traffic come down through Old Town) creates a number of huge problems (huge at least to those of us living down there!!)! FIRST, that pours all the bicycle traffic for the bridge (regardless of direction - thus many will be riding by there twice on a ride over the bridge) down through a two lane, residential neighborhood not equipped, not ready for, and not wanting that kind of interruption. Some may well think that this could be pretty petty. The question comes down to the amount of use that is anticipated that the Bridge will get. From the response given so far, I am completely confident in saying that I think that the amount of use is going to far exceed anything anyone has really thought of yet. If that is anywhere accurate, that kind of traffic is NOT wanted in Old Town - again, especially if there is an alternative option. Time and space don't allow me to go into that here - let it suffice that the written plans at Frenchprairiebridge.org covers it all in detail. SECOND: The Bridge is going to be a major magnet for automobile parking - both users and just picnic-ers out for nice afternoon and the view of the bridge makes an ideal place (especially if the Bridge includes the tourist building concepts described in Thoughts on Wilsonville's Bicycle-Pedestrian Bridge & Appendix. This will also add considerable extra traffic in its own right through that same two lane, residential street - both via automobiles as well as bicycles - all going two ways/in and out! The plan lists anticipated use of the Bridge at 150 one way trips across the Bridge daily (thus probably close to 300 trips down this residential neighborhood street - with large groups also anticipated -- some which will most likely include well in excess of 1,000 and even into the 2,000+ ---- all going down an otherwise quiet, residential street totally not equipped for such traffic. A number of groups will most likely exceed 100 numerous times a year! All this doesn't even begin to take in the extra automobile use of that same residential street as well!!!!!! The parking AND the automobile AND the bicycle traffic need to be kept OUT of Old Town completely!!

As for my part and at the moment speaking for myself, as past President of the Old Town Neighborhood Association, I can say with good assurity that the Neighborhood Association may well not be up on this plan - or the Bridge plan at this point - but there will be some very loud voices if the current TSP plans are carried through on and will strongly advocate against it. ALL TRAFFIC FOR THE BRIDGE OF ALL TYPES NEEDS TO BE KEPT OUT OF OLD TOWN ALL TOGETHER and one of the alternatives needs to be used. Two alternatives are listed on-line referred to above.

3) I don't understand all the disconnected bicycle paths. It seems that there is a little short section here, another over there, and so forth. Example, you indicated the plan to put a bicycle path down Boones Ferry to the River (hopefully that is only on one side of the street) - as stated above that is a very poor idea in itself, but it is disjointed with the path that goes on under the Freeway. Nothing is really marking a turn of the path to go in that direction or that there is a path over there that goes under the freeway. A concerted effort needs to be put out to start joining the assorted bits of paths scattered around Wilsonville to actually make a network that works (hmm - what a novel idea!!!).

4) RE-04 / BROWN ROAD EXTENSION ..... The City of Wilsonville has long lauded the need and its desire to put in the street. As for my input, I think it should be totally DROPPED from the list of any potential installation. It's called an "OUTLET FOR OLD TOWN" -- and I ask an OUTLET for WHAT???? Going to Newberg??? Why do we need a $15 million dollar road to cut off maybe a 1000 feet????? A few people might use it to get to the two schools, but please answer the question... Why would a person heading for the freeway/Portland/etc. (which probably takes in 90% of the traffic coming out of Old Town) head 3/4 of a mile west just to have to recoup that distance heading back east - and doing so through the tough Wilsonville Road traffic itself and having to drive through it for the whole distance - just to get to the same point where you can get onto the freeway/or the other side of town??? The Brown Road Extension as an OUTLET is a ridiculous, total waste of money and effort!!!!!! The one thing it WOULD do, however, is most likely BRING IN a lot of West Side traffic INTO OLD TOWN on their way to Albertson's and everything in the Fred Meyer complex - thus being in our way of getting out of out homes/or into them besides all the new Fred Meyer traffic!!! It would also put our children more in jeopardy who play and walk along those streets. RE-04 needs to simply be deleted altogether.

4) I haven't had time to really go through everything in detail, so if this is wrong I apologize. It seems that some major features of the Bicycle and Pedestrian Plans done back in the mid-2000's are missing now. For example, a bicycle path from the Stafford Road, going west under the big power lines and crossing a new bicycle-pedestrian overpass over I-5, with the intent of connecting somewhere on to the Tonquin Trail in north Wilsonville. A second overpass was also in the plan to facilitate movement from the WES Train Station direction over to the Bullwinkles, theater, and Thriftway areas. Is the old plan simply defunct now with this new planning - even though it too was set up for 20-years as this one also seems to be????

I unfortunately do not have time to add more feedback. If I can find time, I'll try to get some more feedback put together. Thanks again for this opportunity.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Thursday, December 06, 2012 6:42 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 397
Submitter's language : Default language
IP address : 63.95.90.130
Time to take the survey : 2 min. , 21 sec.
Submission recorded on : 12/6/2012 6:42:24 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Andrew Karr

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
The biggest area of improvement that I see is in the Boeckman Road area. What I don't see is a plan for a I5 interchange at Boeckman Road - I am curious as to why this isn't being considered?
Standalone Pedestrian and Bicycle Improvements is 2nd on my list especially as it relates to proximity to schools.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Wednesday, December 05, 2012 11:44 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 396
Submitter's language : Default language
IP address : 50.137.3.183
Time to take the survey : 12 min. , 20 sec.
Submission recorded on : 12/5/2012 11:43:52 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Chuck Knorr

City: Wilsonville, Or
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
RE 05 The Canyon Cr. Rd. Extension will help tremendously for the traffic to flow north, south in Wilsonville. The addition of multi apts. on Parkway will most probably add a huge amount of traffic on existing Parkway, making it a slow process to get to the city loop area or to the north or south freeway exits. The impending housing addition that will complete the "Renaissance" development will mean more families will be accessing these roads also. When Morningside connects north and south, the flow of this whole area will improve along with RE 05.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Wednesday, December 05, 2012 11:31 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 395
Submitter's language : Default language
IP address : 50.137.3.183
Time to take the survey : 13 min. , 2 sec.
Submission recorded on : 12/5/2012 11:30:33 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Pat Knorr

City: Wilsonville Or.
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
So excited to hear that the city's plan RE 05 (Canyon Creek Rd. Ext.) is on the radar for completion! The reality of our neighborhood finally being able to get to the city loop for business and recreation opportunities without going way out of way is wonderful. For people coming into the area here looking at delvelopmnet projects or for delivery purposes, it will make so much more sense instead of confusion for exiting the area. Can't tell you how confused people get when trying to find out "where" they are! Please prioritize this project!

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [webmaster@ci.wilsonville.or.us]
Sent: Saturday, December 08, 2012 10:13 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 398
Submitter's language : Default language
IP address : 67.168.250.255
Time to take the survey : 6 min. , 37 sec.
Submission recorded on : 12/8/2012 10:13:20 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Ron Kief

City: Sherwood
Zip Code: 97140

Comments: (please specifiy the area/topic that you are commenting about)
First a question - what is the proposed date for widening Day Road?
Something needs to be done with Day Road. Over the last 8 years that we have lived here, traffic has increased 3 times. There are times when it take 15 minute or better just to get out of the driveway. The other issue is... they increase the speed limit to 45 miles an hour. We see people driving 60 miles an hour on Day Road. We are always fearful that cars will slam into the rear of our car when we turn into our driveway.
Is there any talk of both sides of Day Road becoming a part of the City of Wilsonville at the same time? Would that make sewer and water avaiable to us from Wilsonville? Would it change the zoning from residential to commercial?

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [webmaster@ci.wilsonville.or.us]
Sent: Sunday, December 09, 2012 8:20 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 399
Submitter's language : Default language
IP address : 192.65.41.20
Time to take the survey : 20 min. , 41 sec.
Submission recorded on : 12/9/2012 8:20:19 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Dave Lucas

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
We recommend prioritizing BW-05 and BW-06 Sidewalk installation on Willamette Way East and Willamette Way West, respectively. The BW-06 sidewalk is key for Willamette Way West as it is used as the priary walking loop for approximately 250 homeowners in Rivergreen and Fox Chase. Frequency and usage have increased significantly with Graham Oaks across the street. Completing the sidewalks on both sides of Willamette Way West will greatly improve pedestrian and bicyclist safety, encouraging excercise as well as our enjoyment of the neighborhood parks.

BW-05 Willamette Way East Sidewalk Infill is important for the safety of the kids walking and biking between the multiple parks, schools, a church and Grahan Oaks and the adjacent neighborhoods for Morey's Landing, Rivergreen and Fox Chase. It is also the primary walking znd biking loop with Willamette Way West and Graham Oaks.

Thank you for this innovative online Open House.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Monday, December 10, 2012 2:38 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 403
Submitter's language : Default language
IP address : 38.114.147.2
Time to take the survey : 10 min. , 0 sec.
Submission recorded on : 12/10/2012 2:37:31 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Anthony Calcagno

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
I would very much like to see the French Prairie Bridge become a reality. I understand that all of the funding has already been provided for a study of the bridge. Even if the design and construction of the final bridge may not happen for a couple years, this study is an important first step, and cannot wait any longer.

As a bike commuter who rides under I-5 along Wilsonville Road twice a day, I would very much like to see a bike/ped crossing over I-5 at Barber St. Wilsonville Road is a very busy street, and riding through 4 intersections just to cross the freeway is not only time consuming, but unnecessarily dangerous. Another option could be a bike/pedestrian tunnel at Memorial Dr.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [webmaster@ci.wilsonville.or.us]
Sent: Monday, December 10, 2012 7:50 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 400
Submitter's language : Default language
IP address : 71.237.230.147
Time to take the survey : 12 min. , 31 sec.
Submission recorded on : 12/10/2012 7:50:31 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Doris Wehler

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Priority road needs: Boeckman Road overpass and improvements to Boeckman Rd going east; Barber and Kinsman Rd extensions; extension of Canyon Creek to Vlahos & Town Center; widening of Elligsen Rd going east beyond Parkway and fixing intersection (fill project) with 65th & Stafford; construction of Wiedemann Rd, especially on the east side of the freeway. (Note: on your plan, Wiedemann Rd is incorrectly spelled with one "n" on the end.)

Important but probably not economically feasible: loop from Brown Rd into Old town. At least, the city should strive to plan for land purchase for this to be accomplished some day.

Coffee Creek transportation needs will be driven by developers and urban renewal will probably be used.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [webmaster@ci.wilsonville.or.us]
Sent: Monday, December 10, 2012 8:10 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 402
Submitter's language : Default language
IP address : 98.232.243.119
Time to take the survey : 9 min. , 48 sec.
Submission recorded on : 12/10/2012 8:10:54 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): vern wise

City: wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
In the past 6 plus years I had the opportunity in attending DRB, Planning Commission and City Council meetings for the benefit of learning Wilsonville. For the past 4-3 years in particular i have witnessedt the continued discussions in todays and future planning.
I feel the planning for tomorrows INTRA-STRUCTURE in Wilsonvills future growth. Wish the Careful planning this will reduce problems and unforseen expenes which all Wilsonville will bear.
This is the result of holding public open meetings to explain my above subjects.
I fully support the professional approaches and the efforts of the planning staff.
Not only is this important today but tomorrows future.

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Wednesday, December 12, 2012 2:47 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 408
Submitter's language : Default language
IP address : 170.160.32.1
Time to take the survey : 31 min. , 30 sec.
Submission recorded on : 12/12/2012 2:47:02 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Francis Halpin

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Regarding the NW Wilsonville Plan:

I would like to see the plan somehow address the dangerous situation which exists on Boones Ferry Road north of Day Road.

Without a change someone will sooner or later be killed on that stretch of road.

The bike lanes from the north and south, end abruptly and create a very dangerous situation for bike riders, pedestrains, and motorists alike. This transportation plan should include the construction of a bike lane on that section of roadway. If Wilsonville lacks authority to take that action then, alternatively, the plan should call for active engagement of the planners with whichever agency does have jurisdiction to take that action. A contiinuous bike lane through that area would close a dangerous gap in an otherwise safe bike route from Wilsonville all the way to Portland. It is only about a mile of roadway but as it stands, that mile turns an otherwise safe and pleasant ride into a nightmare any time of day but especially at night.

Please include this somewhere in the plan.

Fran Halpin

Subject: RE: TSP Open House Comments

From: webmaster@ci.wilsonville.or.us [mailto:webmaster@ci.wilsonville.or.us]
Sent: Wednesday, December 12, 2012 2:23 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 407
Submitter's language : Default language
IP address : 50.53.205.221
Time to take the survey : 4 min. , 45 sec.
Submission recorded on : 12/12/2012 2:23:09 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Thomas Ripple

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
There are two projects I didn't see listed that are both important.
The first one is sidewalks between the circle and boeckman Rd. on 110th St. I realize that the sidewalks will be added as the properties along 110th develop but we can't wait that long. Those sidewalks should be in by the time the Boeckman Bridge is repaired. Many people use that route to get to the other side of town and WES.
The second project I didn't see listed is the Bike/Pedestrian Bridge across the Willamette. It needs to be in our plan if we are to even try to realize the vision of a Bike/Ped bridge. I realize we can't afford it now but you never know where funding can come from if a project is planned. We shouldn't limit our vision.

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Friday, December 14, 2012 4:57 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 415
Submitter's language : Default language
IP address : 98.232.248.221
Time to take the survey : 5 min. , 2 sec.
Submission recorded on : 12/14/2012 4:56:33 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Lisa Krecklow

City: WILSONVILLE
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Thank you for allowing me to comment. I'd like to see the projects UU-04 and UU-07 have aesthetics like Villebois...sidewalks, landscaping and lighting. The area further south on Grahams Ferry has good sidewalks and landscaping, but the lighting doesn't seem to fit with the neighborhood.
Lisa Krecklow

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Thursday, December 13, 2012 9:37 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 409
Submitter's language : Default language
IP address : 76.115.184.168
Time to take the survey : 16 min. , 38 sec.
Submission recorded on : 12/13/2012 9:37:09 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Brian McCabe

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
Dear Chris,

I object to the use of the payroll tax to fund your city bus system. I run a 45 employee business on Commerce circle and none of our employees live in Wilsonville and none of them use the bus either. This must be common among most of the businesses in Wilsonville because nobody rides your buses. The buses are always empty!

I would not object to the taxation if we had representation, if we benefited or if anyone benefited in meaningful numbers. It's really time to rethink this failing wasteful system. Everyone is aware that the rail project to wilsonville is a failure also. Realizing that something is wrong and something is not working should cause you to re-evaluate and redirect the use of limited funds.

We rent the space we are in now and at some point hope to buy a building to support our growth. This tax and the ever present reminder of empty buses endlessly driving around Wilsonville wasting our money is major incentive to move elsewhere. I have discussed this with a number of other business owners and this is a common feeling.

Thank you for taking comments.
Brian

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Thursday, December 13, 2012 8:50 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 410
Submitter's language : Default language
IP address : 50.53.205.33
Time to take the survey : 25 min. , 9 sec.
Submission recorded on : 12/13/2012 8:49:47 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Simon Springall

City: Wilsonville
Zip Code: 97070-6811

Comments: (please specifiy the area/topic that you are commenting about)
RT-06 and the construction of the Willamette River Crossing

While it is appropriate to list RT-06 as priority project; the funding for this has already been obtained and city council has already given appropriate direction that the feasibility study should go ahead.

However, I remain concerned that the actual construction of the Willamette River Crossing is relegated to the list of lower priority projects. I'm sure the city's planning staff understand that this bridge serves more than Bikes & Pedestrians; the emergency vehicle access provides a critical safety feature for dealing with issues at the Boone Bridge, the busiest river crossing in the state. I want to be sure the City Council and other decision makers understand this as well. As previously discussed, the potential tourism benefits for Wilsonville in this bridge also cannot be discounted.

These two items alone indicate a number of potential funding avenues that should be explored; the feasibility study may not do this in depth. Without continuing to prioritize this river crossing, we will not ever build it since it will continue to be misunderstood and pushed to the back over fear of the cost; whereas in reality most of the cost should not be borne by the City of Wilsonville due to its regional and statewide impact.

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Thursday, December 13, 2012 9:06 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 411
Submitter's language : Default language
IP address : 50.53.205.33
Time to take the survey : 15 min. , 46 sec.
Submission recorded on : 12/13/2012 9:05:46 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Simon Springall

City: Wilsonville
Zip Code: 97070-6811

Comments: (please specifiy the area/topic that you are commenting about)
Re: Pedestrian crossings on Canyon Creek Rd North

This street is becoming increasingly busy especially in the morning and afternoon rush hour with Mentor Graphics and Xerox commuters. This will only increase with the build-outs of Frog Pond, Advance Road, Boeckman Road improvements and Coffee Creek. However there's no indication in the TSP of any planned pedestrian crossing on Canyon Creek Road North. Quite why this has not been identified as a 'gap' I don't know.

I believe we need these crossings sooner rather than later (quite inexpensive compared to these other developments mentioned). People cross the road to reach bus stops, walk to work, walk to Argyle square or even the town center, and to jog or walk their dogs. An additional small subdivision is currently being constructed here.

I would like to propose consideration of 2 marked pedestrian crossings, preferably with lights. One at Canyon Creek Apartments by the SMART bus stop, and one at Murray St / Printer Parkway. Eventually we should have one at Wiederman Rd / Canyon Creek Park too, when that road or trail opens.

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Friday, December 14, 2012 10:57 AM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 412
Submitter's language : Default language
IP address : 71.193.233.79
Time to take the survey : 59 min. , 41 sec.
Submission recorded on : 12/14/2012 10:56:53 AM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Tony Holt

City: Not answered
Zip Code: Not answered

Comments: (please specifiy the area/topic that you are commenting about)
BW-10 French Prairie Drive Pathway: The majority of Charbonneau residents are retirees. Many are determined to regularly exercise and walking is a major component of that regimen. On any day, in rain or shine, there is a constant stream of walkers around French Prairie, far more than seen in any other part of the City. As you know, the pathway around French Prairie stops abruptly at Country View Lane on the east side of Charbonneau and there is no continuing path to the east exit at Miley Road. This results is residents walking on the roadway, a very dangerous action, particularly in the dark winter months. Given the unusually high number of residents walking daily along the French Prairie path, the completion of the circuit should be given a high priority.

RT-06 Willamette River Bike/Pedestrian and Emergency Vehicle Bridge: After much work and community support, the City has been very fortunate to receive the majority of the funding for a feasibility study of this unique proposal. This was a real coup! However, not long after the announcement two councilors attempoted to scuttle the study, an eventuality that would probably jeopardize the City's chance of receiving future grants. However, it was subsequently agreed that the study should go ahead and include a review of where the bridge might be sited. Now I am told the same

councilors are making a second attempt to stop the study. I hope that this is not the case. It would be a big mistake to lose this opportunity to evaluate the project's feasibility--an opportunity to gather INFORMATION for possible future use, in many different ways, at a key transportation portal to the City. Let's not put our heads in the sand and turn down this significant opportunity.

Policies--Agency Coordination
#21 Aurora State Airport: The statement talks about what the City expects if the Airport expands. It says nothing about the City's policy towards current operations at the Airport, more specifically the constant overflights of the City, and in particular Charbonneau. Noise and toxic pollution is a current problem, with aircraft landing on runway 17 (to the south) overflying Charbonneau at no higher than 200 feet in some cases, day and night. This copncern should be recognized in this plan.

Recognition should also be given in the Plan to the fact that the City has been excluded from the 'Intergovernmental Agreement on the Coordination of Growth Management and Transportation Issues between the City of Aurora, Marion County, Clackamas County and the Oregon Department of Aviation, October 2007 (“Aurora Airport IGA”)' on the basis that Charbonneau and the rest of Wilsonville lie outside the impact area of the Airport. That is absurd and needs to be remedied.

Finally, while I congratulate City staff, and particularly Chris Neamtzu, on the excellent job they have done in assembling this material and presenting it in such an organized fashion, I believe that for online Open House purposes it needs to be either trimmed dramatically, if that is in fact possible, or in some way the the survey needs to be simplified. I believe the average citizen will be turned off by the sheer volume of data to be assimilated. The work is great but I think the survey needs to be more user friendly. I hope I am proved wrong and you have lots of responses! Thank you.

Comments: (please specify the area/topic that you are commenting about)
CORRECTION: In my submittal early today on Policies-Agency Coordination-#21 Aurora Airport, I mistakenly included Clackamas County as a signatory to the Aurora Airport IGA. The Aurora Airport IGA is between ODA, Marion County and the City of Aurora. My apologies.

Subject: RE: TSP Open House Comments

From: webmaster
Sent: Friday, December 14, 2012 12:40 PM
To: Neamtzu, Chris
Subject: TSP Open House Comments

Submission information

Submitter DB ID : 414
Submitter's language : Default language
IP address : 67.168.249.74
Time to take the survey : 40 min. , 39 sec.
Submission recorded on : 12/14/2012 12:39:53 PM

Survey answers

Thank you for taking the time to submit comments regarding the Transportation Systems Plan. You may choose to list all of your comments together. However, if you want to submit comments on one topic before looking at another topic, you are welcome to submit the comment form more than once.

Click here to return to the Online TSP Open House

Please provide either a phone number, email, or mailing address so that we may contact you with questions or information about the public hearings on the TSP.
Name (required): Kathryn Whittaker

City: Wilsonville
Zip Code: 97070

Comments: (please specifiy the area/topic that you are commenting about)
These comments concern RE-01 and RE-02 & UU-04 and UU-07.

With respect to RE-01 and RE-02, the Barber Street extension should be considered a high priority because it will finally provide much needed access from Villebois to the WES transit system and eliminate traffic that must now route itself to Wilsonville Road to cross town. This extension should be a priority since Villebois has been cut off from one of its cross town accesses with the closure of the land bridge for repair. The Barber Street extension should be prioritized to be built promptly to provide that area with an additional access point (both to the Wes Station and to I-5 via Barber Road). Please include the pedestrian and bike accesses on this route as this would be a wonderful extension for the biking community.

With respect to UU-04 and UU-07, no mention was made in the transportation plan about the type of street lighting for those improvements. Since both roads are classified as "Minor Arterials" (not Major Arterials nor Major/Minor Collectors), they should not be lit with 35 foot Cobra street lights like those which were recently installed farther south on Grahams Ferry Road. The 35 foot tall Cobra street lights are not compatible with the residential and rural residential setting on those streets, nor are they effective for lighting the bike lanes or pedestrian walkways that are planned for

that area. The 35 foot tall Cobra lights are also not necessary for the 2 roundabouts planned in UU-04 and UU-07 as the other roundabouts in this section of the city are lit with lights that are half that height. Further, there are already shorter lights that are installed east of the proposed UU-07 improvement on Tooze Road (west of the land bridge) which are more compatible with the rural setting in that area. If the UU-04 and UU-07 improvements are built with 35 foot tall Cobra lights, the City of Wilsonville will look like it has put up a lighting barrier around this particular perimeter of the city which is not commensurate with the character of Wilsonville. It will look like a blight on the face of Wilsonville and will be contrary to the sentiment behind the Dark Sky Ordinance Wilsonville adopted and at odds with the liveability of a city which prides itself on marrying rural and residential living. We ask that this project be lit with some attention to aesthetics and atmosphere and that the height of the street lights on those streets be part of a thoughtful review. This would include rethinking the street lights recently installed on about 200 yards of Grahams Ferry Rd. This UU-04 and UU-07 area could be a functional and beautiful asset to the city, but if the street lighting planned is to be the 35 foot tall Cobra lighting like what was recently installed just south of those areas, it will not be.

Please note that most residents are unaware of the potential street lighting issue with the UU-04 and UU-07 projects because it was NOT MENTIONED in your TSP. This lighting issue effects so many neighbors in that area that it should be addressed more specifically than in this large TSP.

Thank you in advance for your thoughtful consideration of these issues.

Q1 Do you currently live in Wilsonville, or do you plan to in the near future?

Answered: 22 Skipped: 0

Answer Choices	Responses	
Yes	**90.91%**	20
No	**9.09%**	2
Other (please specify) **(** 0 **)**		
Total		22

Q2 Do you currently work in Wilsonville?

Answered: 22 Skipped: 0

Answer Choices	Responses	
Yes	**45.45%**	10
No	**54.55%**	12
Other (please specify) **(** 1 **)**		
Total		22

#	Other (please specify)	Date
1	Own Class A office building	12/4/2012 4:39 PM

Q3 In your opinion, which are the 3 most important transportation improvements that should be made in Wilsonville in the next 5 years?

Answered: 19 Skipped: 3

#	Responses	Date
1	UU05	12/14/2012 7:08 PM
2	sidewalks on 110th between the circle and Tooze/Boeckman, Brown Rd. Upgrades UU-03, RW-01 Boeckman improvements -all these are necesary to make it safer for people to get from Villebois to the East side of town safely. I didn't see sidewalks on 110th listed anywhere. That should be added as many people go that way when the Boeckman bridge is open.	12/12/2012 2:11 PM
3	French Prairie Bridge Study Boekman Rd. Bridge Widening Tonquin Trail Extension	12/10/2012 2:05 PM
4	Uu05 RW01 RE08	12/10/2012 7:32 AM
5	Congestion improvement, sidewalks on 110th, Day Road road condition improvement	12/7/2012 11:03 AM
6	RW-01 SR-01 through SR-04	12/6/2012 6:37 AM
7	SI-04, RW-01, RE-08	12/4/2012 4:39 PM
8	RE-01, 02, 04	12/4/2012 2:48 PM
9	GRAHAMS FERRY ROAD TO DAY RD. OVERPASS BETWEEN NORTH AND SOUNTH WILSONVILLE DEVELOPEMENT OF AREA AROUND PRISON.	12/4/2012 2:10 PM
10	more bicycle paths and access to both sides of I-5	12/4/2012 12:28 PM
11	Kinsman - Barber to Boeckman Barber - WES to Villebois Canyon Creek connection to Town Center Loop	12/3/2012 11:43 PM
12	widen boeckman road, Extended Barber to Villebolis, Stafford rd 65th area	12/3/2012 4:02 PM
13	65th and Stafford Roundabout. Extend Canyon Creek. Walking/biking trails in NE Wilsonville	12/3/2012 3:00 PM
14	#1 Pedestrian bridge over Willamette River, #2 Intersection of Elligsen/65th/Stafford Rd (I don't think a round-a-bout is the right solution - a slight re-routing so all roads can connect with a stop light would be much safer and more effective), #3 Congestion in area of I-5/Boones Ferry/Day Rd/Ridder Rd	12/3/2012 2:44 PM
15	Link existing dead ended streets. Put sidewalks in on existing streets.	12/3/2012 1:55 PM
16	1. Progress on design, planning and seeking funding for the French Prairie Bridge 2. Improved east-west connectivity via Beockman Road widening and bike lanes 3. Improved east-west connectivity via Barber Road extension (WES - Villebois)	12/3/2012 1:47 PM
17	neighborhood connectivity, later Wilsonville Rd. SMART bus for evening after school activities (as late 8:30PM), bike/ped bridge,	12/3/2012 1:00 PM
18	Barber Street Extension. Parkway Avenue Upgrade Stafford Road / 65th Avenue improvements	12/3/2012 11:35 AM
19	expanded bicycle and sidewalk connections, north south connections, east west connections	12/3/2012 8:55 AM

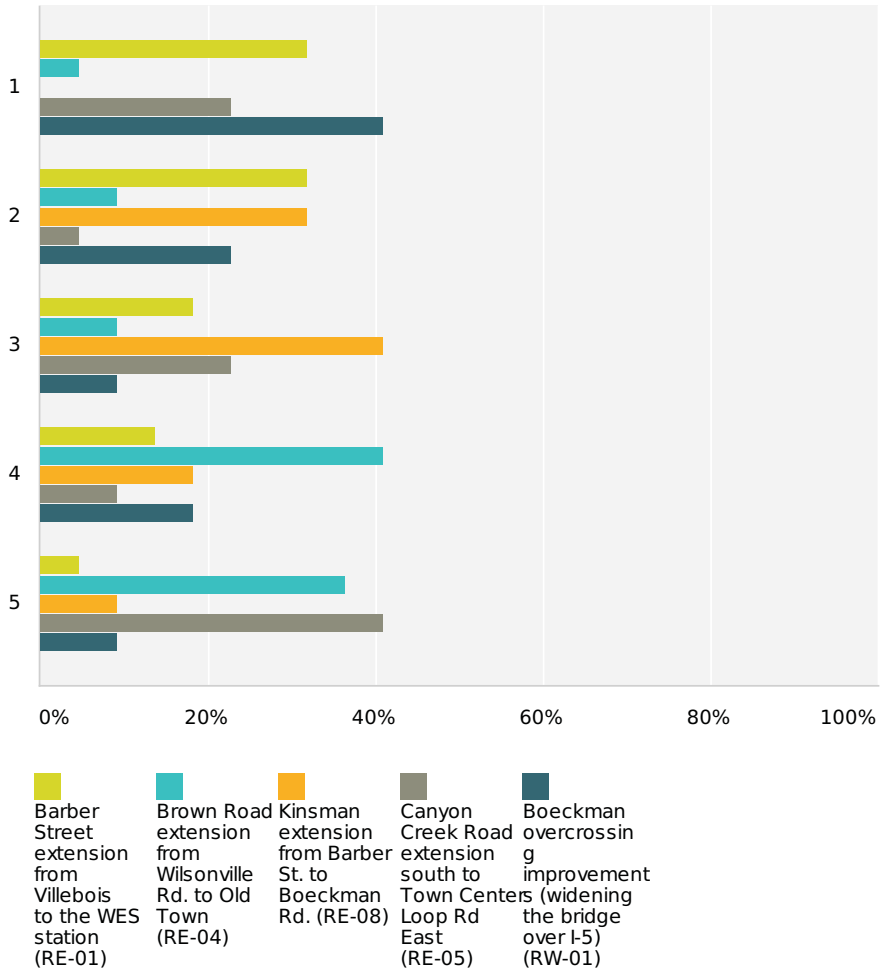
Q4 In 2025, the current kindergarten class at Lowrie Elementary will graduate from high school. Assuming the projects you listed in question #3 get built within the next 5 years, what are your top 3 improvements that should be made to Wilsonville's transportation system by 2025?

Answered: 17 Skipped: 5

#	Responses	Date
1	Bike/Ped bridge across the Willamette-I didn't see this listed-why not???? Barber extension or at least a pathway for bikes and peds to get to WES, BW-04 Boeckman sidewalk-I don't think it is necessary to fix the Boeckman dip. The Advance Rd. dip is dangerous but the Boeckman one is not particularly dangerous and we should not waste the money to fix it.	12/12/2012 2:11 PM
2	Design and Construct the French Prairie Bridge Complete Tonquin Trail to Sherwood & Tualatin Pedestrian Bridge over I-5 at Barber St.	12/10/2012 2:05 PM
3	Re03 Re 04 BW01	12/10/2012 7:32 AM
4	Wider roads, better flow through town, more turn lanes to get on I-5 on the north side of town	12/7/2012 11:03 AM
5	BW04 UU-01 UU-02	12/6/2012 6:37 AM
6	RE1, RE2, RE3	12/4/2012 4:39 PM
7	RT-6	12/4/2012 2:48 PM
8	NEW HIGH SCHOOL ON THE WEST SIDE. NEW JR. HIGH SCHOOL ON THE WEST SIDE A LARGE AREA FOR JOB CREATION WEST SIDE.	12/4/2012 2:10 PM
9	encourage more walking and biking. NO MORE TRAINS	12/4/2012 12:28 PM
10	I-5 pedestrian bridge connecting west side to Town Center Kinsman - Ridder to Day Road Bowckman - Canyon Creek to Wilsonville Rd	12/3/2012 11:43 PM
11	I would love to see a right turn lane from Wilsonville Rd into Boeckman Primary like the High School.. This would speed up traffic considerably!!	12/3/2012 5:16 PM
12	Barbur st extension	12/3/2012 3:00 PM
13	#1 Connecting Canyon Creek Rd to Town Center Loop, #2 Making Villebois more connected to the rest of town - maybe it's just because it's new, but once I get in, I find it difficult to get out of there. I end up driving around and around in circles before I finally find an "exit" back to town.	12/3/2012 2:44 PM
14	Make sure that there is easy I-5 on/off.	12/3/2012 1:55 PM
15	1. French Prairie Bridge - bike/ped/emergency only 2. Multiple bike-ped crossings over I5. 3. Complete Tonquin Trail and connections to Willamette Valley Scenic Bikeway	12/3/2012 1:47 PM
16	bike/ped bridge, Barber extension, trail improvements between old town and memorial park	12/3/2012 1:00 PM
17	Boeckman Rd Bridge improvements Grahams Ferry Rd upgrade Brown Road upgrade	12/3/2012 11:35 AM

Q5 The draft Higher Priority project list includes new multimodal roadway extensions to connect existing neighborhoods and serve new development. Please rank these roadway connection projects in your preferred order of completion:

Answered: 22 Skipped: 0



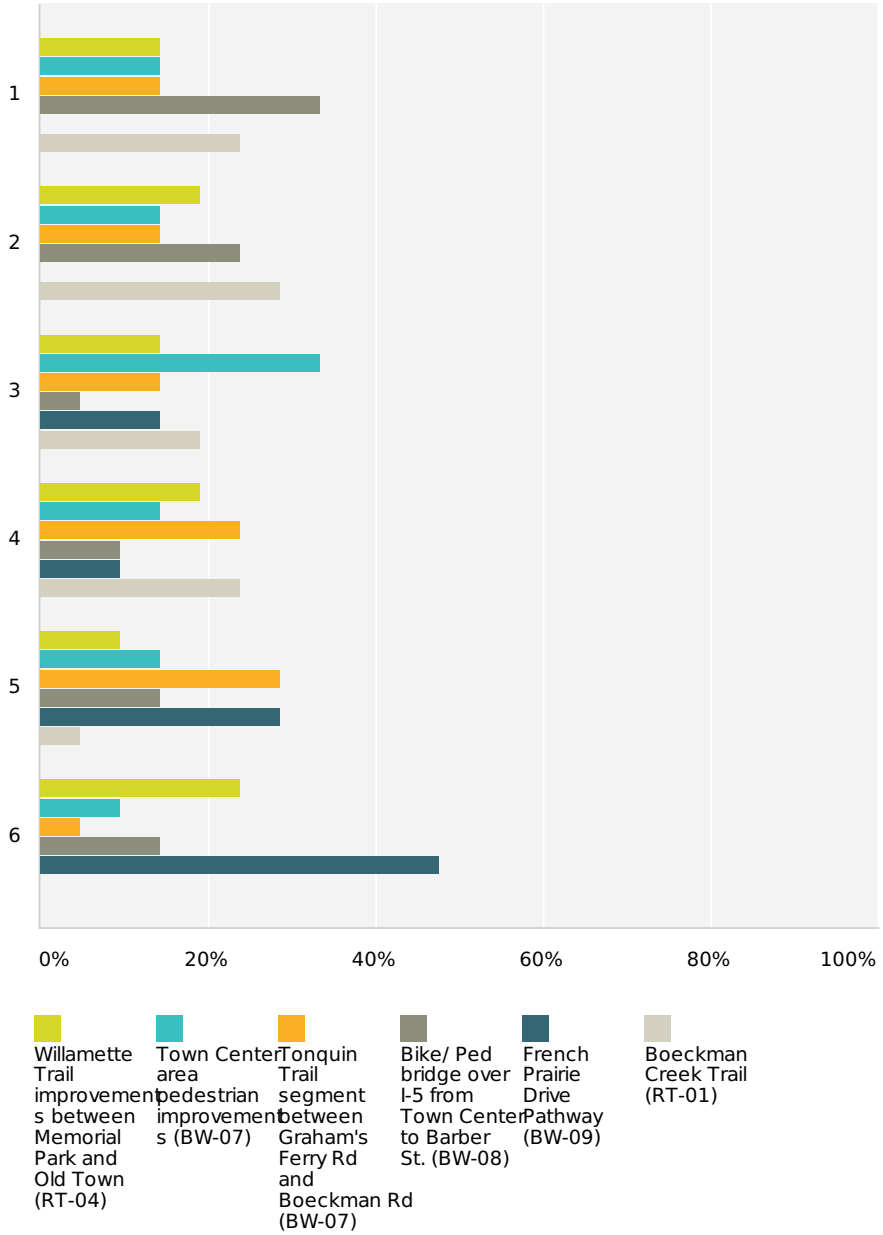
	Barber Street extension from Villebois to the WES station (RE-01)	Brown Road extension from Wilsonville Rd. to Old Town (RE-04)	Kinsman extension from Barber St. to Boeckman Rd. (RE-08)	Canyon Creek Road extension south to Town Center Loop Rd East (RE-05)	Boeckman overcrossing improvements (widening the bridge over I-5) (RW-01)	Total	Average Ranking
1	**31.82%** 7	**4.55%** 1	**0%** 0	**22.73%** 5	**40.91%** 9	22	5.00
2	**31.82%** 7	**9.09%** 2	**31.82%** 7	**4.55%** 1	**22.73%** 5	22	4.00
3	**18.18%** 4	**9.09%** 2	**40.91%** 9	**22.73%** 5	**9.09%** 2	22	3.00
4	**13.64%** 3	**40.91%** 9	**18.18%** 4	**9.09%** 2	**18.18%** 4	22	2.00
5	**4.55%**	**36.36%**	**9.09%**	**40.91%**	**9.09%**		

TSP open house

	1	8	2	9	2	22	1.00

Q6 The draft Higher Priority project list includes many "standalone" improvements to the walking and bicycling system. Please rank the following neighborhood-oriented projects in your preferred order of completion:

Answered: 21 Skipped: 1

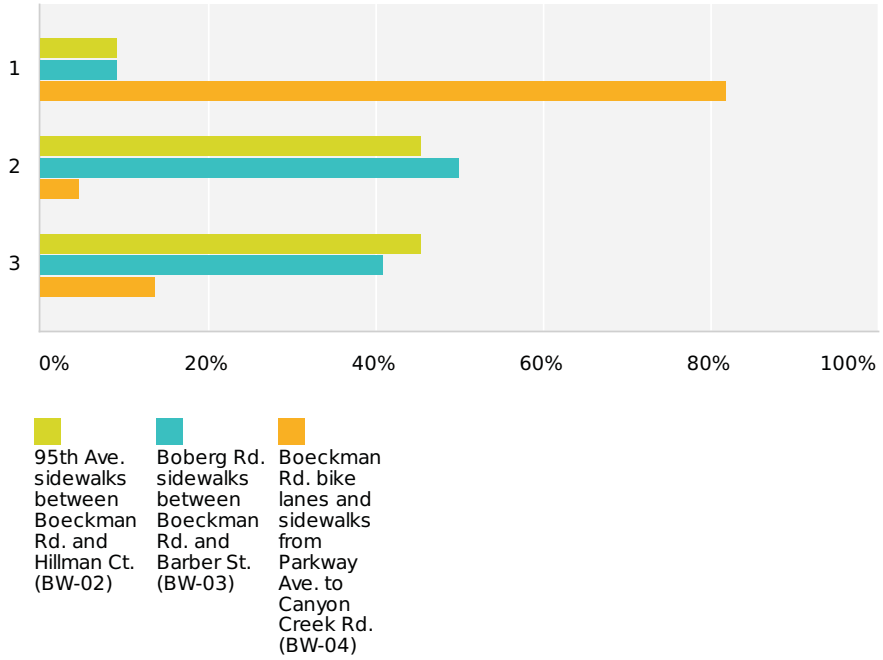


	Willamette Trail improvements between Memorial Park and Old Town (RT-04)	Town Center area pedestrian improvements (BW-07)	Tonquin Trail segment between Graham's Ferry Rd and Boeckman Rd (BW-07)	Bike/ Ped bridge over I-5 from Town Center to Barber St. (BW-08)	French Prairie Drive Pathway (BW-09)	Boeckman Creek Trail (RT-01)	Total	Average Ranking
1	14.29%	14.29%	19.05%	23.81%	4.76%	23.81%		

	3	3	3	7	0	5	21	6.00
2	**19.05%** 4	**14.29%** 3	**14.29%** 3	**23.81%** 5	**0%** 0	**28.57%** 6	21	5.00
3	**14.29%** 3	**33.33%** 7	**14.29%** 3	**4.76%** 1	**14.29%** 3	**19.05%** 4	21	4.00
4	**19.05%** 4	**14.29%** 3	**23.81%** 5	**9.52%** 2	**9.52%** 2	**23.81%** 5	21	3.00
5	**9.52%** 2	**14.29%** 3	**28.57%** 6	**14.29%** 3	**28.57%** 6	**4.76%** 1	21	2.00
6	**23.81%** 5	**9.52%** 2	**4.76%** 1	**14.29%** 3	**47.62%** 10	**0%** 0	21	1.00

Q7 The draft Higher Priority project list includes many "standalone" improvements to the walking and bicycling system. Please rank the following employment area-oriented projects in your preferred order of completion:

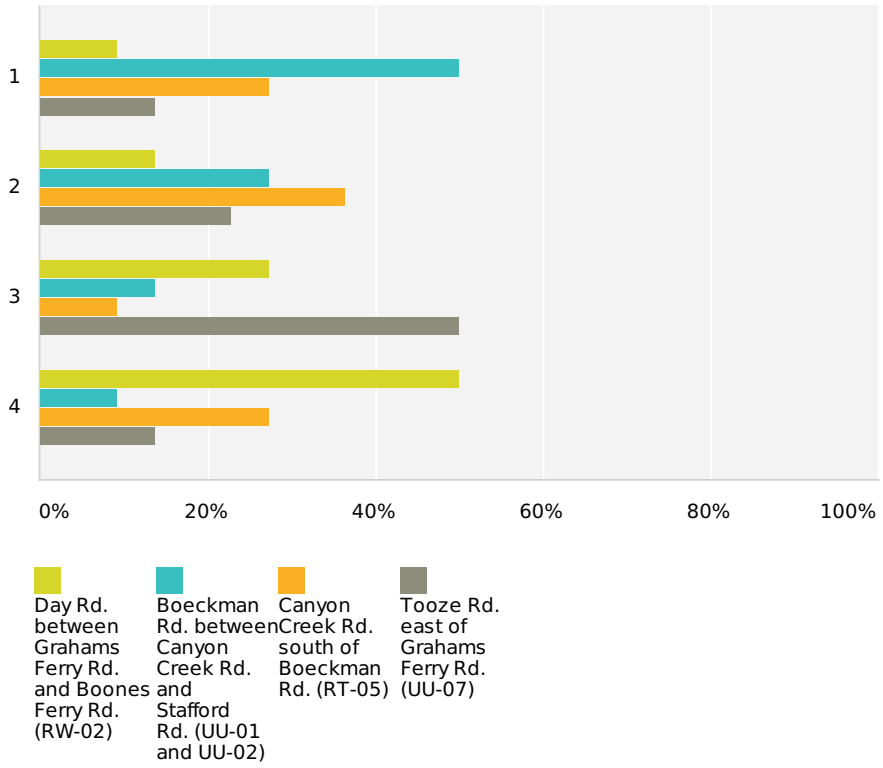
Answered: 22 Skipped: 0



	95th Ave. sidewalks between Boeckman Rd. and Hillman Ct. (BW-02)	Boberg Rd. sidewalks between Boeckman Rd. and Barber St. (BW-03)	Boeckman Rd. bike lanes and sidewalks from Parkway Ave. to Canyon Creek Rd. (BW-04)	Total	Average Ranking
1	**9.09%** 2	**9.09%** 2	**81.82%** 18	22	3.00
2	**45.45%** 10	**50%** 11	**4.55%** 1	22	2.00
3	**45.45%** 10	**40.91%** 9	**13.64%** 3	22	1.00

Q8 The draft Higher Priority project list includes many projects to complete existing streets to better serve all modes of transportation (add travel lanes, bike lanes, sidewalks). Please rank the following projects in your preferred order of completion:

Answered: 22 Skipped: 0



	Day Rd. between Grahams Ferry Rd. and Boones Ferry Rd. (RW-02)	Boeckman Rd. between Canyon Creek Rd. and Stafford Rd. (UU-01 and UU-02)	Canyon Creek Rd. south of Boeckman Rd. (RT-05)	Tooze Rd. east of Grahams Ferry Rd. (UU-07)	Total	Average Ranking
1	**9.09%** 2	**50%** 11	**27.27%** 6	**13.64%** 3	22	4.00
2	**13.64%** 3	**27.27%** 6	**36.36%** 8	**22.73%** 5	22	3.00
3	**27.27%** 6	**13.64%** 3	**9.09%** 2	**50%** 11	22	2.00
4	**50%** 11	**9.09%** 2	**27.27%** 6	**13.64%** 3	22	1.00

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting
June 22, 2011
1:30 p.m.

Those present:

City of Wilsonville:
- Michael Bowers
- Eric Mende
- Jeff Owen
- Stephan Lashbrook
- Dan Pauly
- Linda Straessle

DKS Associates:
- Carl Springer
- Scott Mansur

Gail Curtis, ODOT
Steve L. Kelley, Washington County
Larry Conrad, Clackamas County
Aquilla Hurd-Ravich, City of Tualatin
Julia Hajduk, City of Sherwood
Frank Lonergan, Allied Waste & Chamber of Commerce
Darci Rudzinski, Angelo Planning Group

Those around the table introduced themselves. Scott presented the schedule for the Wilsonville TSP update and briefly explained each task. The schedule is posted on the Basecamp website.

Those at the table explained what they expected to contribute to the Wilsonville TSP update. A common response was to facilitate the coordination of Wilsonville's TSP with Wilsonville's surrounding jurisdictions. Other interests included:

- Freight movement – Michael talked about the importance of freight movement to Wilsonville. Larry discussed Clackamas County's intention to do a freight movement plan.
- Basalt Creek. Making sure that the three cities, Washington County, and others work together in planning and developing the industrial area between Sherwood, Tualatin and Wilsonville.
- Making sure the TSP is consistent with other Wilsonville, Metro, state, and federal documents and policies.
- Population forecasting for the area and how to incorporate this into the TSP. Larry said that Metro will be assuming some amount of growth in urban reserve areas.
- Steve and Larry indicated that both Counties will be using Dynamic Traffic Assignment modeling tools in the TSP updates

Scott reviewed the DKS Associates Memorandum dated June 16, 2011 regarding Task 2.2: Draft Memorandum – Goals Policies and Evaluation Criteria City of Wilsonville Transportation Systems Plan Update. Additional comments included:

- Whether the listed goals and policies from the Wilsonville documents should be summarized with a shorter list for presentation to the public; this list may be too long and confusing to the public.
  - Do a layman's approach with a one to two page summary of what we are trying to achieve with the goals and policies and include the larger list as an appendix to the summary.
  - Expand upon it once public input has been received.
  - It was also suggested that simplifying the goals and policies early, then expanding it out later, can be alarming to the public.

- Wilsonville's Planning Commission is Wilsonville's citizen involvement committee and the TSP update is expected to go before the Commission six times. It was suggested that City staff consider running the goals and objectives by the Commission prior to the scheduled October 2011 meeting to get their feedback earlier in the process.
- It is helpful to have all the goals and policies from various city documents pulled together. Many of them are still an expression of the community's policy framework – others will have to be updated based on the community's focus since the adoption of the current TSP.
- The goals and policies will have to be updated to incorporate the RTP's goals and policies; make sure that the RTP is reflected in the goals.
- The goals and policies are currently spread throughout the TSP and should be incorporated into a single place in the TSP, up front.
- There needs to be a policy to keep freight travel away from residential areas – a designated freight route may need to be created.
- This is an update of the TSP; it is not a wholesale revision of it.
- The Table 1 title needs to be amended to indicate that is evaluating "projects".

The DKS Associates Memorandum dated July 16, 2011, regarding Task 2.1: Policy Framework Memorandum City of Wilsonville Transportation Systems Plan Update was discussed:

- The group was asked to check the list of documents that were reviewed for compliance and consistency to make sure that a document was not missed. It is important that the TSP acknowledges plans from the regulatory environment and that there is a coordination function of this TSP process.
- What this memo does not state about the Aurora Airport Expansion is that while the airport is outside of Wilsonville, there is an economic development component in that it provides a service to Wilsonville businesses.
- There was a discussion regarding the urban reserves.
    - A sensitivity analysis can be done if necessary to determine how the urban reserves will likely affect the TSP during the next 20 years.
    - Regional forecasting will determine when urban reserves will come in. All jurisdictions in the Metro area have been asked about when they think their urban reserves will come in. The results of this study will be revealed to area planning directors in July.
- A discussion about traffic level of service included:
    - Various jurisdictions have moved away from using a level of service measurement for traffic.
    - Does Wilsonville want to keep its LOS "D" or move away from it to something less? If that policy can't be achieved due to UGB development and other development, then what?
    - DKS Associates was asked if they would move to a multi-modal approach if the LOS "D" standard is too high. Carl answered "no, it is not currently in the scope of work".
    - The counties have moved away from their LOS "D" policies.
    - The LOS "D" policy may prove too expensive to achieve.
    - Wilsonville has been very stringent about its LOS policies. It was suggested that a project list be compiled with dollar amounts listed; then prioritize it based on available funding. This will be part of a later, but very important, policy discussion.
    - Make sure the community understands that LOS "D" may not be attainable. The burden is on DKS Associates to do education about this.
    - The types of modeling were described but the land use forecasting still needs to be done.
    - Road performance needs to be determined and a list of projects compiled that will meet the decided-upon performance policies.

- Understanding intersection needs is when the level of service policies will come into focus.
- The question is whether a road system should be designed for the peak hour – is this what we really want to do?

Carl demonstrated the Basecamp website up on the screen. He identified and explained its features and how to post information on it.

DKS Associates asked for comments on the presented information within a couple of weeks. The comments can be posted to Basecamp or sent to DKS.

The next meeting is scheduled for September 7, 2011, 1:30 p.m. Steve Kelley and Larry Conrad stated that they would not be able to make that meeting.

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting
September 7, 2011
1:00 p.m.

Notes

Those present:

City of Wilsonville:
- Chris Neamtzu
- Mike Stone
- Eric Mende
- Jeff Owen
- Stephan Lashbrook
- Dan Pauly
- Linda Straessle

DKS Associates:
- Scott Mansur
- Brad Coy

Gail Curtis, ODOT
Clark Berry, Washington County
Aquilla Hurd-Ravich, City of Tualatin
Frank Lonergan, Allied Waste & Wilsonville Chamber of Commerce

Those around the table introduced themselves.

A PowerPoint presentation was used to facilitate the discussions throughout the meeting.

Project Schedule Status:
- DKS Associates has received the Metro 2010 model.
- The City has seen the new TAZ structure.
- Land use is now being looked at and modeling work is being done.
- DKS Associates has not received Metro's 2035 model but expects it in September. It is needed to finish up the future forecasting work.
- Scott asked for TAC comments on the Inventory Technical Memo by September 16. He wants to make sure that the TAC is supportive of the current inventory as a good baseline is needed for determining the needs, gaps, and deficiencies.
- All Technical Memos will be finalized by the middle to the end of October.
- Next step is Technical Memo #6 for needs, gaps and deficiencies.
- Next TAC meeting is scheduled for October 19. This is a tentative date.

Technical Memorandum dated September 1, 2011 regarding Wilsonville Transportation System Plan Update – Transportation System Inventory (Task 3.1):

Jurisdiction. (See page 1 of memo and Figure 2: *Existing Jurisdiction* on page 3.)
- Actual ownership of roads needs to be verified; who has the jurisdiction. There are also instances where a county has jurisdiction but the City maintains it.

- Scott asked if there are special agreements that specify that an intersection owned by the county, but maintained by the city, or that the county maintains city signals. TAC members added:
  - ODOT has jurisdiction of Elligsen Road from Parkway Avenue to Day Road. This needs to be corrected on the map. Stephan and Clark noted that the jurisdiction of Boones Ferry Road is expected to imminently change. Clark is to check on the status of this jurisdictional change.
  - It was suggested that special conditions could be noted on the map.
  - Clutter Road, west of Garden Acres Road, is in Washington County.
  - Miley Road is in Clackamas County and Wilsonville does not have any jurisdiction over it; Figure 2 shows it as under city jurisdiction. It also appears that the UGB boundary is on the north side of Miley Road. DKS Associates is to double-check Miley Road issues. Miley Road needs to be labeled.
  - There is room for more street names.
  - Mike Stone confirmed that the City has jurisdiction of Wilsonville Road under I-5.

After discussions throughout the meeting, there was agreement to not include the future system on the existing inventory maps.

Functional Classification. (Page 5 of memo and Figure 3: *Functional Classification* on page 4)

- Scott asked that the counties and Wilsonville verify that the street classifications are up-to-date and to let him know if any modifications are need on Figure 3.
  - There was a desire to try to name all collectors and arterials.
  - Tonquin Road does not show a classification.
  - Scott asked Clark to verify the classification of the roads in Washington County. Clark explained that Washington County does not distinguish between major and minor arterials. Minor collectors are considered neighborhood routes.
  - The orange line classifying the little piece of Ridder Road, just west of Clutter Road, as a Minor Arterial should probably be removed.
  - Parkway Avenue up by the Mercedes dealership needs to be corrected to collector. DKS to confirm with Adopted TSP.
  - The only difference between the City's classification of minor and major arterials are the right-of-way widths. The road section is the same. It was requested that the street cross-sections be mapped out.

There was a discussion as to whether to show the existing inventory maps to the Planning Commission and City Council. Chris stated that he would share the information with the Planning Commission once it is finalized as he believed they needed time to absorb all the information so that they are not overwhelmed as they might be if it came to them all at once.

Agency Standards. (Figure 4: *Existing Traffic Control* on page 6 and Table 1: *Applicable Intersection Mobility Standards* on page 7 of memo.)

- The different standards that each agency uses for level of service were reviewed.

- OR 141 (Boones Ferry Road) is to be moved to Washington County's jurisdiction (if confirmed by Clark).
- There is to be a DLCD teleconference next Monday in regards to the Oregon Highway Plan amendments. The changes are to be finished by the end of the year. Gail stated that finishing the amendments is a directive from the legislation.
    - Stephan is to provide Scott with information needed to join the teleconference on Monday, and will forward any materials sent to him to Scott. Gail stated that she has good access to the information too.
- Stephan asked Linda to post four documents that were released at the last TPR meeting on Basecamp.
- It would be helpful to show who has jurisdiction of the traffic signals on Figure 4 because this is a subject that is discussed all the time.
- Gail explained that the TPR amendment will have a provision that allows a higher tolerance of determining a significant effect. It would allow the operations to go within 0.03 of the mobility standard.
    - She suggested it may be something that you want here.
    - Stephan stated that at an Oregon Highway Plan meeting a couple of months ago included a conversation that local communities could map an area that would be subject to those reduced standards. There was consensus at the meeting that it was a good idea but there was no agreement about the details
    - This could be footnoted or cited in some way.
- A lengthy discussion regarding the TPR Amendments that are to come out in December included:
    - Trip reductions for centers; there has been discussion about making centers exempt from the significant impact analysis.
    - There may be some language changes in the TPR that direct more differences in the centers; expand the definition of what might be mapped as a center.
    - The changes could make a huge difference to developers.
    - There might be impacts on the freight community.
    - A map that shows the centers may be needed. This issue can be readdressed once there is more knowledge about the December TPR changes.
- The legend for Figure 4 could include an asterisk that says that this does not include speed bumps and other traffic calming things. It was noted that the City does not have any speed bumps on public streets.
- The dots on Figure 1 and Figure 4 are from earlier versions of the maps and represent points of interest. The dots may not be needed on the maps.
- In reference to Footnote #4 on page 7, the 2010 Highway Capacity Manual just came out but it has not been adopted yet. Scott did not think that there were any changes in the 2010 version, when compared to the 2000 version, which would affect this planning process. Many of the changes in the 2010 version involve pedestrian and bicycle facilities; multi-mode facilities.

- Add the signals that flash yellow arrows on Figure 4. Adding this information would be helpful to the gaps/needs analysis in terms of safety, solutions, and perhaps for funding purposes.
- The difference between doghouse signals and flashing yellow light signals were discussed in terms of funding, safety, and capacity. Traffic signal phasing and reconstruction will be included in the list of projects once the needs analysis is done. Some of the traffic signal controllers will need to be updated as they are so old.

A GIS map is to be added that includes physical constraints that need to be considered when making decisions about routes. The map also is to include topography and names of the creeks.

Pedestrian Facilities. (Page 11 of memo and Figure 8: *Existing Pedestrian Facilities* on page 14.)

- The schools need to be labeled.
- Whether to show future pedestrian facilities on this map was discussed.
- DKS Associates will be compiling one final map once the needs analysis is done.
- Mike explained that the rights-of-way are different for major and minor arterials because downtown areas of the city require wider sidewalks. He prefers that this be designated on the maps rather than just text explaining the issue.
- While there was support for having a single category rather than being separated out into minor and major, Mike needs to have something in the Plan he can refer to when he is writing conditions of approval for a project that requires the wider sidewalks in specific locations.
- Brad stated that DKS Associates would put the existing classifications on a map and then work through all these issues as the future Plan is being developed, and address those later. He is taking notes of all the comments.
- There was some agreement that the final Figure 8 be broken into quadrants when the gaps analysis is done to make it easier to read. Chris stated a preference to having consistent page sizes rather than printing maps on larger fold-out pages.
- Pedestrian paths are differentiated from multi-use paths based on width.
- Jeff stated that he would have additional information on Safe Routes.

Bicycle Facilities. (Figure 7: *Existing Bike Facilities*)

- The schools need to be labeled
- Chris noted that the Bicycle and Pedestrian Master Plan has future facilities maps as well as a gap analysis. This comment also applies to the Pedestrian Facilities. Scott explained that while the future facilities are not included here, they will all be in the final Plan.
- It was suggested that Figure 7 is not the right context to include the traffic levels on the streets; that this should just show the bike structures, the lanes and paths.
- Public bike parking facilities should be shown on Figure 7. The bike lockers at the WES station should be called out.
- Jeff will provide bike counts to add to the vehicle counts. Scott stated that they have bike counts, but they just haven't been put into the figure, but will be added. Chris noted that

Graham Oaks Nature Park has bike and pedestrian counters at the trail intersections and Metro is collecting data on regional park users.

Transit Facilities. (Table 3: *Existing SMART Transit Routes, Frequency, and Ridership Data* on page 11 and Figure 6: *Smart Transit Routes* on page 12.)

- Jeff said that SMART will update the routes and the ridership numbers will be added to the routes.
- Depending on the data to be provided by SMART, DKS Associates will be revising Table 3.

Motor Vehicle Operations. (Page 15 of memo. Figure for this topic is not included in the memo.)

- There are five areas that were either not meeting or coming close to not meeting standards. The only intersection that did not meet operating standards was the intersection of Stafford Road and 65th Avenue. A PowerPoint slide showed Figure 2 with circles on it to identify intersections that did not meet standards or were approaching failure.
- Chris noted that the county lines disappear on the maps. Jeff thought that they were buried under the other data.
- Management of pavement conditions is done through the City's road maintenance program and has not been included in Transportation Plans. Because of changing costs, trying to include pavement maintenance in the Plan would be difficult. Mike, Eric and Chris are to discuss this issue and let DKS Associates know if/how the City would like to have pavement conditions included in the Plan.

Safety Conditions. (Page 10 of the memo and Table 2: *Collision Rates Compared with Statewide Averages* on page 10)

- There are no intersections within the city that are not meeting typical engineering standards for safety.
- There have been no fatalities from car accidents in the City of Wilsonville over the last five years.
- The Wilsonville numbers exclude I-5 fatalities.

Freight Routes. (page 15 of memo and Figure 9: Existing Freight System on page 16).

- DKS Associates has been told that the Kinsman Extension was to be designated as a freight route.
- Mike stated that Day Road needs to be designated as a freight route.
- The city does not officially designate roads as freight routes, the roads are simply those roads that are used as such.
- Clackamas and Washington Counties and Metro freight routes need to be called out separately on the map.
- Grahams Ferry Road, south of Tooze Road, is marked as a freight route on Figure 9. This road is not conducive for trucks and needs to be removed as a freight route.
- 95th Avenue needs to be marked as a freight route.
- Mike asked to see the Metro and counties freight maps.

- This map does not represent the comprehensively planned vacant industrial properties and does not identify the future Frog Pond industrial area. It was recommended that it is better to rely on Wilsonville's Comprehensive Plan designations than the zoning designations. This will pick up a lot of land south of Wilsonville Road and the UGB areas including the Coffee Creek and Basalt Creek areas. It was suggested the best way to handle those areas is just with a note.
- It was suggested that intermodal freight methods, such as rail and water, should be included on the map.

Forecasting Methodology

- DKS Associates has received Metro's 2010 base model and be getting the 2035 future forecasts later this month.
- DKS Associates will be submitting the land use by TAZ to the City for review next week. This information is confidential and will not be posted on Basecamp.

Electrical Charging/Natural Gas Fueling Criteria

- The three different types of charging stations were identified and explained.
- Compressed Natural Gas (CNG) stations should be included in the Plan. Jeff is to provide this information, as well as the locations of the public EV stations in Wilsonville.
- Metro's RTP did not have any criteria related to electrical vehicles.
- Change "require" to "encourage" in the bulleted list in the "Wilsonville TSP Transportation Electrification" PowerPoint slide listing suggested code modifications. It was noted that this was just for new construction and only to provide the capability – not the actual charging equipment.
- A map is to be included in the Plan that shows public charging stations in Wilsonville.
- There is a future task in the grant stating that the consultant shall develop a draft set of infrastructure needs and assumptions for a citywide electric vehicle charging system and CNG vehicle charging and filling system.
- Gail agreed to check with ODOT about opportunities for the funding of Level 3 EV Stations along I-5. She will talk with the ODOT project manager and will report her findings.
- The last bullet in the "Wilsonville TSP Transportation Electrification" slide regarding West Coast Green Highway coordination is to become the first bullet if this list is to be prioritized for ODOT or federal funding purposes.

Next Steps

- Comments regarding the Inventory Technical Memo are due to DKS Associates by Friday, September 16, 2011.
- The tentative date for the next TAC meeting is October 19, pending that DKS Associates gets the Metro 2035 model within the week.
- Technical Memos #4 and #5 are to be finalized by the middle of October.

- DKS Associates and the City are working on finalizing the funding memo.
- Tech Memo #2 for existing funding analysis is available on Basecamp.
- The city will be launching a TSP update web site
- Clark will send out information regarding Boones Ferry Road.
- The Tonquin Trail will be included in the needs/gaps maps. What has been built to date is shown on the current map; the planned routes will be on the next maps.
- Jeff asked the maps that have pieces of Tonquin Trail showing include a note stating that they are segments of the Tonquin Trail.
- The modeling memo is posted on Basecamp. While it is really for Metro and City staff review, other TAC members can review it if they wish.
- Scott will send out a meeting request for the next TAC meeting rather than just posting it on the web site so that it shows up on people's calendars, and to know who will be attending the meeting.

A note posted on Basecamp on Sept. 15, from Clark Berry:

As a follow-up concerning the status of Boones Ferry jurisdictional transfer and proposed project improvement --An IGA was signed by Wash. Co. and ODOT on 6/20/2011. ODOT has 180 days to complete a jurisdictional transfer document and transfer jurisdiction of the road to Washington County (Wash. Co. currently has maintenance jurisdiction though). The project is envisioned to be a three-lane interim improvement from Day Rd. as far north as our funding will stretch. Major realignment work is needed at the south end. If things go smoothly, we are hoping to be able to go out for construction bids in the summer of 2012.

Clark

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting
December 8, 2011
1:00 p.m.

Notes

Those present:

City of Wilsonville:
- Chris Neamtzu
- Michael Bowers
- Jeff Owen
- Mike Ward
- Dan Pauly
- Shelley White

DKS Associates:
- Scott Mansur
- Brad Coy
- Carl Springer

Caleb Winter, Metro
Clark Berry, Washington County
Aquilla Hurd-Ravich, City of Tualatin
Julia Hajduk, City of Sherwood

Those around the table introduced themselves.

A PowerPoint presentation was used to facilitate the discussions throughout the meeting.

Project Web Site:
The Transportation Systems Plan Update web page is now available at: www.ci.wilsonville.or.us/tspupdate**.** It can also be accessed from Wilsonville's home web page at: www.ci.wilsonville.or.us.

Gaps and Deficiencies Technical Memorandum Summary
- The 2035 growth assumptions included only portions of Basalt Creek, I-205 Diversion/Clackamas County, and Advance Rd. The overall numbers used are available in the forecasting methodology memo on the website.
  - DKS focused on growth within the city for the TSP and used Metro's assumptions for trip generation from TAZs outside the study area. A general figure for percentages of build out could be provided for those zones.
- The Washington County label on Slide 4 should be moved into Washington County.

Street System
- Connectivity Gaps: (See page 3 of memo; Slides 9 & 10)
  - Only a small piece of the Canyon Creek Rd Extension remains to be completed as well as additional half-street improvements.
  - The Brown Rd Extension south of Wilsonville Rd connecting to Boones Ferry Rd would be added to the map. (Slide 9)
  - The original TSP identified Wiedeman Rd as a needed east-west connection between Parkway Ave and Canyon Creek Rd. Metro's gap guidelines require that connection,

whether Wiedeman Rd or another street, to extend to Stafford Rd. The street will be a collector or minor arterial.
    - The east-west connections were not included on Figure 1, Page 5, of the memo, but were discussed on Page 3.
    - While the east-west connection between Grahams Ferry Rd and 95th Ave is technically a gap, Metro provides a variance option for cost prohibitive projects (railroad).
- An alternatives analysis will be done after meeting with Council and the open house. The negative impacts of not constructing constrained or cost prohibitive connections on other facilities will be analyzed. Not putting in a connection would push traffic to other facilities and require other improvements on other networks.
- The 2035 baseline network assumptions were reviewed. (See Slides 12 and 13; page 4 of memo and page 5, Figure 1: *2035 Baseline PM Peak Hour Traffic Operations* of memo)
    - Although outside the UGB, Metro assumed the 124th Ave Extension in its model.
    - The Kinsman Rd Extension south of Ridder Rd was not assumed in the baseline network due to constraints with the railroad.
    - Financial considerations were not considered at this point. DKS is comfortable the identified projects would be completed over the next 20 years because they were previously identified and much of the work is underway. Removing these needed projects would result in an inaccurate picture of the City's true needs and deficiencies.
        - A financial analysis of available funding and funding options would be done once the alternatives are refined.
        - Areas like Canyon Creek would be developer driven and involve private partnerships.
        - Trade offs need to be discussed, including those regarding urban renewal districts.
- Intersection/Roadway Deficiencies: (See page 4 of memo; Slides 15, 16, 17, 18)
    - Delays on Elligsen Rd result from traffic queuing from the 65th/Stafford Rd intersection back onto Elligsen Rd; Elligsen Rd/65th Ave/Stafford Rd was looked at as one intersection.
    - The study assumes 2035 growth on existing roads.
    - The red line on Tonquin Rd (Slide 16) did not extend beyond the railroad because no analysis was done beyond that segment. Adjusting the diagram was suggested.
    - It seems inconsistent not to include funded improvements in the baseline, like the widening of Boones Ferry Rd, yet assume street extensions that do not have funding.
    - Tonquin Rd, Grahams Ferry Rd, and Day Rd are all in the RTP for improvements to a certain extent. Why use today's roads with 2035 growth if they were identified for improvements?
        - DKS would check Metro's model to confirm what was assumed; possibly a future year is indicated.
        - The baseline scenario sets the stage for why the improvements are still needed. The improvements will be part of the alternatives analysis.

    - The street extensions were assumed to get the circulation pattern right and get vehicles on the roads to show deficiencies; then roads that need improvements could be identified to ensure enough capacity exists.
  - This is a worse case scenario; no road widening projects are assumed in the study.
  - Boones Ferry Rd is shown in red on Slide 16 in part because of its approach to the Day Rd intersection. Rather than showing the entire Boones Ferry Rd segment in red, only the north leg of the Day Rd intersection could be identified where a widening is needed to feed into the wide Boones Ferry Rd cross section.
    - The two northbound lanes on Boones Ferry Rd at Day Rd will need to be widened as well as the approach lanes southbound to the intersection.
  - The modeling alternatives will have to be refined to address the outcomes of the Basalt Creek Study, as other projects are uncertain until that study is completed and the findings integrated into TSP.
  - The 2035 planning horizon should be indicated on the slides.
- On Boeckman Rd, the roundabout at Villebois Dr, intersection at Tooze Rd and the future roundabout at Kinsman Rd need to be bigger than constructed. Additional slip lanes would provide more of the needed capacity for one direction.
- The Kinsman Rd Extension from Boeckman Rd to Ridder Rd (Slide 17) was not assumed due to the constraints of the natural resources and railroad. DKS is not comfortable including it in the baseline network unless the Planning Commission and City Council believed it to be a high priority. Removing that extension contributes to the problems on Boeckman Rd as Kinsman Rd traffic has to use 95th Ave.
- Connecting the small segment of Kinsman Rd constructed north of the railroad would not really decrease pressure at needed intersections.
  - A Kinsman Rd Extension from Boeckman Rd north could possibly impact the Day Rd/Boones Ferry intersections.
  - Grahams Ferry Rd would definitely be impacted without that segment.
  - The future alternatives analysis show the impacts of having and not having the Kinsman Rd extension between Day Rd and Ridder Rd. City Council and the Planning Commission will have to be convinced that by building a Kinsman Rd extension that costs $X, the City will save $X on other improvements.
- Signalization is preferred at Kinsman Rd and Boeckman Rd, but BPA will not allow signal poles so a roundabout is the only design option.
  - The City has worked with BPA to raise the tower over the Barber St connection west into Villebois over wetlands and it was not as expensive as believed.
  - Raising the tower and signalizing the intersection versus a roundabout should be part of the alternatives analysis. One problem is what BPA will or will not allow in their rights-of-way.
- I-5/Wilsonville Rd interchange improvements will last through 2035 based on LOS D and ODOT's v/c .85 and .9. Additional analysis is needed at the southbound I-5 ramps (Slide 18). ODOT two standards and DKS will confirm the current .9 v/c is acceptable given the added storage the City built. DKS hopes to have the yellow dot changed to green before meeting with Council.

Pedestrian/Bicycle

- Including recreational bicycle/pedestrian projects in the TSP update was questioned. Concern was expressed about creating sidebar discussions at the work session on recreational trail projects that overlap with other City master plans.
  - The TSP involves all transportation modes used for any reason and is not limited to what takes traffic off the road.
  - Following discussion, only projects that impact employment commuting patterns will be included in the work session presentation. (Slides 24 and 25) Projects that are more isolated would be removed from the maps, but not from the stand-alone project list.
- Bicycle/pedestrian projects not highlighted on the slides are still part of the project list.
  - The Bicycle and Pedestrian Master Plan did not add to the 2006 TSP project list. The stand-alone list identified key projects to be done if not constructed as part of a roadway project.

Transit

- DKS will meet with City Staff to map the environmental justice populations of the city to see how well transit is serving them.
- SMART has tried to serve Old Town better, but the neighborhood asked that SMART not come into Old Town. Further discussion about this issue is needed.
- Slide 26 indicates existing transit service gaps with regard to the buffer, not accessibility, to bus stops.
- Frequency is a critical part of service that is not addressed.
  - Charbonneau and Villebois will be identified on the slides for the Council/Planning Commission work session as deficient due to infrequent service.
    - Villebois' services will change with the Barber Rd extension so that issue may be resolved over the planning horizon.
  - Complaints have been received from Charbonneau and Villebois. SMART is working to find a better way to formalize comments/complaints received at outreach events, etc. While no record of the complaints currently exists, but those comments should be part of this TSP process
- SMART routes in the old Thunderbird Mobile Park should be updated in the official TSP documents to reflect future work being done. Transit service would still be provided to the new neighborhood along Parkway Ave.
- The highest priority gaps for safe access to transit stops were identified, mapped and included on a project list adopted as part of the 2008 Transit Plan. Other deficient areas might be identified at the open house. New segments would have to be tracked if transit routes change.

Freight

- The Freight Plan is in process; input from surveys and stakeholder interviews would be compiled, and the Plan will be sent to this committee for review.
- The Freight Plan identifies freight routes in the system so as developers build, street systems and intersections are designed to accommodate freight vehicles and protect the City's infrastructure.

- The Plan will identify gaps in the system and areas where freight haulers have trouble.
- The Plan will show routes freight haulers can use through the city; freight haulers could be ticketed via the Code if driving in a residential area.
- Impacts to other transit modes must be logged. Each freight route could negatively impact crosswalks, sidewalks, bike lanes, increased vehicle speeds due to a larger turning radius, etc. Accommodating all modes is a balancing act.
- Truckers and farmers are expected to advocate against roundabouts.
- The Kinsman Rd extension to Boeckman Rd is important to have as new freight route; trucks are currently traveling through Villebois.
- Wilsonville is unique in that it does not have a freight plan given the amount of industrial use in the city. Most cities have a freight plan, but many are reluctant to restrict routes and cannot enforce them.
- With Safe Routes to Schools and three new schools being constructed, planning designated freight routes can prevent potential conflicts with children traveling to school.

TSMO

- Many opportunities exist for getting travel information. Message signs can be used, but usually people access dynamic traffic/travel information via ODOT trip check cameras.

TAC Comments

County Coordination/Findings

- At this point, it was uncertain how the 124th Ave/Basalt Creek Study would dovetail into the TSP process. The financially constrained outcome of that study should be known in May or so.
- Before the Council work session, DKS will figure out some of the assumptions for the TAZs, such as in Basalt Creek, to provide better details about what is assumed; so far the focus has been on the City's UGB.
- Mr. Bowers preferred not to have any study areas remain. Too many placeholder options existed in the study areas of the 2006 TSP, and elected officials continue to debate which projects are in or out. The goal is to get decision makers to understand the risks, costs, etc. and define the projects to the greatest extent possible.
    - The Basalt Creek area may continue as a study area; not all study areas could be eliminated.
- The alternatives analysis will begin after the public open house. The TAC will be updated toward the end of January about feedback from the City Council/Planning Commission work session and the open house.
    - Advertising for the January 11th open house began last month. Outlets will include the Boones Ferry Messenger, Wilsonville Spokesman, the City and SMART websites, and social media outlets. A mailing will also be done to people on the Planning Division's contact list from prior TSPs.
- Drafts from the alternatives analysis will start coming to the TAC in the spring, with the alternatives finalized toward the end of summer and the TSP completed for adoption in January 2013.

- Discussion and suggestions for the City Council/Planning Commission joint work session included:
  - Add a slide at the beginning identifying the objectives for the work session. The discussion could go off on a number of tangents; keeping the discussion on track and moving forward is important given the 1½ hours provided for the presentation.
  - Include the year on the slides to clarify if the existing condition or the planned condition is being shown.
  - Add a slide to explain the baseline and Metro's 2035 model better.
  - The Council and Commission will receive this meeting's handouts plus four other technical memos.
  - Be careful about consistency; be able to explain why some projects are included and others are not.
  - The maps show connectivity gaps for the south end of town, but these are not part of the discussion; only those in the northwest and northeast quadrants are discussed.
  - A couple minor corrections are needed regarding direction, such as Stafford Rd being noted as west of Canyon Creek.
  - Define "independently," used in Tables 4 and 5, to clarify that these projects would be constructed even without the full build-out of a development project.
  - Indicating which jurisdiction is responsible for the projects listed in the tables was discussed. It was decided to include that information in later projects lists due to the complexities of jurisdictional relationships. Simply noting a jurisdiction could be misleading without the full details.
  - Do not identify any partners in the Basalt Creek Study; only Washington County is named, but other partners exist. [two places 1004 3:51]
  - Jurisdiction typically means ownership, but it is not typically discussed in TSPs. The map on Slide 16 will inform the Council and Commission who owns what roads to understand which standards apply on the roadways shown.
  - The City transferred part of Tooze Rd to Clackamas County, which needed to be reflected on Slide 16.
  - Concurrency is a big part of the standards. DKS will discuss that information and slide with City Staff.

Clackamas County and ODOT were the only two not represented at the meeting. Mr. Mansur has scheduled a meeting with Larry Conrad to get his comments.

Next Steps

- Planning Commission/City Council Work Session: December 19th
- Public Open House: January 11, 2012
- TAC Meeting #4: January 25, 2012
  - Discuss feedback from the elected officials and the public about transportation needs and deficiencies in the city.
  - Input from public; developing and analyzing alternatives /transportation solutions.

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting
January 25, 2012
1:30 p.m. – 3:30 p.m.

Those present:

City of Wilsonville:
- Chris Neamtzu
- Mike Ward
- Jeff Owen
- Stephan Lashbrook
- Dan Pauly
- Linda Straessle

DKS Associates:
- Scott Mansur
- Brad Coy

Gail Curtis, ODOT
Clark Berry, Washington County
Larry Conrad, Clackamas County
Aquilla Hurd-Ravich, City of Tualatin
Julia Hajduk, City of Sherwood

Material distributed at the beginning of the meeting included:
- Meeting agenda
- "Evaluation Criteria and Scoring Methodology"

Those around the table introduced themselves. Stephan Lashbrook announced that he will become the City's Transit Director in about three weeks.

Scott Mansur explained that the "Evaluation Criteria and Scoring Methodology" included comments received from TAC members early in this process. He explained that this process is at the point of developing and analyzing solutions.

Using a PowerPoint presentation (to be posted on Basecamp), Scott and Brad Coy reviewed:
- Recent Work
- Next Steps
- Today's Objectives
- What will drive the alternatives?
  - He noted that there was a good turnout at the January 11, 2012 TSP Update Open House with good feedback, and got a pulse for what the community is looking for.
  - There was good feedback from the City Council and Planning Commission at their joint work session on December 19, 2011.
- What was presented and the major issues discussed at the PC/CC December 12, 2011 Work Session
- What was presented and comments from the TSP Update Open House hosted by the Planning Commission on January 11, 2012. Additional comments included:
  - Metro had a station presenting Tonquin Trail information.
  - The progress of the Freight System work had been behind at the last TAC meeting; this has been remedied, and there was good feedback about this at the open house.
  - A roundabout at the Stafford Rd/65th intersection was suggested.
  - Better transit access to Charbonneau and the Fox Chase area is needed.
  - People had suggested that the railroad bridge be used for bike/pedestrian crossing of the Willamette River, but the bridge still had trains using it.

    - A summary of the Open House which will include the boards and comments is to be posted on the City's web site for this process within a week.
    - Several interviews were videotaped which will be turned into a 5-minute project video that is to be posted on the web and on the cable TV access channel.
    - Specific suggestions were made regarding locations for new crosswalks.
    - Over 30 people including all seven Commissioners, the Mayor and a Councilor were in attendance. New people were in attendance at the open house.
- A survey was sent out to the City's large freight businesses.
    - Those companies that returned the surveys are listed in the lower left of the "Freight System Feedback" slide. Their top concerns are included on the right of the slide.
    - Chris Neamtzu explained that City representatives met with the garbage haulers at 5:00 a.m. to get their comments. He encouraged other jurisdictions that are embarking on these processes to consider similar types of strategies.
    - DKS has received feedback through three different groups: the freight survey, the commercial garbage haulers, and the residential garbage haulers.
    - The major issues that have been raised are indicated on the map on this slide.
    - Additional outreach will be done once the analysis is done to verify that the priorities have been addressed.
    - The top three projects that were identified as being the most important to freight businesses are the low bridge clearance on Grahams Ferry Road, the 95th Avenue/Boones Ferry Road intersection reconstruction, and Boeckman Road issues of the dip on the east side and the road settling on the west side of I-5.
- Scott reviewed the steps listed in the "What will analysis process look like?" PowerPoint slides.

The criteria in "Evaluation Criteria and Scoring Methodology" will be applied to each of the alternatives. TAC members offered the following feedback to the list of evaluation criteria:

- General Use of Criteria
    - There was a discussion about whether one criterion should be weighted over another criterion, (i.e., if a particular project should be given higher score if it resulted in job creation or if it benefited a geographic location that had been identified as a priority area for growth). It was noted that this would be only one criterion so it would not result in being given too much priority.
    - Scott explained that DKS will first look at a raw score, then will do a back-check based on the goals and objectives. DKS will list the goals for this process and explain how they relate to the criteria. Brad stated that DKS would compile a list of goals from previous TSP as well as the list of goals that are applicable to this project, and list the applicable criteria for each goal. This will be forwarded to the TAC for feedback.
    - It was suggested that Fundability and "Equitable" could be set aside as a second "sieve" as a second round of analysis. There was a discussion that even though most of the projects don't have a funding source at this time they should still be listed in the TSP.
    - It was suggested that bike, pedestrian, and transit projects should have their own sets of criteria that are different than what is listed in the handout.
- Multi-Modal Integration:
    - Add "TSMO" in Improved Roadway Efficiency
- Economic Vitality:
    - Make the Measure of Effectiveness under Supports Local Business broader than just freight.
    - Add other criteria about economic prosperity; something about job creation or protecting jobs. Add text about future growth.

    - Even if a project has been planned and funded, Maintenance is an important criterion to consider to preserve the investment that has been made. However, a concern was raised regarding how to quantify "Unsustainable maintenance costs for the City".
    - There was a discussion about whether funded "shovel-ready" projects should be given a higher priority. Weight could be given if there is known funding, pending development, or work has already been done.
- Equitable
    - It was noted that there was an "Equitable" category.
    - Add something about Environmental Justice: perhaps giving some kind of extra recognition if the project serves the underserved populations. This could be important with transit, bike, and pedestrian projects.
- Compatibility and Implementation:
    - It was suggested that Compatibility and Agency Standards should be eligibility criteria. This should be initial screen; if it doesn't meet standards or is inconsistent to some adopted policy, then the City needs to be prepared to justify the project. Scott stated that he would wordsmith these two criteria to say that you can have projects with some inconsistencies with standards but it doesn't mean that they are not feasible.
    - Gail Curtis referred to RTP expectations, and asked that they be more transparent in this evaluation exercise. She stated that the shift of the RTP was to move to gaps and deficiencies which could be a mobility deficiency. She wants to be sure that the evaluation exercise addresses the RTP objectives.
- Next Steps
    - Scott stated that DKS would take the TAC's feedback on the criteria, summarize the goals, and list how those goals relate to the criteria, then present this back to the TAC for approval.
        - Brad suggested that each of the goals list criteria that is specific to the different modes (motor vehicle, bike, pedestrian, transit, etc.), and then only apply the applicable criteria to the project. There was agreement to this suggestion.
    - DKS will update the "Evaluation Criteria and Scoring Methodology" handout and will summarize the goals and objectives with more clarity, and will post them on Basecamp for additional TAC comments to finalize the documents.
        - It was requested that DKS email documents to TAC members rather than requiring that they be downloaded from Basecamp as members continue to experience problems with accessing Basecamp. It was acknowledged that documents too large to email will continue to be posted to Basecamp for member downloading.
        - It was suggested that "GoToMeeting" be used for group commenting on future documents (it is similar to a webinar) so that everyone is talking on the same conference line and looking at the same document.

Improvement scenarios and alternatives were reviewed via the PowerPoint presentation. Additional comments included:

- One of the next steps that DKS is going to do is work through individual improvements to see what they do. They will not be looking at combination improvements yet.
- RTP cross-section standards were discussed in terms of making sure that the City was consistent with the RTP.
- Combining Minor Arterial and Major Arterial into one classification is being considered.

- Brad stated that arterial, collector, local, and neighborhood route classifications are the common classifications that DKS has been doing for other jurisdictions. The neighborhood route frequently becomes a collector, but serves a neighborhood and includes more parking.
- TAC members were asked to share their ideas regarding cross-section standards with Mike Ward. Chris asked Mike to work with Steve Adams and Michael Bowers on this issue.
- Chris stated that the City wanted to be consistent with the counties. Larry Conrad stated that Clackamas County will show the Wilsonville's classifications on their county maps.
- Scott was asked to work with the City regarding how to fold Green Streets into the cross-section standards.
- There can be ranges of street widths and rights-of-way within the classifications. This range can be footnoted that the exact measurements are to be approved by the City Engineer.

- It was questioned that while Stafford Road is rural now, what is the vision for this road once the Frog Pond area develops?

The remaining PowerPoint slides included maps with questions noted to the side. DKS is not looking for answers to these questions at this meeting; rather they are the questions that DKS is going to try to answer with their analysis. Brad reviewed each slide. (The PowerPoint posted on Basecamp for TAC member included answers given at the meeting to some of the questions). Additional comments included:

- Safety Solution Alternatives Slide:
  - Scott asked Chris and Mike to confer with Deputy City Engineer Eric Mende about the site distance issues at Grahams Ferry Road/Clutter as Eric had some ideas about how to make this intersection work. Chris stated that signalization has been considered.
- Safety Deficiencies:
  - Clark and Stephan stated that the substandard horizontal curvature on Boones Ferry Road is being addressed in Washington County's Boones Ferry: Norwood to Day project. Construction is expected to start in Oct. 2012.
- Bikes and Pedestrians.
  - If a goal is not clear in the adopted TSP, hopefully the new TSP can have a more specific goal.
- Transit Service Gaps/Frequency
  - DKS will work with SMART regarding criteria for pedestrian connections to transit stops. Jeff stated that SMART has mapped crosswalks that could be overlaid with SMART stops. He is currently reviewing all of SMART's 180 bus stops to identify pedestrian access to transit, including listing ADA accessibility sidewalks, etc. Jeff was asked for a contact person to assist DKS with looking into statewide goals for this.
  - Gail stated that the guidance about transit stops would come from the state's Transportation Planning Rule. She listed other state documents that include some guidance regarding transit stops.
- Freight Solution Alternatives
  - Freight companies would like to see a buffer between bikes and pedestrians on freight routes.
  - Clackamas County recently updated its bike path standards which include a cycle track standard which widens the right-of-way.
- Freight System:
  - The freight route of Brown Road to 110th Avenue is going away with Villebois development, so Kinsman Road is needed to replace that north/south freight route. It is essential that the freight traffic not go through Villebois any more in the future.
- Street System Connectivity Gaps:

    - Boberg Road is not a good alternative to the Kinsman Road extension.
    - Based on the constraints, DKS is not considering an east-west connection between Boeckman Road and Clutter Street. Scott asked if this is something that should be looked at. Gail suggested that the constraints should be documented in regards to RTP consistency. Scott stated that DKS does plan to document the constraints, but does not plan to do an alternative analysis of an east-west connection.
    - DKS plans to look at Wiedeman Road in two segments, between Parkway Avenue and Canyon Creek Road, and between Canyon Creek Road and Stafford Road.
- 2035 Street System Deficiencies
    - DKS is also working with the Basalt Creek planners and are coordinating with that effort. Wilsonville's TSP Update process is a bit ahead of the Basalt Creek planning, so Basalt Creek's final findings will not be available for Wilsonville's TSP Update. Michael Bowers has given direction to DKS that it is likely that coordination will be needed after the TSP Update process is done.
    - As the Kinsman Road extension is tested in the modeling, results may show that a roundabout at the Kinsman Road and Tooze Road could take some pressure off of the other intersections; if you build the Kinsman Road extension, the other intersection improvements may not be needed.

TAC members offered additional comments and questions:

- Julia Hajduk stated that she would like to share this PowerPoint with Sherwood's City Engineer. Scott stated that he would make the PowerPoint available via Basecamp.
- Scott listed the projects that are proceeding separate from this process:
    - Wilsonville Road/I-5 interchange improvements
    - Elligsen Road/I-5 interchange along with the 95th Avenue/Boones Ferry Road intersection improvements
    - Basalt Creek area improvements – there may be some additional interchange improvements needed with full build-out at Basalt Creek.
- DKS and Jeff stated that they would check to see if the RTP addresses where and how the bike/pedestrian bridge is to cross the Willamette River.
- Scott noted that the #1 issue at the December 19, 2011 CC/PC work session seemed to focus on Boone Bridge.
    - He questioned what would be the best way to look at a regional issue. He noted that this is a regional issue that is going to impact communities.
    - The Boone Bridge problems were discussed. Gail stated that an ODOT safety engineer has looked and analyzed this in the past and has data about the nature of the accidents that occur.
    - Another issue that was discussed was that the CC and PC would like to see bicyclists and pedestrians covered as part of the Boone Bridge discussion.
    - Chris is to talk to Gail about previous planning efforts that addressed bike/pedestrian crossings of the Willamette River including the French Prairie Bridge.

Next steps:

- Comments regarding today's presentation are due in one week.
- An updated goals and criteria document will be sent to TAC members for review.
- A "GoToMeeting" might be set up to facilitate the feedback.

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting #5
April 11, 2012
1:30 p.m.

Those present:

City of Wilsonville:
- Chris Neamtzu
- Steve Adams
- Mike Ward
- Jeff Owen
- Linda Straessle

DKS Associates:
- Scott Mansur
- Brad Coy

Gail Curtis, ODOT
Aquilla Hurd-Ravich, City of Tualatin
Julia Hajduk, City of Sherwood
Caleb Winter, Metro

Material distributed at the beginning of the meeting included:
- Meeting agenda
- Draft "Solutions Analysis and Proposed Funding Program (Task 6.4)" Technical Memorandum

1. Review Project Status.

Scott Mansur explained that DKS Associates worked with the City to revise the goals and evaluation criteria. After reviewing the goals in the current Wilsonville TSP, it was felt that new goals would help towards the desired integrated system of all the different modes. Scott directed those interested in seeing the updated goals and evaluation criteria to ask Brad Coy for them. Chris Neamtzu has presented them to the Wilsonville Planning Commission and did not receive any comments. The plan is to present them to City Council on Monday, April 16, to get the final buy-off of the goals.

2. Solutions Analysis Findings

Scott reviewed the "Solutions Analysis and Proposed Funding Program (Task 6.4)" Technical Memorandum. Additional comments included:

Page 2. Improvement Priorities
- The listed solutions are listed in order of priority and were referred to when DKS looked at the gaps and deficiencies.
- Brad noted that DKS is looking at individual projects right now with the goal of choosing preferred projects for packages for the next upcoming feedback cycle.
- Brad explained that items 1 through 4 of the solutions priority list buys time for capacity, but eventually the capacity improvements will have to be done.
- Scott reviewed the steps thus far including this committee's review of the evaluation criteria based on goals that were produced to date and have been presented to the Planning Commission. That criteria was used to come up with the solution priorities here. Matrices were done so that if the City Council changes criteria or whatnot, we can just update that.

- All of the projects have been evaluated already. DKS has come up with solutions to all of the gaps and deficiencies in the system. The last couple of pages of this memo refer to funding, but all of the projects add up to $168 million and the City is only going to have about $77 million available for funding.
    * All of the solutions are being evaluated. The next step of the process is getting feedback from the Planning Commission, City Council, and the community to formulate the best solutions package for the money that is available. The schedule for public presentations are listed in the agenda.

Page 3 of 71

- Brad explained that the colored boxes within the memo contain solutions and to think of the solutions as either falling under policy approaches, policy strategies, or improvement projects approaches. These items are going to be incorporated into recommended policy changes for the TSP. They are also going to include a list of projects. Scott noted that an example of this is the Parkway Avenue access management – when the City actually builds a street project along that segment that would be a great time to implement some access management.
- TSMO.
    * The City identified additional strategies and projects including the I-5/Elligsen Road Interchange and Parkway Avenue; and the rest of the solutions are looking at Code changes and other items to continue to provide good access management within the City.
    * Whether adding right and left turn lanes are considered to be intersection improvements or part of the system operation management was discussed. Gail stated that ODOT and perhaps Metro consider them to be an operational improvement versus a capacity improvement. Scott responded that DKS looked at signal coordination more from a management standpoint. So all of the turn lanes and intersections are based in the capacity section; they have been broken out from the roadway improvements. Gail expressed concern that this might be something that should come last in the RTFP Title 2 "Solutions" hierarchy of improvements, and suggested that a distinction be made that it is an operational solution. Metro might want to comment one way or another. Scott agreed with her because instead of being fifth on the list is it number one for certain projects. Gail stated that this be chased down and Caleb Winter stated that he could look into it more. He is thinking of the management and reliability of the corridor. It all adds up to achieving the optimal capacity of what is built as opposed to adding capacity. [NOTE: RFTP Title 7 distinguished turn-lanes one-quarter mile in length of less as operational improvements and over one-quarter-mile as capacity improvements. See "Significant increase in Single Occupancy Vehicle (SOV) capacity".]
- Gail asked that the word "Centers" be added under the third bullet, Transit, so that it is clear that we are trying to provide the highest quality service at activity centers.

Page 7. Transportation Demand Management (TDM)

- Fiber network. Once the entire fiber network is completed, all the intersections on Wilsonville Road will be part of the central system network which will allow for a lot more traffic signal management. The City will be able to start looking at data collection and management in the future which will give the City a lot of different options on how to operate their signal systems.

Page 10: TDM

- The City is already doing great things. For example the City has worked with a lot of industrial users to get their shifts outside of the peak hours.

- Brad asked for more feedback regarding the SMART Options Program prior to the May 7 joint Planning Commission/City Council meeting.
- TMA. Caleb noted that Metro's TMA policy has been changing a bit recently. It is not that TMAs are not encouraged but the directional support is tied a little more to what it is: a private/public partnership strategy. He suggested that some text be included to describe better what a TMA would mean and the feasibility of it. We can look at the project description too.
- Additional Regional Ridershare Partnerships. "Carpool Match NW" should be changed to "Drive Less Connect".
- Off-Peak shift Change Policies and Practices. There was a lengthy discussion about how the City is doing a good job of getting employers to agree to off-peak shifts during the development process but that there is a lack of follow-up to ensure that this is happening.
    * Scott stated that this is putting a policy in place for the City to not only continue to work with employers to get shifts outside of the peak periods, but also have policies and standard practices to follow when going through that process.
    * Gail suggested that rather than saying "develop systems policies" as a future action that a policy (and possibly regulatory language) be developed to support Wilsonville's TDM common practices to provide a legal framework.
    * Brad noted that this is the plan when the policy work is done. The solution package will include all of the improvements, financial constraints, and at the same time we are going to be a parallel effort to revamp the City's policies that are going to be included in the TSP. This refers to doing that policy development right now with the next step.
    * Gail noted that a common element of that is annual reporting. So they really have to keep track of what their employees are doing.
    * Jeff stated that this is an option that SMART Options can help with because we want to have ongoing talks with these companies and maybe that can be part of what we talk to them about. Chris asked if this connection could be made in the policy.
    * Scott stated that during their contacts with the larger industrial companies, they stated that their employees would really like to use WES but WES's hours of operation start too late to accommodate the earlier shifts.
    * Steve Adams noted that the City needs to internally look at that the SDC savings were based on P.M. peak hours but is now based on square footage. He did not think that there is currently a clause saying that if you are off the peak hour you get some kind of savings. We need to address how we are going to work our SDC credits. He stated that the PF conditions about traffic reduction and traffic coming in during off-peak hours got dropped about 2006. Stephan Lashbrook, Transit Director, wants to identify someone in SMART who can track this and work with it and perhaps that PF condition could be part of the condition package again.
    * How the TMA works was described and examples offered. Jeff stated that SMART Options has tried to do basically what a TMA would do but to a lesser degree. He noted that the Wilsonville businesses are paying for the transit system so SMART Options is a service that is included for their paying for the transit service.
    * Caleb stated that Metro has a list that was compiled 5 to 6 years ago as part of a TGM Grant for achieving the 2040 modal targets. He will send that list to DKS.
    * Brad asked that the committee think about how they want this to look like and offer suggestions during the next feedback process: how much of the TMA elements is SMART Options is doing; what is the solution that works for the city in reaching these objectives.
- There was a discussion regarding the requirements of the ECO Rule. SMART Options has developed and implemented the plan for meeting the ECO Rule requirements. Jen Massa-Smith of SMART works with the employers with over 100 employees to develop traffic-reducing plans. Brad noted

that there is a reference to the ECO program but it doesn't state that DEQ is the agency that is the administrator of this program. This reference is to be added.

Pages 11 and 12. Safety Improvements

- Safety improvements are listed in order of evaluation scores, so the higher the score means that the improvement has met the goals and criteria. DKS is working with the City to review all of the cost estimate assumptions.

Page 13. Alternative Fuels and Transportation Electrification

- DKS has had discussions with Metro people regarding the Level II electrical charging station. It is about $2000 to $3000 to retrofit an existing home with a charging station; but is only a few hundred dollars if it part of a new construction of a home. Gail suggested that it is difficult to put costs into documents, but maybe state that the cost is ten times more to retrofit versus new development, and perhaps include the year of this reference.
- DKS would like City feedback on the transportation electrification ideas. They are not trying to push these options as the way to go, but based on their research this is what they are recommending.

Pages 14 through 20. Bicycle and Pedestrian Improvements

- The City has already done a significant amount of work on the Bicycle and Pedestrian Master Plan that was adopted in 2006.
- DKS has kept basically the same number of projects listed in the Bike/Ped Master Plan but have made a few minor modifications as noted in Table 2: Bicycle and Pedestrian Projects (Community Walkways/Bikeways):
    * The priority level of a couple of projects was changed.
    * The cost estimates from the 2006 plan were increased based on 2011 cost estimates.
    * The projects that were moved up in priority were the I-5 crossings.
    * DKS thought that a connection over I-5 is critical to provide a connection between Brenchley Estates and the Town Center on the east side of I-5, and the WES station on the west side.
- Gail asked that the Project Type be further clarified as it is not completely clear as to what the project is trying to address. She noted that the RTP focuses on addressing system gaps and deficiencies. Chris responded that this is already identified but a cross-reference may be needed. Brad suggested that this could be in the form of a table in the appendix.
- Table 2 indicates which of these projects are recommended to do along with the roadway improvement or widening. Even though those projects have a cost estimate identified here, their cost estimates were not summed at the end of the report; otherwise those projects would be double-counted.
    * Scott stated that if a bike/ped project was to be built as a stand-alone project, the bike portion of C4 or C6 would be $4 million, but they have already been identified for the 5-lane widening with bike facilities at $13.6 million. To prevent double-counting at the end funding, it has been taken out as it is assumed that it is going to be done as one project. Scott stated that this will be called out the same way as some of the intersection improvements are with a star that says that the project is covered under another roadway improvement project. They are not to be deleted because it could create confusion on where the project is.
    * The Seattle Cost Index was used to update the 2006 cost estimates to the 2011 level.

Page 21. Safe Routes to Schools (SR2S)

- The Safe Routes to Schools is part of the Bike/Ped Plan.

- This is an update since this information was not available at the last meeting and is based on information from Jeff.
- The project list has not been prioritized – they are all important.
- Chris and Jeff asked that the maps for each of the project descriptions on pages 21 – 23 be more detailed as it is not clear where in the city these routes are.
- Chris noted there has been an outreach with all of the stakeholders and the City wanted to give them something that they could plan for. He asked Scott if there will be more detail about SR2S in the TSP or if what is in this memo was the level of detail that DKS was planning to include in it? Brad stated that if DKS gets additional feedback on SR2S, they could include it in the TSP. Jeff stated that he could help DKS with this.
- Chris and Jeff described the extensive work that the City has done regarding SR2S. Jeff stated that the City is now at a point where they are ready to give an action plan, something of value, to the schools which would wrap up this task as part of the TSP. Chris suggested that details of this effort could be made a separate appendix to the TSP as he didn't want to lose this part of the process. Scott stated that once this process is complete it would be easy to incorporate it into the TSP.
- Gail suggested that a piece of this could be a table that provides trail or path standards in a range of widths to provide both guidance and flexibility and to avoid substandard systems.
- Chris and Steve discussed the good pedestrian facilities at the new Villebois (Lowrie Primary) School. Chris also related the lack of bicycle riding areas and policies precluding the riding of bikes on the school property.

Page 24. Transit Improvements

- DKS met with Stephan Lashbrook and Steve Allen to review the Transit Improvements with them. They are still coordinating that information.
- The items listed in the colored box are the items that DKS understood from Stephan and the transit team to be the important areas to highlight. Stephan is to get back with Scott and Brad to confirm that the information reflects what was discussed. Jeff will check this out with Stephan.
- The Transit Master Plan is only a few years old and is fairly current and has a lot of good information.
- This is mostly policy driven.

Pages 26 – 28 Street Functional Classifications

- DKS identifies the need for adding the "Neighborhood Collector" classification as described on page 28 in the colored box. They felt that this would be a good option and would fit well with transit when there is a need to get a transit route through a residential area.

Pages 30 Street Design Changes

- Steve related that a City Councilor has questioned whether another overpass crossing over I-5 is needed between Boeckman Road and the Elligsen Road/I-5 Interchange. He didn't think that it was needed due to the wetlands on the west; there is not much more expansion that could be done on the northwest corner of Wilsonville, but he thought that it should be mentioned because it probably will come up at a Council meeting. The Councilor's concern was that as the lands east of Stafford Road build out is there a greater demand to go east/west. Steve asked if DKS has already looked at Boeckman Road; is there a need to make Boeckman Road a major arterial between Stafford Road and going the other way or does it work as a minor arterial as development occurs east of the city.
    * Scott explained that for this TSP only the current UGB can be considered. So DKS has not looked at land use or anything on the east side other than the work that they did for the school

expansion and some of the expansion area there. As far as what is going to be needed for additional connections for future development on the east side of Stafford, DKS hasn't looked at that as part of this study; it wasn't part of the scope.

  * Gail noted that a sensitivity analysis would be helpful to determine if there are system impacts that will result from decisions made about the Basalt Creek planning. [ODOT's expectation is that the local collector and arterial system would be built before modifications to I-5 are determined necessary]. The sensitivity analysis may be another resource to help answer the Councilor's questions.
  * Brad noted that the Boeckman I-5 crossing is shown as being widened to four or five lanes.

- It is DKS's recommendation that the Brown Road Extension connect at Bailey Street. It has a higher evaluation score than the Brown Road connection at 5th Street. The 5th Street connection is still part of the analysis, but the Bailey connection is what DKS is recommending.
  * Steve suggested that if connection is made at Bailey, then Boones Ferry Road south of that doesn't need to be a major collector. Scott made a note to change Boones Ferry Road, south of Bailey, to a neighborhood collector.

Page 31. Road Widening

- Based on capacity, these are the roadways that had deficiencies that were not addressed by any other options other than widening these facilities.
- Scott recommended that all the references to 4 lanes under "Project Type" in Table 5 be change to 4/5 lanes – 4 lanes then widening to 5 lanes for turn lanes when needed.
  * There was discussion whether to widen the road just where the turn lanes are needed or to have a planted median where left turn lanes are not needed. Scott stated that medians are a good idea because as development and redevelopment occurs, they provide flexibility for additional turn lanes.
  * Gail noted that planted medians also provide flexibility to not provide access which makes for a safer and more efficient roadway. Also medians create understandable roadway travel options. There was a discussion regarding the advantages and drawbacks of restricting accesses.
  * Scott asked Engineering and Planning staff to look at how the evaluation scores came out in Table 5, and for Engineering to look at the cost estimates, and verify whether it seems to be consistent with City expectation.
  * The naming convention of this should be to call it a 4-lane section with a description of left turn lanes and medians.
  * It was noted that the 3-lane roads are 2 lanes with left turn options. There are fewer access restrictions and more driveways.
  * Jeff expressed concern that adding a median with curbs could restrict room for bike lanes; if the road does not already have a bike lane on it, it could preclude future adaptation to a bike lane because there is not room in the middle to move paint lines. He wanted to make sure that if medians are to be installed, the roadways already have bike lanes.
  *

Page 37 – 47. Roadway Extensions.

- DKS identified extension projects to meet each of the roadway gaps that were identified in the roadway gap evaluation. Scott reviewed the recommended options listed in Table 6.
    * Kinsman Rd (Boeckman Rd to Ridder Rd) may drop off of this list due to its challenges.
    * The following pages provide a schematic for each of the listed projects in Table 6. The schematics include a screen shot from the transportation model showing that when an extension is built how much of the peak hour traffic it is going to carry, where it is going, and

where it is taking the traffic from. It helps the policy makers to understand what they are getting for a particular project.

- Jeff asked if the Wiedeman Rd (Parkway Ave to Canyon Creek Rd) roadway extension includes a trail or just the bike lanes and sidewalks. He pointed out that the Bike/Ped Master Plan's Project R6A is a regional trail that would use that same corridor; does the listed cost include the trail? A separate multi-modal path on one side would require more right-of-way. After a lengthy discussion there was agreement that the street cross-section with sidewalks should be separate from the trail; the trail would be in addition to the Wiedemann project.

Gail asked DKS how it addressed land use as part of the sieve for opportunities to make a system work better. Scott stated that he has not talked to the City about opportunities for that. He stated that the City has to make the decision of wanting to make land use changes to manage the system.

- Economic development opportunities were included in the scoring criteria but land use changes were not.
- The model included the Town Center as an area of significant future growth so there is a land use component in part of the scoring criteria.
- Gail stated that land use changes need to be reflected in the "Solutions" memo in some fashion and it may just reinforce the existing land uses and say that no land use changes are recommended but the analysis and documentation is needed.
- Chris noted that Wilsonville's Code has so much flexibility; housing is allowed in the commercial districts and there are even allowances for housing in the industrial area. He stated that it is worth the conversation; pull out some discussion about how the City's planned development process has this flexibility.
- Gail suggested that neighborhood commercial areas could be introduced in areas that are now fairly exclusive residential areas.
- Brad stated that this could be done. He noted that he had a few questions that could be discussed after the meeting.

Page 48 Intersection Improvements

- Scott cautioned that the cost estimates in Table 7 may appear to low but these figures are just for the signals; a lot of the actual intersection improvements are covered under roadway extensions or roadway improvement projects. This was to make sure that a roadway improvement was not double-counted in the end.

Page 68. Regional Needs and Improvements

- This TSP Update is not going to solve the I-5 Boone Bridge congestion problem as it is a regional concern.

Page 70. Funding Outlook

- No ODOT or federal funding of projects was assumed for the planning level cost estimate.
- This section is still in the planning level phase.
- Table 8 on page 71 includes all of the projects that have been identified in this memo which makes it clear that the City cannot build everything, but this is the starting point to give framework to what we are working with.
- This is intended to gear up for the solutions package preparation which will include more details and will provide a more accurate picture per project.

- DKS has worked with the City to do a thorough analysis to put together elaborate spreadsheets. Scott feels that a really good job has been done to come up with the numbers.
- Brad noted that so far just about everything has been based on past projects and it is very project specific. The City does a good job to look for funding from different sources for its projects. What he envisions for the next step is to do a breakdown of how each project is going to be funded and list the proportions that possible funding sources could provide for each project.

3. Next steps:

- Scott reviewed the next steps as listed on the meeting agenda.
- Comments regarding today's presentation are due in one week.

There was a discussion regarding the new format of this technical memo. There was agreement that even though it was much longer, the format makes for better and quicker readability. Chris and Scott are to discuss how it was to be presented to City Council after this meeting.

The meeting adjourned at 3:10 p.m.

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting #6
July 31, 2012
1:30 p.m.

Those present:

City of Wilsonville:
- Chris Neamtzu
- Steve Adams
- Mike Ward
- Nancy Kraushaar
- Katie Mangle
- Linda Straessle

DKS Associates:
- Scott Mansur
- Brad Coy
- Carl Springer

Darci Rudzinski, Angelo Planning Group
Gail Curtis, ODOT
Caleb Winter, Metro
Clark Berry, Washington County

Material distributed at the beginning of the meeting included:
- Meeting agenda
- Draft TSP Policies (Task 6.5) Technical Memorandum, dated July 27, 2012, clean copy
- Draft TSP Policies (Task 6.5) Technical Memorandum, dated July 27, 2012, copy with edits showing
- Draft Recommendation: Financially-Constrained Project List (Task 7.1), dated July 26, 2012

Meeting Purpose:
Review and receive feedback on the Draft Recommended Financially-Constrained Project List (Tech Memo #8) and the Draft TSP Policies memorandum to identify changes in preparation for the upcoming Planning and City Council meetings.

Meeting Notes:
Introductions were made around the table because there were new people in attendance.

Noting that the City has a new Community Development Director, Nancy Kraushaar, Chris Neamtzu explained that until Nancy says otherwise, Chris is still the primary contact for the TSP update project and Steve Adams continues to be the key person for the technical side.

1. **Draft TSP Policy**
   - **Review Draft TSP Policies memorandum**

Darci Rudzinski summarized the Draft TSP Policies (Task 6.5) Tech Memo with these additional comments:
- The Wilsonville Planning Commission is to review this document at their August 8 meeting. Comments regarding the Tech Memo are to be sent to her in time to incorporate changes prior to next Wednesday's Planning Commission meeting.
- An effort was made to catch the redundancies between the adopted documents as well as update Wilsonville's Comprehensive Plan policies so that they are relevant to a policy document and to make sure that the City was compliant with the regional goals and objectives. The TSP policies are not meant to be redundant to the Comprehensive Plan transportation policies.

- The transportation-related Wilsonville Comprehensive Plan policies were used as a base for the listed policies, and policies from other city plans were consolidated and organized under four overarching goals as listed on page 2 of the memo.
    * The goals are broken into topic areas rather than by modes; the goals will organize the policies under themes.

Discussion of the Draft TSP Policies Technical Memorandum included:

- Not all of the policies have implementation measures. It is not that some policies are more important than others; rather it is a way of emphasizing where there were actions or follow-up issues.
    * New implementation measures could be identified through this process.
    * A discussion regarding whether all policies need implementation measures included:
        - Wilsonville's regulations may already be implementing the Comprehensive Plan Policies. Keep the policies at the higher level to assist in determining whether a proposed development-driven change is consistent to the Code.
        - Policies are never outdated. Implementation measures are action items providing special emphasis; they do not necessarily say exactly how the policy is going to be implemented.
        - Some policies need implementation direction to provide direction as to how the policy is going to be met.
        - While a policy may not have an implementation measure listed for it, implementation strategies may be listed elsewhere due to duplications throughout the document.
        - It is not uncommon to for questions to go unanswered regarding implementation of policies. This may get people thinking about where a standard should be implemented; it is a conversation with the community about where emphasis should be and how much detail should be given for various initiatives.
        - You may want to be a bit vague on the details and not be locked into having only one way to meet a policy.
- The Planning Commission likes efficient statements and clarity. They are good at word-smithing and will probably provide detailed comments. Their comments would be folded into the comments from this Committee.
- Transportation Funding which is described in a paragraph at the end of the memorandum needs to be added to the list of policies on page 2.
- Policy 4 under Transportation System Design.
    * A City Councilor had expressed earlier that he was not supportive of electrical charging stations being subsidized; that they should not be for free public use. This concern will need to be addressed.
- Policy #12 under Connectivity:
    * The Planning Commission will probably struggle with "high" level of connectivity. What is meant by "high"?
- Policy #15, Implementation Measure X.a under Transportation System Management
    * Scott is to give Chris, Nancy, Steve, and Mike copies of Clackamas County's ITS Plan. Scott stated that ODOT has it on their web site since ODOT funded it. Scott is to send the link out.
- Policy #15, Implementation Measure X.e.
    * SMART Options Program includes ridesharing and does not need to be listed separately.
- Chris would provide DKS with his additional comments.
- Caleb was asked to provide his comments to Scott for posting on the Basecamp so that Gail can make sure that the TSP Update is hitting the mark in compliance with the RTP and RTFP. Darci assured that they had looked at the City's ordinance language to match it up to the RFTP.

- Katie and Darci discussed the policy that states that the bicycle parking requirements are to be increased; if there is ordinance language that is going to be adopted at the same time as the TSP, why have a policy that says that it is needed next year when it has already been adopted.
  * Darci stated that there are a couple more policies such as this one, and suggested that it is a "catch-22" situation. It is nice to have the direction of the policy to guide the action, but the action is adopted into the Code at the same time. She will take another look at this.
  * There was some agreement to keep this at a broader policy direction to support the other modes; there is a parking policy and it is not necessary to go down to this level of detail. The broader policy keeps the document meaningful so that it is not obsolete two minutes after it is adopted.
- Brad stated that he would email the memo that was put together about the RFTP to Katie and Caleb.
  * Darci stated that there is language that is RFTP compliant and the TSP Update language is going to be more RFTP terminology specific
  * Brad noted that they have received comments from Metro regarding prioritization explaining that not that every project needs to go through the detailed transit, TSMO, and bicycle evaluation process. They already have some direction on their questions.
- Policy # 20 under Land Development Coordination.
  * "Ensure that new development and redevelopment provides connections to transit streets and facilities…":
    - Refers to streets that are to be serviced by SMART.
    - It could also mean that new development and redevelopment are to have sidewalks and crosswalks, and large commercial and apartment developments are to have internal circulation to enable people to easily get to transit stops.
    - It may also refer to planned transit stops that may not currently exist.
    - It gives the ability to have mid-street crosswalks, and to develop one side of a street.
    - It provides a trigger to be able to get something across the street from a far-side bus station.
- Darci stated that some of these policies say the same thing but are worded differently based on the heading they come under.
  * Land Development Coordination policies represent what is expected from a developer versus active transportation-type activities. There are some redundancies but if you only have something under one heading there is the danger of not really emphasizing it under another.

2. Draft Recommended Financially-Constrained Project List.

Scott reviewed the Draft Recommendation: Financially-Constrained Project List (Task 7.1) technical memorandum and related:

- The sources of funding that were used to come up with the $77 million available for the Financially-Constrained Solutions Package (page 2 of memo).
- He worked with the City's Assistant Finance Director to determine the amount of money that might be expected from the funding sources.
- State and regional revenues were not specifically identified in the funding analysis because it is hard to come up with a good understanding about what is going to happen; however, a few RTP projects were included in the Financially-Constrained project list.
- Gas taxes are included in the $77 million.
- At the time that the financial analysis was done, the West Side Urban Renewal District did not have any available funds. The comment from the City's financial people was that it was safer to not assume that any money was going to be available until development was happening again. This issue was discussed at length including the following:

* Since this was a 2035 plan, development in the District during the lifetime of the TSP could be assumed.
* The Fred Meyer property has been switched to the West Side Urban Renewal District and is getting the District back to paying more than just the interest.
* There should be West Side Urban Renewal District funds available, especially with all the recent development in Villebois. Building permits are being issued for Villebois every day and there is a lot of construction activity occurring in Villebois. The City did not anticipate this amount of activity six months ago when this issue was discussed with the Assistant Finance Director.
* Wilsonville now has a new Finance Director and Chris suggested that DKS meet with her.
* DKS did not want to set expectations too high and tried to be conservative with the types of funding that would be available.
* A discussion regarding Federal, State and Metro funding assumptions included:
    - Gail stated that based on her discussion with the person who does the forecasting for State funding, it is reasonable to not include Federal and State money; with the exception to the RTP money, which is federal-sourced money, don't assume that there is funding independent of the RTP. She also suggested that only a portion of the funding for projects that were on Metro's constrained list be included.
    - If the projects are listed in the RTP, and also in Wilsonville's TSP, care needs to be taken that double-counting of the revenue doesn't occur. Scott explained that funding projections that were given to Metro were done by the same people at the City who worked on the TSP Update funding projections, so this has already been coordinated.
    - DKS will be discussing these issues further with Wilsonville's finance people.
* The issue of the West Side Urban Renewal District funding needs to be discussed with Kristin Retherford. Her input is needed so that projects are not paid out of limited resources that could be paid out of Urban Renewal funding. Barber Street, which is in the West Side Urban Renewal District, was used as an example of an important link that needs to be done one way or another.
* It was suggested that the amount of available funding be listed as a range, with low and high ends rather than the set amount of $77 million.
    - The $77 million was derived from collecting revenue data from the last ten years, then coming up with an educated guess about how much money to expect in the future.
* The City identifies where the funding for projects is to come from when it does its 5-year CIP, but it would be beneficial to identifying specific project funding sources in the TSP.
* An earlier technical memorandum was devoted to the funding of projects. (Solutions and Funding Task 6.4)
* Brad and Scott discussed that the RTP was used to form project cost estimates but revenue comparisons for the RTP were not done.
* Metro looks at all the cities and counties to see what all the potential revenue streams are.
    - Brad stated that this information had not been passed on to them; he was not familiar with that process. This is another thing to be asked of the Finance Director.
    - Caleb stated that Metro should have a database of the revenue streams, tracking back as to how the dollar amount was arrived at.
    - Washington County has that information for the County. Clark couldn't remember if Washington County's portion includes Wilsonville

- The reference to "Figure 1" on page 2 needs to be listed as Figures 1A through 1D as Figure 1 is split up into four figures.
    * The legends on the figures do not match the streets; the widenings and extensions are reversed.

- Page 2, Brown Road Extension Alternative. This project has two different alignments at this time; the actual alignment has not been selected yet. Once City Council provides feedback about their alignment preference, a final alternative will be included in this TSP Update.
- Page 2, Pending Basalt Creek Refinement Plan Findings.
  Washington County is in the process of conducting additional analysis for the Basalt Creek area and the preliminary findings should be available at the end of this year. This TSP Update will be adopted before the Basalt Creek Transportation Planning is complete; Wilsonville will amend the TSP based on the findings from that work.
  * The modeling assumptions for the Basalt Creek area for this TSP Update assumed about 70% of Basalt Creek being built-out which was approved by Metro for this Update. Washington County's work is assuming a 100% build out.
  * Using the 70% build-out assumption, Graham Ferry Road and Day Road will have to be widened as shown in Figure 1A. At this point, no Financially-Constrained Network findings have been moved forward from the Basalt Creek planning. Once those findings are finalized the City will work with Washington County to update the projects.
  * Scott related concerns from the City of Sherwood that nothing has been included for the Basalt Creek area in the Financially-Constrained Project List. Does this mean that it is not important to Wilsonville? He clarified that this is not the case. Since it is still unknown what projects for this area are and what the City's contribution is going to be, we have to wait until that information is available before what is going to be included for Basalt Creek is revisited.
  * Grahams Ferry Road and Day Road are included in Figure 1A because they are part of the Preferred Network, but they have not been included in the Financially-Constrained Network yet. If the five-lane Tonquin Extension is built, then these two projects are not needed. (This issue is discussed again later in the meeting.)
  * Different funding scenarios were discussed for the Basalt Creek area projects.
  * The CIP can be amended by Resolution. The whole TSP would not have to be amended.
- It was suggested that comparisons could be made between the Financially-Constrained Street Projects Figures 2A through 2D and the Preferred Solutions Package Street Project Figures 1A through 1D.
- The City's functional classifications indicate how many lanes a road is to have; the classifications are design standards. For example, if you look at the major arterial classification and then go to the design standards, it tells you that a major arterial is to have "X" number of lanes.
  * Brad suggested that the figure legends could indicate the number of lanes for each street classification.
- Page 7 of memo was reviewed with these comments being offered:
  * As the City has funds for projects, it can use these five categories as policy to determine where funds go. DKS used this list that is consistent with Metro's recommendations to evaluate projects for the Financially-Constrained Solutions Package to consider how they are to be applied by the City.
  * It was noted that "traffic calming" is not on the list. Discussion of this included:
    - The city doesn't have any traffic calming devices. The prior City Engineer had no desire for them. The City Manager and City Attorney both indicated preference for the unwritten policy to not have speed bumps.
    - A footnote at the bottom of page 7 states that no traffic calming needs have been identified and if any do arise, then they can be addressed as safety needs (and so don't require a separate listing).
    - Traffic calming methods other than speed bumps were listed; the City utilizes methods other than speed bumps.

    - There needs to be a good clean process if a neighborhood requests traffic calming for their streets.
    - This issue is to be discussed further by City Staff.
  * It was suggested that while these are being called "categories" they are being used as prioritization measures.
    - It was questioned how to frame this in the context of a policy discussion where the City Councilors are going to be picking and choosing amongst projects?
    - There appear to be numerous different evaluation tools. How can they be lined up so that when City Council talks about priorities, they will know what criteria to use?
    - It was suggested that there is a hierarchy to follow; it is good investment to do the operational fixes. Then do the "cheap" projects first and the more expensive projects afterwards. But you have to demonstrate that the other projects have been considered.
    - Wilsonville is a growing city; it is fairly clear where the investments need to go.
    - Prioritization is about balancing to make sure there is a whole system; the way that this is set up, it looks likes projects are to be evaluated by moving down a list and broken out.
    - This is not a final cut; other preferred projects could be moved in and out if funding becomes available.
    - This is a regional policy that is desired but with local funds, it is going to be up to the elected and appointed officials to make decisions on the Capital Improvement Project list. Based on what is important to the city, they will create the CIP with funds that are available for those projects.
- Pages 8 - 15, Tables 1 through 5
  * Scott reviewed Tables 1 through 5 and the lists of projects that were not included in the tables and explained the approach that was used to compile this list. The unfunded projects listed could be moved into the Tables if funding becomes available.
  * Steve and Scott will have additional discussion later (outside of this meeting) about specific projects that were included in Table 1 and their project type listing.
  * Most of the regional trail segments are to be done in conjunction with a road project but at least two regional trail segments, Project R4a-Waterfront Trail improvement and Project R6a-Wiedeman Road Trail (Table 2 on page 11), are stand-alone trails. Scott stated that he would discuss with the City taking a local match portion for the construction of regional trails. Gail noted that Wilsonville is going to have to link up with the RTP at some time. Scott, Chris, Steve, and Mike are to coordinate on the assumptions for the regional trails and local matches.
    - Villebois developers are implementing Tonquin Trail. The big other regional trail piece would be in conjunction with the Bailey Street or 5th Street connection into Old Town. The last piece is on Metro's property along the east side of Coffee Lake Creek.
    - Gail suggested including language about local share to fund the regional trails projects is a good idea. Scott noted that Julia Hajduk of City of Sherwood had made a similar comment; that it would be better to assume a percentage of the cost of a related project for a local match and include that in the Financially-Constrained Project List than to just ignore it. There was agreement that this was a good idea as it shows the City is interested in those regional trail links. It was suggested that that the 10.27% not be specified because more generous local matches are desired. There appeared to be agreement that a local match of 20% to 25% sounded good. DKS will be making recommendations for the percentages for local matches.
    - City staff will be discussing the Basalt Creek area planning with Nancy, and then will get back with Scott about assumptions for local match funding for regional trails in the Basalt Creek area.

- The timing of the Basalt Creek Transportation Planning and Basalt Creek Concept Planning and issues relating to boundaries was discussed. The timing of the Basalt Creek area developing is unknown at this time. 2020-2025 framework has been suggested for the timing so there is time to review the TSP prior to the development.
- There was agreement that the Day Road and Grahams Ferry Road projects and the dollar amount allocated for those project be included in the Financially-Constrained Project List as a placeholder so that the funding for whatever project is eventually decided upon is there.
- Scott, Chris, Steve and Mike are to take another look at this. There are many issues here. It is easier to put things in and maybe with some regional funding assumptions. We will probably need to make some revisions to this.

• A discussion regarding the lack of transit projects was discussed:
  * The Transit Master Plan doesn't quite identify improvements; it focuses more on routes.
  * Scott will be talking with Stephan Lashbrook about this issue; he will be able to list projects such as pull-outs, concrete aprons, and bus stops.
  * Wilsonville's process for getting bus shelters is to negotiate with developers as part of a development agreement. When a developer doesn't want to dedicate land or build a bus shelter, the City does not have a clean way to get the transit facility.
  * With this TSP Update, there are now some draft policies that will help to get those shelters.
  * It was suggested that the TSP could specify that a bus shelter will be needed every so often along these prime transit streets and include a map of those prime transit streets and an approximate location for the shelters. This could help the City with getting the development community to build the transit shelters. Scott and Brad were asked about how to include this.
  * The City had already completed their Transit Master Plan, and DKS were building off of that information. There is not a list of transit projects for the TSP Update. No funding has been identified for specific transit projects.
  * Many of the projects do have a transit component such as increased connectivity to transit stops.
    - Better access to transit could lead to increased transit demand.
    - The stop infrastructure could be included as part of a project.
    - Because many of the projects have transit/bicycle/pedestrian improvement components to them; from a modeling standpoint, the analysis has been done for the reductions.
    - When DKS did their evaluations, they looked at future transit routes, existing transit routes, and other transit components to see what they would bring to the project.
    - As an example: the Barber Street connection from near the WES station to Villebois has a huge transit potential, but it is not a transit project. Other projects with transit benefits were named.
    - The Boeckman Road widening project to include bicycle and pedestrian facilities was discussed.
  * Transit funding comes from payroll taxes which funds transit operations at a sustainable level. A conservative and appropriate approach could be to say that transit is funded through payroll taxes. New buses have been purchased through grants in the past and this is the approach that DKS is taking for this TSP. Because there are new people involved in this planning process, including a new Transit Director, it might be worth reviewing these assumptions about tying transit into this TSP.
  * Transit needs to be better included in the TSP to show Metro that Wilsonville seriously considered transit to show compliance with the Functional Plan.
  * While transit facilities may not reduce the need for motor vehicle projects, they could push the need for adding capacity further into the future.

- Pages 15 through 20, Summary.
  * Scott briefly reviewed the Summary.
  * The pie chart on page 20 shows how the funding is allocated between the different travel modes.

Additional discussion included:

- The Frog Pond area is going to have 1,000 houses at build-out. Half of the funding of the streets in that area will be the developers' responsibility. Also, in Villebois, through development agreements, the developers are responsible for 85% to 90% for a series of projects, and maybe only the bike lanes will be funded with public money.
  * While the funding is not broken out into who pays for what, developer contributions are accounted for in the $77 million for the half street portion.
- The City requires developers to build the first 24 feet of a street and the City does everything beyond that. The 24 feet is measured from face of curb out into the street. Developer's responsibility also includes sidewalks, landscaping and street lights.
  * This applies to all street classifications.
  * This cost breakdown has been factored into how much the City gets paid by the developer.
- TSMO projects in Table 1.
  * The TSMO projects are categorized as safety projects or intersection improvement projects. They are adding turn lanes and signals at intersections; they are operational improvements at the intersections up to a quarter mile.
  * Gail offered to send Clark the interpretation of where operation ends and capacity starts.
- There are not any stand-alone fiber optic projects; it is all incorporated into roadway projects.
- The organization of the projects is consistent with the RTP. The committee was asked if this style of project organization is helpful or if they thought that it was too restrictive.
  * Gail recommended starting this memo on page 7. Since it is about the financially-constrained projects, tuck the Preferred Project List in the back of the memo or have it as an appendix to say that these project were all considered. She thought that the memo should focus on the Financially-Constrained Solutions Package.
  * The Preferred Solutions Package is shown graphically and the Financially Constrained projects are shown graphically and in tables. It makes it difficult to catch things. Although the last Technical Memorandum laid out the Preferred Solutions List and related information, it would be helpful to have both lists in one place in order to do a side by side comparison.
  * The projects seem to be segmented the way they are laid out. This formatting may be confusing when Council makes decisions, when applying for grants, or making decisions for Urban Renewal.
  * Without reviewing all of the project tables, it is difficult to know everything that a single project is doing. Various projects were listed as examples of a single project being in different category lists based on their components.
    - The Boeckman Road (Boberg Rd to Parkway Ave) project was discussed at length.
  * There needs to a chart showing how the projects are interconnected.
  * There is a big difference between what is going to come with development versus what is needed now. It is clear when a particular project is not going to be done unless development is going to pay for half of it.
    - It would be helpful to know if local connections are related to schools or other public development so that the priorities are identified when the economy slows again and there is no development, or when applying for a grant; what the City is going to do with its CIP regardless of what development is doing.

    * Scott offered to compile a matrix in the appendix that goes through a list of all the projects, listing how the projects are interconnected.
        - This would be a good way to show the transit component of projects.
        - The matrix could also include the trigger that would be associated with a project; the conditions that would require it to happen in a certain timeframe.
- ODOT has told Wilsonville not to expect any ODOT funding for a long time as ODOT and the City just invested $20 million in the Wilsonville Road/I-5 Interchange improvements.
    * The two ODOT facilities in Wilsonville are the two I-5 interchanges (which includes a section of Boones Ferry Road south of Day Road).
    * The Basalt Creek planning may include an ODOT project.
    * A City Councilor's key concern was about the traffic jams on I-5 with Boone Bridge being the choke point. The City has been told that there is not enough room for a southbound auxiliary lane between Wilsonville Road and the Charbonneau off ramp. ODOT has also explained that once the interchange improvements are finished and the ramp metering is turned on, the expectation is for this traffic problem to improve.
    * It was suggested that projects could be identified in the TSP with a note saying that the City is not going to fund these projects, but would like to do them if any ODOT funding becomes available.

3. Next Steps:

- The policies are to be presented to the Planning Commission on August 8. The solutions are not yet ready for public review. Scott and Brad would like Committee comments prior to that meeting.
- DKS will be following up with City Staff to revisit the assumptions and categories.
- DKS will be working with city staff to revise the Financially-Constrained Project List.
    * They will be revisiting the funding and will be looking at local matches for some of the regional projects, adding those in.
    * DKS and City Staff will brainstorm a bit more regarding Basalt Creek to come up with a good approach there.
- DKS is to talk to Stephan to reevaluate the transit component and come up with a list of transit projects.
- DKS will continue work with the City Staff for the next several months on a solutions list that can be taken to the Planning Commission and City Council.
- Scott and Chris will be talking about the project schedule.

Meeting adjourned at 3:24 p.m.

Wilsonville Transportation Systems Plan Update
Technical Advisory Committee Meeting
February 7, 2013
1:30 p.m.

Those present:

City of Wilsonville:
- Chris Neamtzu
- Dan Pauly
- Mike Ward
- Nancy Kraushaar
- Katie Mangle
- Linda Straessle
- Jen Massa-Smith
- Stephan Lashbrook

DKS Associates:
- Scott Mansur
- Brad Coy

Darci Rudzinski, Angelo Planning Group
Gail Curtis, ODOT
Caleb Winter, Metro

Material distributed at the beginning of the meeting included:
- Meeting agenda
- Draft Transportation Systems Plan Chapters 1 through 7
- Proposed Development Code Amendments, Updated February 4, 2013
- Findings of Compliance with the RTFP and TPR, Updated February 4, 2013

Meeting Purpose
Review and receive feedback on the Draft Transportation System Plan, Draft Implementing Ordinances and RTFP Compliance Findings to identify changes in preparation for the upcoming Planning Commission and City Council meetings.

1. Draft TSP (DKS)
   - Review Draft TSP Chapters 1-7

Scott Mansur and Brad Coy reviewed the draft TSP chapters. Scott asked that the TAC members forward their final feedback on the draft chapters to DKS Associates by the end of the business day, Friday, February 15. He and Brad welcome phone calls from the TAC members with questions or concerns. He noted that Chris Neamtzu and Katie Mangle could answer questions as well.

The following comments and concerns were discussed during the review of the draft chapters.

Chapter 1: The Context:
- Scott reviewed the elements of this chapter.
- Page 8. Table 2: Estimated City Funding Available through 2035 for Capital Improvements:
  - This chapter lists that the city will have an estimated $104 million of available funding. A later chapter lists that $123 million is assumed to be available for the higher-priority project list. The reason for the difference in amount is that the $123 million includes assumptions for grants, local partners and regional funding; the amount listed in Table 2 does not include these additional sources of funding.
  - The "Estimated Capital Improvement Funding through 2035" for Park SDCs is listed as "minimal" but the amount may be significant to somebody; another word should be used.

- Brad noted that this amount has been identified in a later chapter, so that amount could be listed here.

* Nancy Kraushaar questioned about the $27 million listed for the West Side Plan – Urban Renewal District.
  - The amount came from Kristin Retherford, the City's Urban Renewal Manager. Scott had verified this amount with Kristin and she had advised him to leave this amount in here for now.
  - Nancy expressed concern that this amount may be too high as Urban Renewal money is never for sure. She will get back with Brad regarding this issue.
  - Katie noted that this is the best current information. She suggested that the funding source for the current Urban Renewal Plans needed to be framed in an appropriate way.
  - Brad suggested that Note "a" at the end of the table could include more comments about development and make clear that the amounts listed in this table are assumptions. Katie and Nancy agreed. Scott said that he would make this change.

Chapter 2: The Vision:

- Scott noted that this chapter provides goal descriptions as identified by the City.
- He pointed out that Policies 17-21, on page 7, address agency coordination.
  * Categorization of the policies are indicated in the table of contents.
  * When Brad stated that the page numbers for the chapters would be updated so that the TSP has continual numbering between the chapters, Linda Straessle explained why page numbering that included the chapter number (ex: page 2-1, 3-1) makes it easier to update the plan in the future. She also noted that references to page numbering within the Plan text could cause confusion if future plan amendments change the pagination. There was agreement to keep the page numbering by chapters.

Chapter 3: The Needs.

- The listed needs have been discussed by the TAC previously; they have been taken from the Technical Memo and placed into a chapter form.
- The needs have been broken by city quadrants for showing the system gaps. DKS cleaned up the figures to make sure that they are clear and easy to read. He asked that TAC members let him know if additional efforts are needed to make the maps clearer.
- Page 5. Figure X. Roadway Cross-Section Deficiencies.
  * The deficiency on the southern part of 95th Avenue is that there are gaps in the sidewalk system on both sides of 95th in that area. There is a project to correct that deficiency.
  * There is a gap in the sidewalk system on Elligsen Road between Canyon Creek and Parkway Avenue. Mike Ward is going to look into this further.
- Page 8. Freight Routes and Deficiencies and Page 9. Figure X. Freight Roadways & Deficiencies.
  * A discussion about whether Stafford Road needed to be identified as a freight route concluded with since the county does not have it identified in their draft TSP as a freight route, there is no need for Wilsonville to identify it as such because it would not connect to anything. Scott is to remove Stafford Road from the freight route map.
  * The Freight Routes and Deficiencies map is based on Wilsonville's freight carriers survey responses. The map shows areas where the freight users indicated deficiencies. The purple lines indicate the roads that trucks are currently using.
  * There is a "No trucks" sign on westbound Wilsonville Road just west of Kinsman Road because there is not a good place for trucks to turn around before they head out of Wilsonville. Clackamas County and Yamhill County signed it a long time ago because trucks were using it as a

cut-through to Newberg and getting into trouble. The red line on the map showing truck limitation is to be extended just west of Kinsman Road to be consistent with the "No Trucks" signage.

* Scott noted that the roadways identified as "Trucks Present on Roadway" is different than what is identified for the freight routes in the Standards chapter.
  - There was agreement that the heading, Freight Routes and Deficiencies, should be changed to, Freight-related Deficiencies as this section is about deficiencies; not about freight routes. The title of the map also needs to be changed to Freight-related Deficiencies.

Chapter 4: The Projects

- Scott responded to concerns raised at the July 31, 2013 TAC meeting:
  * Julia Hajduk from the City of Sherwood, had expressed concern that Wilsonville may not be adequately addressing the Basalt Creek area. Scott noted that the Day Road improvement project, Project RW-02 at $6.6 million, has been placed on the priority project list. This funding will be available to assist with the Basalt Creek area.
  * Another concern from Julia and Clark Berry of Washington County was that the Tonquin Trail was not on the project list in the northwest corner of the city. Projects RT-03a and RT-03b, with a total budget of $3.2 million, have been added to the higher-priority project lists. These projects are listed in Chapter 4, page 6, Table X. Higher Priority Projects (Northwest Quadrant and page 10, Table X. Higher Priority Projects (Southwest Quadrant). They are also shown on the northwest and southwest quadrant maps on pages 7 and 11.
    - About half of Tonquin Trail that is in Wilsonville's city limits has already been constructed.
    - Scott will follow up with Julia as she was unable to attend this meeting.
- Page 14. Table X: Higher Priority Project Costs. This is the table that shows that there is approximately $123.4 million available to fund projects and at this time the higher priority projects add up to $117.9 million.
  * There is a series of matrices that provides the cost breakdown and where the money is going to come from for the projects. The matrices will be in the TSP appendix.
- Page 15. Brown Road Alternatives.
  * There was a lengthy discussion regarding that there are still two Brown Road Extension alignment alternatives.
    - Scott stated that the intent is to leave both alternatives in the TSP until a decision can be made for the most feasible alternative.
    - DKS has prepared a white paper that provides additional technical information about the two alternatives.
    - Possible triggers could be listed such as the Brown Road Extension has to part of the master planning of the area. Other triggers could be development proposals, level of traffic on Wilsonville Road and Boones Ferry Road, or other triggering event.
    - There also needs to be additional language included in case a triggering event does not occur to ensure that the Brown Road Extension gets built such as that a decision on the alignment had to occur before development could happen in the area.
    - If master planning of the area ignores that the connections is needed, then that opportunity is lost. There is too much ambiguity in this that could cause problems later.
    - The TSP is the legal document that will ensure that the connection is made, so the language has to firm enough that it can stand against a legal challenge. This language may be too vague with no real requirement for construction of the extension.
    - The City may decide to use Urban Renewal funding to build the road prior to development.

- There could be language stating that both alternatives are valid but alignment will be decided based on development proposals.
- Significant information is lacking such as railroad crossings, geography and what lands are expected to develop. The routing of the extension depends on which properties are ready to be developed and what that development will look like. This is the type of information that will determine whether Brown Road will connect at Bailey Street or 5th Street.
- DKS and City Staff is to work on additional language and bolster it.
- Gail advised that the City's legal department should be consulted about the language to make sure that the language is secure for a legal challenge. Would the language put the City in a good position to get either of the alignments in a development review situation where the City is trying to exact a right-of-way?
- At this time the railroad crossings will have to verified. Scott summarized his conversations with ODOT Rail by explaining that it would be easiest to leave the future crossing at 5th Street since that is where the approval is. ODOT Rail did not say that the railroad crossing option was locked in at 5th Street, but it will be a tougher process to relocate to Bailey Street; a two-step process instead of just one.
- There was a discussion whether City Council would be prepared to adopt an alignment with the adoption of this Plan. This is a question to ask Council.

* It was noted that the closure of a portion of Industrial Road would only occur if the Kinsman Road Extension happens.

- Based on comments from the July 2012 TAC meeting, the following changes were made:
  * The priority projects are listed first and then the planned projects are in a different section. The planned projects are those that were identified as needs to the system but did not have funding available to pay for them.
  * Additional coordination with SMART resulted in identified transit projects in both the priority projects list and the planned projects list.

Katie noted that Chapters 1 through 4 include City Staff comments and Chapter 5 includes most of City Staff comments just not the bicycle route comments. City Staff has yet to submit comments on Chapter 6 and 7.

Chapter 5: The Standards

- DKS will include the bicycle routes right after the freight route section. Brad listed what would be included on the bike route maps.
- Page 8. Freight Routes and Page 9. Figure X. Freight Routes
  * This section is to be used as a tool so that as each of these identified freight route roads and intersections are designed or are improved, Engineering staff can make sure that they are designed for freight vehicles.
  * The City can use the map as a tool to identify critical freight or transit routes in the city when applying for grant funding. This is something new - the community has indicated that this is important to them. Gail added that this is important to the region as well.
  * The following freight route segments are to be removed from the map:
    - Remove Parkway Avenue between Boeckman Road and Town Center Loop. There is a conflict between multi-family and the desire for freight. Scott did not see the need to have that segment be a freight route with the other connections that are available.
    - Remove Town Center Loop East
    - Remove Wilsonville Road east of Town Center Loop West.

    - Remove Parkway Avenue south of Memorial Drive. The segment of Parkway Drive between Wilsonville Road and Memorial will remain as a freight route to allow access to the Honda dealership.
  * Mike stated that anything in the shaded area on Figure X. Freight Routes around Boeckman Road is going to have to access Boeckman Road because of the geographic; specifically the Mentor Graphics property south of Boeckman Road.
  * The following roads are shown as existing but need to be corrected to indicate that they are future roads:
    - Canyon Creek Road South extension to Vlahos Drive
    - Weidemann Road
    - Brown Road Extension south of Wilsonville Road to Bailey Street and 5th Street.
- Page 11. It was noted that Notes 1 and 5 are the same.
- Page 15. Figure X. Low Impact Development (LID) Local Street Cross-Section,
  * This is has been added consistent with the desires of the RTFP for smaller street cross-sections.
  * DKS looked into using obliques for the street cross-sections but decided against them because of added costs.
  * This TSP simplifies the collector classifications to just one collector category with different design options based on the land use, with the Community Development Director having the flexibility to make decisions and the Public Works Standards having more details. This TSP's simpler classification system still has good standards on what typical streets would be like in each category but allows some flexibility for transit stops, land uses, and other considerations.
- Page 16. Figure X. Shared-Use Path and Trail Cross-Sections.
  * The "Shared-Use Path Adjacent to Roadway" cross-section shown on page 16 is from the *Ice Age Tonquin Trail Master Plan.* It is to be corrected to Wilsonville's *Bicycle and Pedestrian Master Plan's* standard of 8'-12' for this type of trail.
- Page 17. Figure X. Bicycle Facility Design Options.
  * There is design option flexibility for different facilities to be implemented depending on the type of use.
  * There is flexibility in the design options to allow cycle tracks where the bike lane is next to the curb with car parking between the travel lane and the bike lane. The photo on page 17 shows a cycle track. The Community Development Director will have the flexibility to make decisions on different street cross-section designs to accommodate other bike lane options other than what is shown on page 17.
  * The *Bicycle and Pedestrian Master Plan* includes design options for bike lanes and that does not need to be replicated in the TSP.
  * Adding cross-references to the *Bicycle and Pedestrian Master Plan* was suggested; state that, "Additional details are provided in the *Bicycle and Pedestrian Master Plan.*"
  * Gail noted that the State has updated its bicycle standards to open up the types of facilities that may be appropriate for communities. Scott asked Gail to send him a link to the updated document.

Chapter 6: The Programs

- This chapter does not include any City Staff comments. Katie asked that other City Staff get their comments to her by Wednesday if they have not already sent them to her.
- Page 1.
  * It states in the "Transportation Programs" box that Wilsonville has Safety and Bicycle programs when in fact it does not. It needs to be clarified that the programs listed in this box are existing and recommended programs.

* Page 12. Bicycle and Pedestrian Coordination. This more accurately describes the programs that are recommended.
* Jen Massa-Smith discussed the "Walk Smart" and "Bike Smart" programs that encourage and lead walks and bike rides and provide safety information. Technically, SMART provides these programs.
  - One of the criteria for being defined as an existing program is having a dedicated staff person. Jen and Michelle Marston, SMART's Program Coordinator, promote walking, biking, transit, and those related programs, as part of their jobs. It would be legitimate to put them down as coordinators for those programs when applying for awards such as the "Walk Friendly Communities" designation in order to meet the criterion of having a coordinator.
  - Darci referred to Chapter 2, page 10, "Active Transportation: Pedestrians and Bicyclists" Policy and Implementation Measures and noted that they focus on the City providing facilities. She suggested that this section needed to provide for more robust programs to provide decision-makers direction for program support and funding.

Chapter 7: The Performance

- Table X. Wilsonville Performance Measures identifies performance targets and what the City is doing to meet the listed performance areas to determine how they are doing.

Other comments regarding the draft TSP chapters included:

- Environmental Justice was addressed in a previous DKS Technical Memo and is addressed in the Policy 8 which states that the needs of underserved citizens are to be consider when planning the transportation system. It was noted that the policy is not very robust in addressing Environmental Justice. This issue was discussed at length.
  * Caleb was asked if Metro would require stronger language; he stated that he would follow up on this. Brad and Scott will check with Oregon City as it has addressed it in their TSP. Scott asked Caleb to provide them with additional examples of how other cities address Environmental Justice.
  * Gail stated that the RTFP would also give some guidance.
  * Gail stated that Environmental Justice was included in the Scope of Work for the TSP work since it is derived from the RTFP so there is an expectation to include it in the TSP.
    - Some of the transit work may address Environmental Justice.
    - Scott stated that each of those areas all have projects identified. It has been addressed; it just hasn't been documented.
    - Scott recommended that this be folded into Chapter 3. The Needs. It would make it clear in the Project section as to how they have been addressed.
    - It would a big factor to have Environmental Justice addressed in the TSP when applying for Metro or federal money.
    - When it was suggested that a map be included that show where the underserved population areas are, caution was expressed about creating a map because people who would be in the areas highlighted in a map don't like to be identified as people who live in the poorest parts of town.
    - It was noted that there aren't that many neighborhoods that would be included on the map; these areas are known to City Staff.
    - Caleb will look at other jurisdictions for guidance and report back.

- Scott stated that DKS could document how it is addressed in a document other than the TSP to show our partners as to how it has been addressed. He will follow up with Chris, Katie and Caleb about what would be the best way to address Environmental Justice in the TSP.

3. Draft RTFP Compliance Findings (Angelo)
   - Review Draft RTFP Findings Document

Darci explained that this documents how Wilsonville already complies with the regional requirements, goals, and expectations. The actual numbers of the tables and figures that are referenced in this document will be filled in once they are assigned in the TSP.

2. Draft Implementing Ordinances (Angelo)
   - Review Draft Implementing Ordinances Document

Darci explained the following:

- There are some references to tables and figures that are included in the Draft TSP; the actual numbers of the tables and figures will be filled in once they are assigned in the TSP.
- She is still working with City Staff on making sure that what is referenced for suggested Code language is consistent with other areas of the Development Code; that it works with how development is approved through the Planned Development review process and the Site Design Review processes.
  - There are still some cross-references, ambiguities, redundancies, contradictions, and vagaries with the current Code that are being double checked.
- It is still a work in progress. It includes suggestions about where changes could be made.
- The types of changes fall under three categories
  - Codifying or memorializing current practices. Section 4.012 Public Hearing Notices on page 4 of 24 was offered as an example.
  - Increasing safety accessibility, connectivity for all modes.
    - There is a new section focused on bicycle and pedestrian circulation.
    - There are also standards for vehicular access and circulation to ensure that connectivity is happening through the development process.
  - Increasing multi-modal travel.
    - Bicycle parking standards have been refined.
    - Transit-related requirements from the Transit Master Plan are being translated into Code requirements; they are not quite done yet.
- Katie and Chris reviewed this with Steve Adams, who does most of the development review for Engineering, and he liked most of it. It was codifying a lot of what he does on development applications. He agreed that having the transit improvement section on page 7 is an important move. It will make it more orderly as he is working with developers.
- The edits on this document reflects City Staff's current review.
- Although there is still some question about it, City Staff is thinking that the TSP and the TSP-related Development Code amendments should go through the adoption process at the same time.
  - There are still questions regarding the Code amendments so there is still a lot of work to do to refine it before it is ready for the adoption process.
  - Gail encouraged that the Code amendments be done at the same time as the TSP.
  - If there are issues that the Planning Commission or City Council get bogged down with, those pieces could be pulled out to be dealt with later, but 80% to 90% of the Code amendments can be done the same time as the TSP.

    - The Code amendments will need to be compared to the Villebois Code to make sure that the different processes are consistent. How the TSP Code amendments might affect the Villebois Code needs to be thought through.
- Page 9 of 24.
    - A lot of the bicycle parking was pulled from the Village Zone section because it addressed short-term and long-term bike parking and other standards.
    - Darci listed other jurisdictions that she pulled bike parking standards from.
    - Section 4.155(.04)(B.) General Provisions is a new section for Bicycle Parking.
        - The minimum bicycle parking standards have been removed from the parking table and are now a percentage depending upon how much vehicular parking is required.
        - Darci stated that she was not sure what the percentages were based on; the focus was on addressing short-term and long-term bicycle parking.
- The first two pages of the document can be considered the "cheat sheet" regarding RTFP expectations which can provide direction for developing findings and support for the agencies that are reviewing projects.
- Page 5 of 24. Section 4.154(.01)(D.)
    - This states that pedestrian crossings shall be marked. It was noted that this text was from the current Code. Scott explained that there are studies from FHWA that say that you don't want to mark all crossings because if you mark them, it gives people a false sense of security. He recommended that this section be removed. There was agreement that "D." was to be deleted.
- Caleb will provide comments regarding the Code amendments by February 15. He asked Darci to flag any issues that she thought that he would be interested in.
- Gail explained that the TGM Program is working with Rick Williams to develop a parking primer handbook that will assist in determining what a parking management plan is. Gail will assist Darci in acquiring the handbook.
- Page 7 of 24. Section 4.154(.03)(C.)(1.) regarding bus pullouts.
    - Stephan Lashbrook preferred that bus pullouts not be tied to a specific trip count, but rather state that it may be required; make it discretionary based on the Transit Director's authority.
        - It would be based on geography, uses, street speed, other considerations.
        - Combining (1.) and (2.) to make it general was suggested.
        - Stephan will discuss this with his people and forward language to Darci.
    - Darci stated that the applicability statement for transit improvements is not clear. Under Section 4.154 (.03)(A.) it is clear that this is for major transit streets, but the new development language in Section 4.154(.03)(B.) is ambiguous about whether this is just about new development on major transit streets or new development or re-development on any transit street.
        - The same issue applies to Section 4.154 (.03)(C.) and (D.).
        - It is more of the impacts you have may require additional or the next level of transit improvements. It needs to be clear who is going to be required to do this. It is ambiguous right now.
        - This needs fine tuning since it is being modified from the Transit Master Plan. Because Angelo Planning Group is not completely familiar with the rationale as to why it was developed in the Transit Master Plan, they were hesitant to do too much tweaking. The goal is to make it easily implementable and clear.
- Gail stated that this is an important question of what is development. The Code has a non-conforming development standards and some thought is needed as to how the language relates to the thresholds.

- Katie stated that because the decision to move the Code amendments forward with the TSP adoption was made very recently, they will now ask other staff members to review it with a higher level of scrutiny.
  - Katie asked Darci to send Katie a Word version of the Code amendments for City Staff review.
- Page 4. There is a new definition for "Major Transit Streets" and it is performance based; it is not mapped in this TSP.
  - A map is not included because of possible frequent updates.
  - Nancy recommended that since this TSP will not have major collectors any more that it has to be made sure that this is consistent with the new street classifications.
  - It was pointed out that Fred Meyer and Argyle Square are developments that generate more than 500 PM peak hour trips.

City Staff, Scott and Brad met after the meeting to discuss chapter layout

3. Next Steps

Planning Commission Meeting

- February 13, 2013 - Chapters 1 through 4 are to be reviewed.
- March 13, 2013 - Chapters 5 – 7 and the Code amendments are to be reviewed

City Council Meeting

- March 4th or March 18th:

The meeting was over at 3:15 pm.